openMontgomery

Montgomery County Maryland's Digital Government Strategy
Building a 21st century program to better serve
our residents, employees, and other partners

Version 2.0

December 12, 2012

Montgomery County Government
Office of the Chief Administrative Officer
101 Monroe Street, 2nd Floor
Rockville, MD 20850

Contents

I. Introduction

Montgomery County Government, Maryland, is an East Coast County government in the National Capital Region with a population of approximately one million, $4.5B budget, and a triple A bond rating by all three rating agencies.

The County has been an early adopter of technology and promoter of a transparent and efficient government. This represents the County's commitment to being an inclusive, innovative and transparent government that is accountable and responsive and maintains a strong and vibrant economy [Ref. 1]. The County has been a leader in open government since the launch of its e-Government website initiative in 1992. Since then, the County has sustained a strong commitment to digitizing its information and services. The County has proven its ability to successfully invest in, exploit and sustain emerging technologies on a large scale. This has been shown across many of its business areas including administration and general services, human capital management, public health, public safety, corrections, transportation and public works, and other lines of County business [Ref. 2].

As a trailblazer and innovative user of technology, the County has earned numerous national awards and recognitions [Ref. 3]. A crowning achievement may be the fact that the Center for Digital Government recently noted that Montgomery County is the only County government to rank in the top ten in the first 10 years of the Center's Annual Digital Government Surveys.

County Executive, Isiah Leggett, jointly with the Councilmember for Digital Government, Hans Reimer, has introduced legislation to facilitate the County's continued efforts to build a 21st century program to better serve its residents, employees, and other partners [Ref. 4]. The amended legislation was passed by full County Council action on December 4, 2012 [Ref. 5]. On December 5, 2012, the County launched its "openMontgomery" initiative for the future digital government [Ref. 6].

This is intended to be a "living document" containing a discussion on the initial phases of openMontgomery. It includes a roadmap showing the major programs, activities and milestones contemplated by the County. The openMontgomery strategy includes salient elements of several programs in U.S. governments including the U.S. Federal government's program [Ref. 7] and the State of Maryland's program [Ref. 8], as well as forward looking government programs around the globe.

This document also details the four pillar programs currently embodied in the openMontgomery initiative: accessMontgomery, dataMontgomery, mobileMontgomery, and engageMontgomery. Underlying the commitment to these programs are the County's ongoing efforts to invest in facilitating technologies, business process redesign, innovation and staff development. Some of the major technology modernization initiatives of the County include Enterprise Resource Planning (ERP), Constituent Relationship Management (CRM), analytics and performance measurement (CountyStat), service-oriented architecture (SOA), Single-Sign-On (SSO) and HTML5. These are further described in the County's Enterprise Technology Strategic Plan (ETSP) [Ref. 9]. These investments have prepared the County to securely exploit emerging disruptive mobile, social, cloud and information (analytics) technologies going forward [Ref. 10]. The County has also created and filled the position of Chief Innovation Officer in the Office of the Chief Administrative Officer.

A discussion is included about the likely ways the County's open government programs will mature. This maturity will develop commensurate with continued executive priority and sponsorship, available resources and revenue, constituent feedback and participation, legislative support, and evolving common technology infrastructure of the government and its environment.

II. openMontgomery (Digital Government) Strategy Objectives

The following are the County's forward looking strategic objectives for its digital government program.

1. Enable County residents, businesses, partners and an increasingly mobile workforce to access high-quality digital government information and services anywhere, anytime, and in multiple ways.

The explosion of mobile devices (such as smartphones and tablets) in use by the County's workforce, residents, partners and businesses have exponentially increased the demand for high-quality digital government information and services to be accessible anywhere, anytime, and on a variety of devices. As a part of its openMontgomery initiative, the County is realigning its technology investments, architectures and organizational support structures to meet this demand. Additional emphasis is being placed on further digitalizing the County's current services through technology upgrades, opening up the County's data sets and rolling out mobile applications including mobile versions of the County's web pages and applications that are designed to work on mobile devices and in many languages – an important feature given the County's diverse demographics. The County envisions that these investments coupled with its strong customer service management program, MC311 [Ref. 11] and strong performance management and analytics program, CountyStat [Ref. 12], can mature its open government posture from being informational to participative while positively impacting its economic development prospects and programs. Internally, the County has implemented technologies that enable its workforce to work securely using mobile technologies at any time and from everywhere.

2. Ensure that as the government adjusts to this new digital world, we seize the opportunity to procure and manage devices, applications, and data in smart, secure, and affordable ways.

The rapid commoditization and consumerization of information technology is encouraging the County to evolve its open data initiatives and its need to promote the acquisition of open-data-powered applications whether they are insourced, outsourced, or crowdsourced. The County is ultimately focused on improving efficiency and bringing value to its communities. To foster this, the County's goal is to invest in open government programs that contribute to the creation of an ecosystem of interoperable open services within the government, across its external agencies [Ref. 13] (including K-12 and higher education), the private sector and the County's active network of non-profit entities.

The County has been a forerunner in investing in broadband technologies. It operates a 350-mile, high-capacity fiber broadband network known as FiberNet [Ref 14]. The County is planning to vastly increase its reach by connecting it to and interoperate with the State of Maryland's Inter County Broadband Network, ICBN [Ref 15], and the National Capital Region's network, NCRNet [Ref 16]. The County is making huge gains in providing broadband connectivity to its components and interconnects to ICBN and NCRnet further promote the County's digitalization efforts.

The County expects to rapidly grow its mobile applications portfolio and open-data-powered applications offerings at reasonable costs by reusing previously developed applications to develop similar applications. The County will also seek such solutions from its vendors, and subscribing to secure commercial solutions including common cloud platforms.

The County hopes to seize opportunities to improve electronic service delivery. To sustain these programs during tight budgets, the County will obtain value from internal transparency by improving the exchange of data between departments and agencies while decreasing the level of effort required to provide information to residents.

3. Unlock the power of government data to spur innovation, economic development, and improve the quality of services for Montgomery County residents and businesses.

The County currently publishes information and some aggregate data on approximately 300 services. Going forward, as a part of openMontgomery, the County is publishing disaggregate data sets to further its goals of transparency and accountability. The County subscribes to the nine open data principles advocated by the Sunlight Foundation that describe the attributes of moving from *Satisfactory Execution* to *Great Execution* as shown in Appendix A [Ref. 17]. This supports the County's commitment to informing its constituents about what their government is doing. The open data sets will promote access to government information and will allow consumers to share that data and information with other residents to visualize the data from many angles.

As experienced in some European countries, this opening of data could release value for social and commercial entities not just in the County and region but on a national and international scale. In this regard, the context being that the County's data is what sets it apart from other jurisdictions when families, research and educational institutions, non-profits and for profit businesses must decide where they want to reside and operate to be successful. The County hopes that the analysis and consumption of government data by these sectors can help drive the creation of innovative businesses and services that deliver social and commercial value and increase economic prosperity. The County further expects that when its data is utilized this way and in conjunction with data from other sources (e.g., State of Maryland, Chamber of Commerce, Census, comparable governments) the consumers of the data will participate and interact more with the County in decision making about government services. The County will make data informed and data driven decisions to spark innovation and to direct investments towards what works and where there is documented need, and a likelihood of improving service delivery. The County be developing metrics to measure success of the openMontgomery initiative, consistent with guidance from thought leaders in the use of public technologies [Ref. 18] that measurement is necessary for identifying and responding to citizen expectations and priorities; maximizing resources within budget limits; benefiting from collective intelligence; determining the value and success of the tools; meeting regulatory demands; and establishing a culture of accountability and transparency.

In addition to providing its data sets under its dataMontgomery program, the County is planning the use of advanced social media tools and designs for its mass communications channels and programs under its engageMontgomery program to promote two-way, interactive dialog for more participatory governance and decision making. The County's mobileMontgomery program will synergistically complement these efforts by making data and communications channels available on mobile devices so consumers may consume at their choice of time, place and platform.

In order to promote the use of this data, the government is planning efforts ranging from the government's own developments efforts to government-funded software challenge events (e.g., hackathons) which are open to anyone who would like to compete for the opportunity to demonstrate the most value of the data in a short period of time, e.g., a few hours or one day. Grounded in these marketing events that generate interest, the County hopes the consumption of County data will lead, as a natural progression, to the identification and powering of more complex services and processes. The County believes that its investment in Web services and SOA has created an ideal framework to support open services that operate using mashed (County and non-public) data and a federated model for the delivery of County and private services to create value for both sectors as well as County residents.

The County is leading the way in its compliance with the Maryland Public Information Act (MPIA) [Ref 19]. In addition to maintaining compliance with the law, the County has decided to publish the status of requests and the final responses. The County expects to promote transparency, making public information available voluntarily and promptly and minimizing the need for the public to make costly overlapping requests under the law.

4. Facilitate and increase workforce, resident, non-profit and business participation in County government in all major demographic segments.

The County has an employee-centric posture when it comes to leveraging workforce creativity. The County seeks to seize the opportunity provided by new emerging technologies to create public value. The County's use of mobile computing, wireless technologies, social media and cloud computing is enabling employees to innovate the way they work. This is leading to an evolution of the workplace and its tools, and supporting mobility, more flexible working times and places, real-time access to internal and external information, advanced analysis, and seamless collaboration.

The County has a strong commitment to the welfare of its workforce. It considers its human capital to be its most valuable resource. However, the County anticipates the need for an adaptive human capital and labor engagement culture in the future as the government continues to leverage the nexus of social, mobile, cloud and information technologies to keep abreast of economic competition and the growing demand for digital services. In preparation for this change, the County expects to continue to be sensitive to the safety of its employees and will invest in their training and will support them in the new world by equipping them with the necessary tools to perform effectively in the new environment. Employee training and engagement will be a critical success factor.

The County has adopted the use of social media tools such as Facebook and Twitter and is now proposing to add certain advanced mass communication and social engagement tools to encourage seamless socialization with its residents, non-profits and businesses. Concurrently, the County is deploying analytics tools to bolster its already strong performance measurement capabilities to analyze effectiveness of its digitalization efforts. This way the County expects to engage its many and diverse communities to improve its own services and to encourage dialog leading to better places to work, live, learn, and play.

As the distinction between internal and external collaboration blurs, the County envisions that it should provide workplace tools that allow the seamless sharing of information across these traditional boundaries. It seeks to create dynamic collaboration spaces that cross County functions, in the hopes to engage all demographic segments to strengthen government services through public, industry and non-profit sector participation.

By ensuring successful interoperation of enterprise information technology investments and operational and consumer technologies, the County will leverage the Internet in a new wave of constituent engagement and the redesign of government processes and services. If its programs are successful, the County will see economic growth when engaged external entities partner to create services and products that complement the County's services.

III. openMontgomery Conceptual Architecture Model

In order to build a 21st century digital government, the County is leveraging its investment in data assets and models, technology systems and infrastructure, and business processes to build a sustainable framework. Figure 1 below illustrates the conceptual model that comprises the three "layers" of digital services.

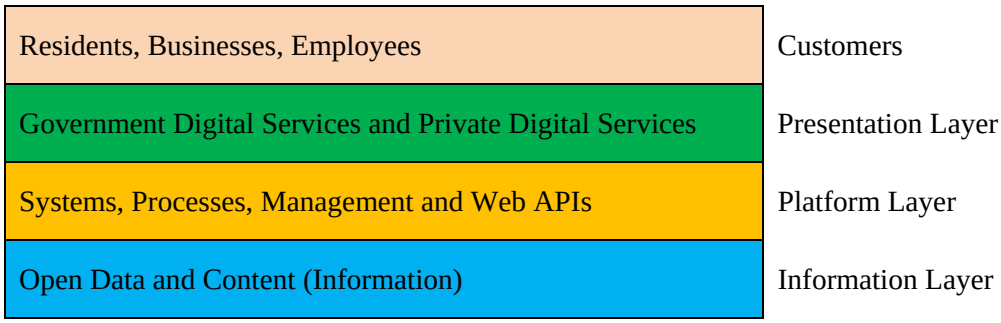
The information layer contains digital data and information. It includes structured information (e.g., the most common concept of "data") such as tax payer and employee data, plus unstructured information (e.g., content), such as fact sheets, press releases, and compliance guidance. To sustain these, the County has invested in sophisticated data management systems (e.g., database and data warehousing systems), high capacity data storage, and imaging and records management systems.

The platform layer includes all the systems and processes used to manage this information. These comprise the County's systems of record (e.g., its ERP system consisting of financial, human resources, procurement); its systems of differentiation (e.g., advanced traffic system management system, its waste management systems); and systems of innovation (e.g., its mobile applications and open-data-driven applications). In addition, the County is developing processes such as web Application Programming

Interfaces (API) and application development, services that support mission critical IT functions such as human resources or financial management, as well as the hardware used to access information (e.g. mobile devices).

The presentation layer defines the manner in which information is organized and provided to customers. It represents the way the County delivers or presents its information (e.g., data or content) digitally, whether through its website, mobile applications, or other modes of delivery. In order to leverage this layer to the maximum, the County has recently invested in upgrading to Web 2.0 and HTML5.

Figure 1- Layers of Digital Service Conceptual Model



The use of HTML5 is enabling the County's mobile presentation platforms in many ways. Some of the other important benefits are language translation, accessibility and the ability to handle multimedia and exploit interactive services.

IV. openMontgomery Strategy Principles

The following four overarching principles are driving the County's strategy for its openMontgomery initiative:

- An "Information-Centric" approach to move the County from managing "documents" to managing discrete pieces of open data and content which can be tagged, shared, secured, mashed up and presented in the way that is most useful for the consumer of that information.

- A "Shared Platform" approach which promotes collaboration and working together, both within and across County agencies. It reduces costs, streamlines development, applies consistent standards, and ensures consistency in how the County components create and deliver information.

- A "Customer-Centric" approach influences how the County creates, manages, and presents data through websites, mobile applications, raw data sets, and other modes of delivery, and allows customers to shape, share and consume information, whenever and however they want it.

- A platform of "Security and Privacy" ensures this innovation happens in a way that ensures the safe and secure delivery and use of digital services to protect information and its privacy in compliance with the law.

Each of these principles is supported by the openMontgomery initiative in the following ways:

1. Information-Centric Design

The openMontgomery initiative helps the County fundamentally shift how it thinks about digital information. Rather than continuing to focus on traditional presentation methods, i.e., publishing web pages, mobile applications or brochures, the County proposes to take an information-centric approach by

focusing on ensuring its data and content are accurate, available, and secure. In doing so, the County will gradually start treating all content as data. It will strive to turn any unstructured content into structured data and then ensure all structured data are associated with valid metadata. The County will make this information available through web APIs to enable interoperability and openness, and make data assets freely available for use within agencies, between agencies, in the private sector, or by residents. This will require the County to support device-agnostic security and privacy controls. A technique could be to apply security attributes directly to the data and monitor them through metadata, enabling County agencies to focus on potentially securing the data and not the device.

In production, the information-centric approach will ensure that the County and its components follow the same "rules of the road" by using open standards. It will also guide how the County presents information, from mobile applications to websites, and allows for increased automation at the presentation layer. If successful, the information-centric approach will add reach and value to the County's services by helping to surface the best information and making it widely available through a variety of useful formats.

2. Shared Platforms

The County already benefits from shared platforms for its mission critical systems in programs such as ERP, CRM, PSSM, IJIS, and HHS systems. To make the most use of County resources and "innovate with less", it will need to share more effectively, both within the government and with the public. The County will also need to share capacities to build the systems and processes that support its efforts, and be smart about creating new tools, applications, systems, websites and domains. Ultimately, a shared platform approach to developing and delivering digital services and managing data will not only help accelerate the adoption of new technologies, it could also lower costs and reduce duplication. To do so, the County will rapidly disseminate lessons learned from its early adopter components, leverage existing common or shared services, build for multiple use cases at once, use common standards and architectures, participate in open source communities, leverage public crowdsourcing, and launch shared government-wide solutions and contract vehicles.

3. Customer-Centric Posture

The customer-centric principle holds true whether the County's customers are internal or external. Putting the customer first means quality County information is accessible, current and accurate at any time whether the customer is in a residence, a workplace, or in a place of learning. From how the County creates information, to the systems it uses to manage information, to how it organizes and presents information, the County proposes to continue to focus on its customers' needs. It means coordinating across agencies to ensure when residents, businesses and employees interact with County information and services, they can find what they need and complete transactions with a level of efficiency that rivals their experiences when engaging with the private-sector.

The customer-centric principle is propelling the County to do several things: conduct research to understand the customer's business, needs and desires; make content more broadly available and accessible and present it through multiple channels in a program- and device-agnostic way; make content more accurate and understandable by maintaining plain language and content freshness standards; and offer easy paths for feedback to ensure the County continually improves service delivery.

4. Security and Privacy

As the County Government builds for the future, it must do so in a safe and secure, yet transparent and accountable manner. It is important to mention here that the County will put this information out in a responsible way ensuring compliance with all Federal, State and Local confidentiality, privacy and security laws, regulations and policies. This will be an important metric to measure program success against. Architecting for openness and adopting new technologies have the potential to make devices and data vulnerable to malicious or accidental breaches of security and privacy, e.g., in violation of laws such as the Privacy Act and the Health Insurance Portability and Accountability Act (HIPAA). They also create challenges in providing adequate notice of a user's rights and options when providing personally identifiable information (PII).

Moving forward, the County will strike a balance between the very real need to protect sensitive government assets given the realities of a rapidly changing technology landscape. To support information sharing and collaboration, the County will build in security, privacy, and data protection throughout the entire technology life cycle. To promote a common approach to security and privacy, the County is investigating ways to streamline identification and authorization processes through Identity and Access Management (IAM) tools, and support the development principle of "do once, use many times". The County is continually reviewing and evaluating solutions in areas such as continuous monitoring, identity life cycle management, and cryptography that support the shift from securing devices to securing the data itself and ensuring that data is only shared with authorized users. When appropriate, the County continues to develop requirements and solutions collaboratively with organizations such as the Multi-State Information Sharing and Analysis Center (MSISAC) and NIST's National Cybersecurity Center of Excellence, NCCoE [Ref 20] located in Montgomery County.

V. openMontgomery – A Digital Roadmap for Montgomery County Government

In adherence to its principles, the County seeks to achieve its objectives for an enhanced digital government by launching its openMontgomery initiative. The initiative comprises four major pillar programs.

dataMontgomery – is designed to open the County's high value datasets over the next 24 months.

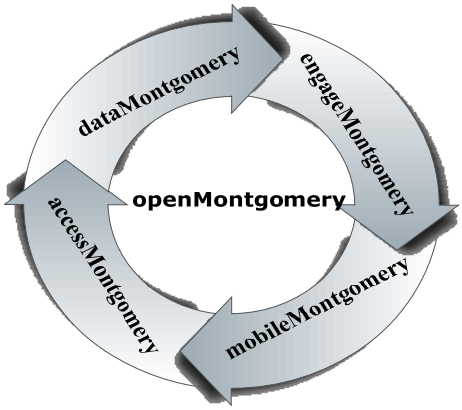
mobileMontgomery – is designed to make a wide range of mobile applications available for use on a number of the most popular mobile platforms and devices.

accessMontgomery – is designed to continue to leverage the County's extensive web services and information channels to disseminate information to the public. It also includes the implementation of tools that support a highly mobile workforce.

engageMontgomery – is designed to leverage a number of tools to engage the County's customers in participatory government practices. These include social media and social engagement platforms to continue an interactive and bidirectional communication on issues important to the public.

These four programs, shown in Figure 2, complement each other and work collectively to increase transparency and engagement of the user. Information and data published on accessMontgomery and dataMontgomery, respectively, is made available on mobile platforms in mobileMontgomery. All four components possess features that allow the public to communicate with the County.

Figure 2. openMontgomery Programs



Communications may include service requests, issues, preferences, ideas, comments and any other items of interest. engageMontgomery allows the County to post specific topics the County wants to engage the public on and get feedback on. This platform allows participants to engage each other in a many to many fashion. County subject matter experts monitor the engagements and participate in the discussions. In order for the County to fully measure the interest in a particular topic, this platform requires the user to establish a login account and provide self-identifying information including gender, age and zip code.

Figure 3 lists the activities in each of the program areas listed above the County plans to engage in within the next 3 - 18 months. Also listed are the names of the entities responsible for each activity. It is worthy to note that the County has completed several of the activities at the time of the openMontgomery launch.

Figure 3 – Activities by Program

#	Owner(s)	Milestone Actions	Comp-leted	Timeframe (months)*			
				3	6	12	12 +
Part 1: openMontgomery Policy & Governance							
1.1	Council	Enact Open Government Legislation (Bill 23-12)	X				
1.2	CAO / DTS	Develop Montgomery County's Digital Government Strategy and Roadmap	X				
1.3	CAO / PIO	Create an openMontgomery (http://montgomerycountymd.gov/opengov) Portal for its open/digital government initiatives	X				
1.4	CAO	Leverage CountyStat and Chief Innovation Officer (CINO) to facilitate openMontgomery		X			
1.5	CAO / DTS	Leverage the County's Interagency Technology Policy and Coordinating Committee (ITPCC) to promote openMontgomery		X			
1.6	CAO	Issue government-wide directive on openMontgomery to all County Departments and Offices		X			
1.7	CAO / DED	Convene a Digital Summit or "unConference" to promote the County's open/digital government initiatives and further engage consumers of County information and services			X		
1.8	CAO / DTS	Improve customer satisfaction measurement and analytics on the County's Web Portal for monitoring and reporting on the effectiveness of County services by CountyStat				X	
1.9	CAO / DED	Establish an Open Government Innovative Partnership to exchange views on on-going open/digital government innovation				X	
1.10	CAO	Work with the National Association of Counties (NACo) to sponsor a US Counties Open Government Innovation Partnership [Ref. 21]				X	
1.11	CAO	Continue to provide sponsorship and governance to the openMontgomery program					X

Figure 3 – Activities by Program (continued)

#	Owner(s)	Milestone Actions	Comp-leted	Timeframe (months)*			
				3	6	12	12 +
Part 2: dataMontgomery							
2.1	CAO / DTS	Select and implement a proven platform to publish County data sets in consumable formats	X				
2.2	CAO / DTS	Hold Focus Group meetings with stakeholders including the CIO's IT Policy Advisory Group (IPAC)		X			
2.3	DTS	Launch the County's Open Data website (http://data.montgomerycountymd.gov)	X				
2.4	DTS	Pilot the publishing and analysis of County data sets from select Departments		X			
2.5	DTS	Publish the County's Open Data Standards Manual		X			
2.6	DTS	Publish select County datasets on pioneer national open data web portal (http://counties.data.gov) created for counties		X			
2.7	CAO / Departments	CountyStat works with the Departments to identify at least one existing high value dataset to publish on dataMontgomery.			X		
2.8	CAO / DTS	Publish one existing major customer-facing County dataset from each major Department on dataMontgomery				X	
2.9	DTS	Publish the County's Open Data Implementation Plan					X
2.10	CAO / DED	Schedule first County "hackathon" or "civic application development camp" to demonstrate potential social, civic or commercial value of County datasets					X
2.11	CAO / CountyStat	Continue to monitor and manage the performance of the dataMontgomery program					X
Part 3: mobileMontgomery							
3.1	CAO / DTS	Develop a Mobile Web Conversion Plan that utilizes HTML5 to create cross platform, mobile friendly web applications hosted on web servers for easy access	X				
3.2	CAO / DTS	Draft a Mobile Applications Plan	X				
3.3	CAO / DTS / OCA	Draft policy for Bring Your Own Device (BYOD)			X		
3.4	CAO / DTS	Initiate Enterprise Mobile Technology Computing Pilot project to evaluate the deployment of mobile devices in the workplace	X				
3.5	CAO / DTS / PIO	Redevelop and launch the County's web site to be mobile ready (http://m.montgomerycountymd.gov)	X				
3.6	CAO / DTS / PIO	Launch mobile MC311 website (http://m.mc311.com)	X				
3.7	CAO / DTS	Develop and roll-out the County's web and mobile content management solutions (CMS)	X				
3.8	CAO / DTS	Launch the County's Mobile Technology Support Website (http://mobility.montgomerycountymd.gov)	X				

3.9	CAO / DTS	Conduct Mobile "IT Help Desks" to provide enhanced support for mobile technologies to County departments	X				

Figure 3 – Activities by Program (continued)

#	Owner(s)	Milestone Actions	Comp-leted	Timeframe (months)*			
				3	6	12	12 +
3.10	CAO / DTS	Support departments' efforts to develop mobile web sites and applications		X			
3.11	CAO	Issue guidelines to departments to develop mobile sites and applications			X		
3.12	CAO / DTS	Establish policies and technical guidelines for mobile applications framework, enterprise architecture, and web and mobile application development			X		
3.13	CAO / OCA	Develop model framework for mobile applications contracts			X	X	
3.14	DTS	Pilot a Mobile Device Management (MDM) platform				X	
3.15	CAO / DTS	Deploy a government-wide MDM platform					X
3.16	CAO / DTS	Update/finalize mobile application policies				X	
3.17	CAO / CountyStat	Continue to monitor and manage the performance of the mobileMontgomery program				X	
Part 4: engageMontgomery							
4.1	CAO	Issue a Social Media Policy via Administrative Procedure (AP) 6.8	X				
4.2	CAO / DTS	Establish a County contract to license a platform for a new digital civic engagement between the County and its constituents	X				
4.3	CAO / DTS	Launch the County's new engageMontgomery website (http://engage.montgomerycountymd.gov)	X				
4.4	CAO / PIO	Launch Montgomery OnDemand, a portfolio of County Social Media platforms (http://www.montgomerycountymd.gov/opi/onDemand.html)		X			
4.5	CAO / PIO	Conduct quarterly on-line Virtual Town Hall meetings with constituents		X			
4.6	CAO / DTS / PIO	Establish broad guidelines for the selection of topics/issues and develop standard operating procedures for administering engagements		X			
4.7	CAO / DTS / PIO	Leverage the IPAC, CountyStat and CINO to review and recommend civic engagement topics and issues on which to engage County constituents on engageMontgomery. Establish a plan to leverage engageMontgomery platforms.			X		
4.8	DTS	Provide Social Media Privacy and Security Guidance to Departments			X		
4.9	DTS / PIO / CountyStat	Develop long term engageMotgomery strategy (e.g., SurveyMonkey, video/web conferencing)				X	
4.10	CAO / CountyStat	Continue to monitor and manage the performance of the engageMontgomery program				X	

Figure 3 – Activities by Program (continued)

#	Owner(s)	Milestone Actions	Comp-leted	Timeframe (months)*			
				3	6	12	12 +
Part 5: accessMontgomery							
5.1	CAO / DTS	Provide enhanced Internet and WiFi access in County buildings, public facilities and gathering places; list GIS hot spots on accessMontgomery and dataMontgomery	X				
5.2	CAO / DTS	Deploy enterprise technology solution to provide for live and on-demand video programming	X				
5.3	CAO / DTS	Develop the County's longer term accessMontgomery strategy (e.g., broadband (FiberNet), IR, kiosk, teleconference)				X	
5.4	CAO / CountyStat	Continue to monitor and manage the performance of the accessMontgomery program				X	

*Timeframes are estimates and are subject to change

Abbreviations

CAO	Chief Administrative Officer
CountyStat	CountyStat Office
DED	Office of Economic Development
DGS	Department of General Services
DTS	Department of Technology Services
PIO	Public Information Office

The activities and milestones of the openMontgomery programs are aligned with the program's Strategy Principles discussed in Section IV above. Figure 4 attempts to display the openMontgomery activities and milestones as arranged by the program's Strategy Principles.

Figure 4 – Activities by Strategy Principles

#	Owner(s)	Milestone Actions	Timeframe (months)			
			1	3	6	12
Part A: Information Centric						
1. Make Open Data, Content, and Web APIs the New Default						
1.1	CAO	Issue government-wide open data, content, and web API policy and identify standards and best practices for improved interoperability			X	
1.2	Departments	Ensure all new IT systems follow the open data, content, and web API policy				X
2. Make Existing High-Value Data and Content Available						
2.1	Departments	Engage with CountyStat to identify at least two existing major customer-facing services that contain high-value data or content as first-move candidates to make compliant with new open data policy		X		
2.2	Departments	Make high-value data and content in at least two existing major customer-facing systems available				X
2.3	DTS	Expand Data.MontgomeryCountyMD.gov to include a web API catalog				X
Part B: Shared Platform						
3. Establish a Digital Services Innovation Advisory Partnership in the IPAC						
3.1	DTS	Identify and recommend government-wide best practices, guidance, and standards on a continual basis		X		
3.2	DTS	Release government-wide mobile device guidance based on lessons learned		X		
3.3	DTS	Identify shared and open content management system solutions			X	
3.4	DTS	Provide support to help agencies develop web APIs			X	
3.5	DTS	Develop and launch a shared platform mobile application development program			X	
4. Establish Intra-Agency Governance to Improve Delivery of Digital Services						
4.1	DTS	Recommend guidelines on agency-wide governance structure for developing and delivering digital services and managing data	X			
4.2	CAO	Establish an agency-wide governance structure for developing and delivering digital services as a part of the Open Government Implementation Plan	X			
5. Shift to an Enterprise-Wide Asset Management and Procurement Model						
5.1	DGS/ DTS	Establish government-wide contract vehicle(s) for mobile devices and wireless service(s)			X	
5.2	DGS	Develop an enterprise-wide inventory of mobile devices and wireless service(s) contracts			X	
5.3	Departments	Utilize government-wide contract vehicles for acquiring and managing for all new mobile-related procurements				X
5.4	DTS	Develop models for the delivery of commercial mobile applications into the County's enterprise environment				X
5.5	DTS/DGS	Set up a government-wide mobile device management platform				X

Figure 4 – Activities by Strategy Principles (continued)

#	Owner(s)	Milestone Actions	Timeframe (months)			
			1	3	6	12
Part C: Customer-Centric						
6. Deliver Emerging Digital Services Using Modern Tools and Technologies						
6.1	CountyStat / DTS	Use analytics and customer feedback to recommend improvements and additions to open/digital government services			X	
6.2	DTS	Update the dot gov domain guidance and procedures to help ensure all new digital services meet improvement guidelines and provide support to agencies			X	
6.3	Departments	Ensure all new digital services follow customer experience improvement guidelines				X
7. Improve Priority Customer Facing Services for Mobile Use						
7.1	Departments	Engage with CountyStat to identify at least two existing priority customer-facing services to optimize for mobile use		X		
7.2	Departments	Optimize at least two existing priority customer-facing services for mobile use and publish a plan for improving additional existing services				X
8. Measure Performance and Customer Satisfaction to Improve Service Delivery						
8.1	CountyStat	Identify tools and guidance for measuring performance and customer satisfaction on digital services		X		
8.2	CountyStat	Implement performance and customer satisfaction measuring tools on all dot gov websites			X	
Part D: Security and Privacy						
9. Promote the Safe and Secure Adoption of New Technologies						
9.1	DTS	Establish a process for data sensitivity evaluation and review that data owners must participate in with OCA and DTS			X	
9.2	DTS	Develop government-wide mobile and wireless security baseline (includes security reference architectures)				X
9.3	DTS	Develop government-wide mobile/e-social information security awareness training for senior County management and staff		X		
10. Evaluate and Streamline Security and Privacy Processes						
10.1	DTS	Publish updated Strategic Plan for Enterprise Security and Information Risk Assessment in order to define revised enterprise guidance and governance for cyber security in the nexus of mobile, cloud, social and information technologies		X		
10.2	DTS	Report on DTS's ongoing work in mobile technology, including the applicability of best practice standards and guidelines to mobile devices and platforms		X		
10.3	DTS	Evaluate opportunities to accelerate the secure adoption of mobile technologies into county government at reduced cost			X	
10.4	DTS	Develop guidelines for standardized implementation of digital privacy controls, educate agency privacy and legal officials for addressing digital privacy, records retention, and security issues			X	
10.5	DTS	Develop guidelines for authenticating customers that 'opt-in' to participation in the County's open government program			X	
10.6	DTS	Deploy secure collaborative workplace tools and environment for sensitive and non-public information sharing between County employees, agencies and partners				X

VI. openMontgomery Program Maturity Model

Figure 5 illustrates the likely states that the County's digital government initiatives will go through as they mature.

Figure 5 – Program Maturity Model

Element / Maturity	1. Basic	2. Evolving	3. Maturing	4. Mature (Sustainable)
County Programs	• CoMoMdUs: information oriented • eMontgomery: transaction oriented	• County Web Portal: information + transactions • CountyStat • AlertMontgomery • MyMontgomery • Social Media (i.e. Facebook, Twitter etc.) • MC311 including: • 311 call center • 311 portal for integrated on-line transactions	openMontgomery including: dataMontgomery engageMontgomery mobileMontgomery accessMontgomery	• Initial Open Services model – open data powered services, e.g., in science, education, culture and tourism • Bring Your Own Apps • Bring Your Own Data • Bring Your Own Device • Bring Your Own Friends
Services Provided to County Constituents	• "BrochureWare" oriented Departmental web sites • ePortal providing critical core on-line services including pothole, streetlight, property tax, library, recreation etc.	• Enhanced on-line services including back-end integration • On-line performance management + reporting • Urgent alerts via text/e-mail • Enhanced communication + information sharing on social media platforms • GIS mapping + web-based County location data for government services and assets	• Open data in consumable format(s) • Idea sharing + collaboration • Mobile web services	• Aggregation of County services via Web Services / API's • Offer County service information by geo location, personal preference, social affiliations, non-profits etc.
Technology Architecture & Platforms	Use of desk-top and some mobile devices (e.g., laptops)	Use of mobile devices including limited use of personal mobile devices (BYOD); use of social media; Cloud platforms and services	Web services, SOA-based infrastructure; use of mass engagement social media	Extensive use of interactive mass engagement social media across media services and networks
Security	Access privilege management; encrypted sessions	Single Sign-On allowing a single entity to access multiple County services	Two factor participant Identity Management	Federated Identity Management

The maturity of the openMontgomery initiative over time will depend on a number of factors including revenue and budgets, operational priorities and assigned resources, regulation, available platforms and solutions, and the level of customer engagement. These factors could selectively cause maturity levels of each program to vary. Figure 6 shows the relative maturity of each program on a scale of 0 to 5 (highest) when the above factors support mobile programs in maturing faster than the other openMontgomery programs.

Figure 6- Relative Maturity (Mobile Programs Leading)

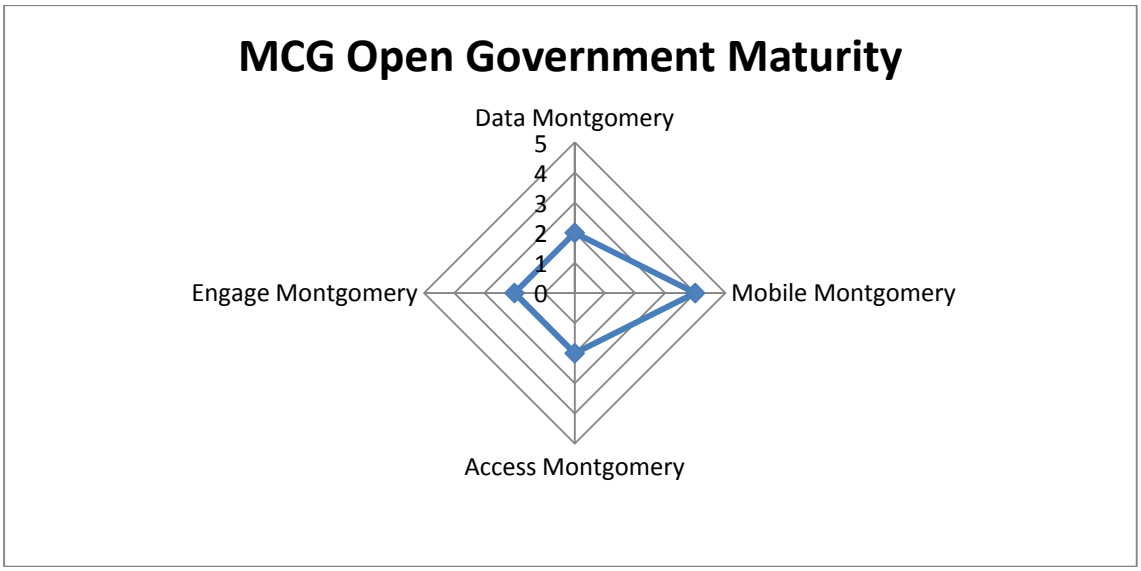
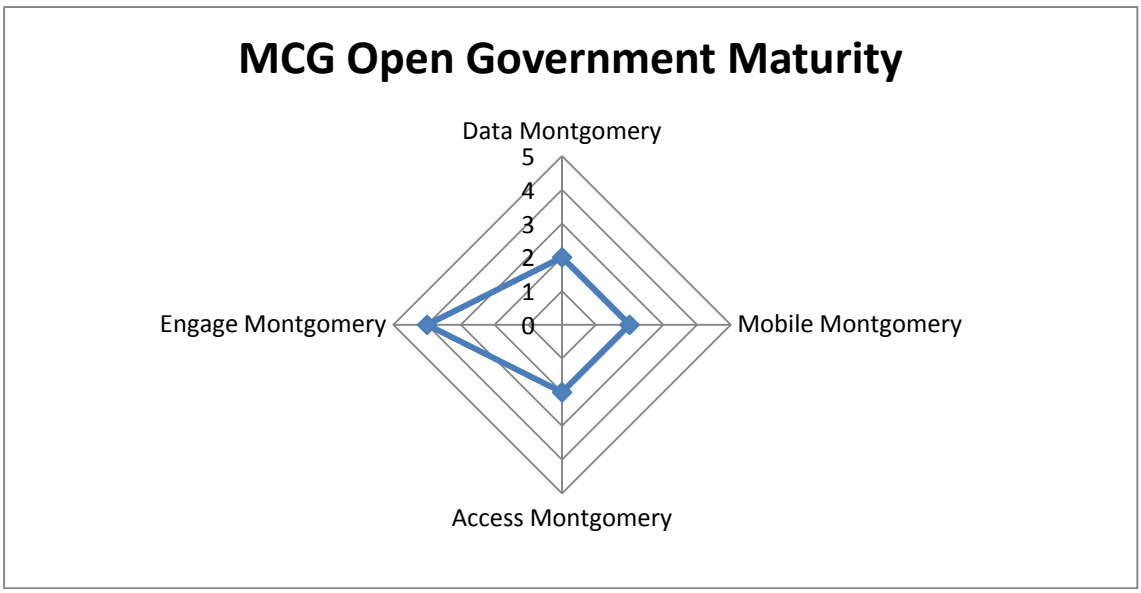


Figure 7 shows the relative maturity of each program when the above factors support social engagement programs in maturing faster than the other openMontgomery programs.

Figure 7 - Relative Maturity (Social Media Programs Leading)



VII. Conclusion

Technology is fundamentally transforming how the County conducts its business in an increasingly mobile, competitive and information intensive environment. Exponential advances in computing power, the rise of high-speed networks, and the growing mobile revolution, which puts the entire Internet at our fingertips, have unleashed new innovations, spawned new industries and reshaped existing ones. Montgomery County government is harnessing the power of technology to help create a 21st century digital government – one that is efficient, effective and focused on improving the delivery of services to its customers.

The activities and roadmap outlined within this Digital Government Strategy form a series of critical next steps to help build a 21st century government that innovates with less. To put the County on a path to unlock the potential of a digital government, the strategy emphasizes several key objectives and principles. By successfully achieving these objectives, the County will be able to actively guide our involvement in a rapidly evolving segment of the economy. By making data and information more readily available to those who would make use of it, we are leveraging an important part of our public capital.

First, we must enable residents and an increasingly mobile County workforce to securely access high-quality digital government information, data and services anywhere, anytime, and most commodity devices. By operationalizing an information-centric model, the County expects to help its components securely architect systems for interoperability and openness. Doing so will allow the County to modernize its content publication model and deliver better, device-agnostic digital services at a lower cost. In addition, by providing machine-readable connections to its data and services, the County's components, other governments, businesses, researchers, educators and independent innovators can directly access the building blocks of valuable information and services, e.g., the County's open data, and recombine them to create more information or new services or connect them with existing services to streamline operations.

Second, the County must ensure that as it adjusts to this new digital world, it continues to builds the modern infrastructure needed to support digital government efforts and leverage the County's buying power to reduce costs. Taking what we have learned from the previous transition in moving government information and services online, the County believes that it now has a chance to go mobile and procure and manage devices, applications, and data in a smart, secure, and affordable manner. By establishing a Digital Government Innovation Council the County will help lay the foundation for a well-coordinated approach toward these objectives.

Third, this strategy aims to be disruptive. It provides a roadmap for the County to fundamentally shift how it connects with, and provides services to, the people of the County it serves. It gives the County workforce the tools needed to carry out their mission of delivering services to all residents and businesses. It creates a space for County residents and businesses to become partners in building a better participatory government.

Finally, the County's digital government program will progress according to the available resources, operational priorities, and environmental factors listed herein. This will require continual adaptation of this strategy and its activities and milestones.

References

1. Montgomery County Government, Maryland, mission statement may be found here: http://montgomerycountymd.gov/government/missionStatement.html.
2. Montgomery County's departments and services may be found here: http://www2.montgomerycountymd.gov/MCGAppPortal/Departments.aspx.
3. A list of Montgomery County's awards is found at: http://montgomerycountymd.gov/award.html; a list of awards received by the County's Department of Technology Services is found at: http://montgomerycountymd.gov/dts/awards.html.
4. Montgomery County Government, Maryland Open Government Bill 23-12 at: http://www6.montgomerycountymd.gov/content/council/pdf/agenda/cm/2012/121029/20121029_GO2.pdf.
5. Information about Montgomery County Council members and actions can be found at: http://www6.montgomerycountymd.gov/csltmpl.asp?url=/content/council/index.asp.
6. The openMontgomery press release is found at: http://www6.montgomerycountymd/apps/news/press/pr_list.asp.
7. The U.S. Federal government's open government programs are found at: http://www.whitehouse.gov/open.
8. The State of Maryland's Governor's remarks about open government can be found at: http://www.governor.maryland.gov/stream.asp.
9. Montgomery County Government, Maryland, Enterprise Technology Strategic Plan is at: http://www.montgomerycountymd.gov/dts/stratplan.html.
10. Andrea Di Maio, *How the Nexus of Forces will Impact Government*, Gartner Research, April 23, 2012, ID: G00231076.
11. The County's MC311 customer relationship management program is at: http://www3.montgomerycountymd.gov/311/Home.aspx.
12. The County's CountyStat performance management program is at: http://montgomerycountymd.gov/countystat/.
13. The County's external agencies represented on the Interagency Technology Policy and Coordinating Committee (ITPCC) are listed here:
    Montgomery College: http://www.montgomerycollege.edu
    Montgomery County Public Schools: http://www.montgomeryschoolsmd.org
    Montgomery County Revenue Authority: http://www.mcra-md.com
    Maryland-National Capital Parks and Planning Commission: http://www.mncppc.org
    Washington Suburban Sanitary Commission: http://www.wsscwater.com
    Housing Opportunities Commission of Montgomery County: http://www.hocmc.org
14. FiberNet – Montgomery County Government Enterprise Architecture Technical Architecture, Section 3.12 http://www.montgomerycountymd.gov/dts/resources/files/technicalarchitecture.pdf.
15. Inter-County Broadband Network (ICBN) - http://onemaryland-icbn.org/.
16. Nation Capital Region Network (NCRNet) - http://www.ncrnet.us/.
17. The Sunlight Foundation: https://public.resource.org/8_principles.html.
18. Alan R. Shark and Susan Cable, Civic Media in Action – Emerging Trends & Practices, Public Technology Institute, Alexandria, VA, 2011
19. Maryland Public Information Act (MPIA)- http://www.oag.state.md.us/Opengov/pia.htm.
20. NIST's National Cybersecurity Center of Excellence (NCCoE) - http://csrc.nist.gov/nccoe/.
21. The National Association of Counties can be found at: http://www.naco.org

Appendix A – Open Data Principles

Open Data Principle	Insufficient execution	Substandard execution	Satisfactory execution	Good execution	Great execution
Complete	selectively disclosed portions, complete scope of data unknown		bare-bones Excel spreadsheet	Source material provided with formulas for derivative data	Source Material Provided with Metadata, Aggregate data provided with formulas for their creation, data documentation available.
Primary	summary of aggregate statistics	Aggregate statistics	bare-bones Excel spreadsheet	data w/ collection methods documented	data with collection methods documented, source documents provided
Timely	Information released only after it has become inert or irrelevant. e.g. released one year after collection	released one month after collection	released one week after collection	released one day after collection	Information disclosed as it is collected. Given control over collection, info also collected at most effective frequent interval.
Accessible	Paper	FOIA-provided; behind search forms	data format supports analysis and reuse	Available through bulk access protocols such as FTP and Rsync with sufficient bandwidth to allow demand to be met, as well as available through a well-documented API with good performance.	Available through bulk access protocols with sufficient bandwidth and API functionality, alongside links and pointers to outside sources.
Machine Processable	Paper	PDF, Scanned Images	.csv, tab delimited data	Documented API coupled with .csv, tab delimited data	json or XML data dumps, well documented coupled with a well-documented API
Non Discriminatory	In-person visit Necessary to View Data, Data released selectively to specific parties	Registration required to view data		No registration required to view or download data	
Non-proprietary	Undocumented, proprietary format.	Fairly well-known proprietary format, such as Microsoft Access.	Format based on an open standard but with limited independent implementations. For example PDF, Semantic Web.	Format based on Open Standard with multiple *different* implementations, for instance, CSV.	Format based on an open standard with multiple, independent implementations that use the format. For example: HTML, XML, JSON.
License Free	Pay-for-use, or most restrictive TOS or EULA, with possibly unlawful restrictions	Use with terms-of-service, citation requirements, non-commercial-use requirements	No license specified. Terms of use as given in law (e.g. FEC data).	Display of legislative terms of use in clear fashion alongside data	Clearly labeled public domain, work of the government.
Permanent	Subject to indiscriminate or malicious deletion. no guarantee of permanence, information fully open to manipulation and removal. Non-Digital	Current data available but no archive. (E.g., a webcast stream but no file is an example)	Archived for the term of the current Administration	Plan in place for indefinite archival	strong archival standards, frequent archiving, versioning, archives available on web