

# **Smart NeighborhoodsMBC**

## **Georgia Smart Communities Challenge 2019**

### Proposal Government Lead

Macon-Bibb County, GA

A Georgia Consolidated Government Community

### In Collaboration With

Bibb County School District

Macon Transit Authority

Mercer University

Middle Ga. State University

Central Ga. Technical College

Wesleyan College

Macon-Bibb County Urban Development Authority

Downtown Business Improvement District

Eisenhower Business Improvement District

### Point of Contact

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## 1 Project Narrative

### 1.1 Vision

Macon-Bibb County is in Middle Georgia, approximately 70 miles south of Atlanta and 150 miles northwest of Savannah. Mostly urban in nature, Macon-Bibb County encompasses 255 square miles and has a population of 155,524 making it the 13th largest county in the State. The county is home to nine institutions of higher education and three major hospitals that provide world-class care, including the area's only Level One trauma center. Macon-Bibb County is also the cultural center for the Middle Georgia region with the Museum of Arts and Sciences, Tubman African American Museum, Macon Symphony Orchestra, and Georgia Sports Hall of Fame.

In addition, Macon-Bibb County has a strong presence of historic resources, such as the Ocmulgee National Monument, Fort Hawkins, the Ocmulgee River, 10 historic districts and numerous structures listed on the National Register of Historic Places. The county is also home to six annual festivals and a multitude of events, including the Macon Cherry Blossom Festival, Ocmulgee Indian Festival, Tubman Pan African Festival, Mid-Summer Macon, Arrowhead Indian Festival, and many others.

The city and county once relied on the textile industry for its economic foundation. These industries have not only left the area, but for the most part have left the country. This shift resulted in the county scrambling to replace lost jobs, maintain current jobs, and create new opportunities for residents. Because of these economic hardships, the county now has a lower income level and higher crime rates than both the State of Georgia and national averages. In 2013, the per capita income for the county was \$20,982, roughly 18% less than Georgia's per capita income of \$25,182 and 29 % less than the U.S.'s per capita income of \$28,155. As Georgia has a poverty rate of 18.2%, Macon-Bibb County's greatly exceeds the state's, with a poverty rate of 24.9%. Like many urban centers, the area is plagued with depressed incomes and high poverty rates, thus unemployment, crime, and most of all, blight continues to expand.

Macon-Bibb faces additional obstacles that are not as readily apparent. These include stigmas related to disinvestment and abandonment in our disadvantaged communities, indifference, pessimism and lack of hope in these neighborhoods. To address these challenges at every level, Macon-Bibb County wants to become a Smart Community. A Smart Community that can engage all its residents and provide equitable access to services, transportation, jobs, education and healthcare.

Macon-Bibb has several existing mobile applications and browser based **Smart Solutions** including our 311 application (See, Click, Fix) our open-data portal geo-hub (MaconInsights), and our online employment applicant system (Neogov). These services are currently available to web and mobile users and since the implementation of Neogov we have seen a measured increase in qualified applicants for open positions, extending this reach into our neighborhoods with high-unemployment rates, but limited to no web access we expect to further increase our qualified applicant pool. See, Click, Fix is already extremely successful, but again, increasing web and mobile access to this Smart Solution will provide after-hours access to report the need for city services in neighborhoods that have previously relied on land-line phone access. Finally, the demand for targeted applications on our MaconInsights geo-hub such as 'Find Your Elected Official', 'Find Your Polling Place', 'Mosquito Spraying Schedule', and our most popular application 'Solid Waste Collection Services' grows each month. Expanding the reach of these

useful applications into target neighborhoods will have an immediate impact on citizen engagement, health issues related to waste and pests, blight and community pride.

Even as we develop and acquire Smart Solutions in our efforts to become a Smart Community, we must remain mindful that many of our Smartest Solutions are still out of reach for a large number of our economically disadvantaged neighbors who do not have access to highspeed internet or devices that would ordinarily place these solutions at the fingertips of our citizens. **SmartNeighborhoodsMBC** promotes equity in our economically stressed neighborhoods by placing **Smart Kiosks** in strategic locations. These will essentially be huge smartphones that will provide critical information to promote community empowerment and improve access to information and services in underserved areas. They will provide real-time usage data to design on-demand services such as mobile healthcare, transportations services, blight, litter and crime reporting to give equal voice to residents in these areas.

**SmartNeighborhoodsMBC brings City Hall to Neighborhoods.** The initial intent is to place Smart Kiosks in strategic locations such as:

- Community Centers
- Recreation Centers
- Libraries
- Public Buildings
- High Traffic Pedestrian Areas

By partnering with our local transit authority, school district, institutions of higher learning and neighborhood improvement districts, we can effectively reach our citizens where they work, learn and play to give them stronger access and engagement with their local government departments.

Touchscreens or tablets provide access to key departmental applications and information tailored to the location or neighborhood, **Business Intelligence** on economic development, crime analysis, 311 reporting, blight efforts, community cleanup initiatives, vacant properties for sale and city services and can be accessed locally instead of travelling to city hall. **SmartNeighborhoodsMBC** promotes equitable access to technology in underserved and at-risk neighborhoods. Citizens can directly apply for jobs within local government and other community organizations by using **SmartNeighborhoodsMBC**. Citizens can find information on elections, public health, safety and services like Mosquito Spraying and Solid Waste pickup schedules. Additional desirable services these kiosks can provide include:

- Provide secure highspeed Wi-Fi access in the immediate range of the kiosk
- Free phone calls
- Free Device Charging
- Free Interactive Tablet for local search, wayfinding, civic services and commercial apps
- A Human touchpoint and Home for digital community services
- Provide health screenings and referrals through use of AI and connection to community health services and clinics
- Large displays for advertising, community messaging and real-time hyperlocal information
- Data analysis from on-board Smart sensors

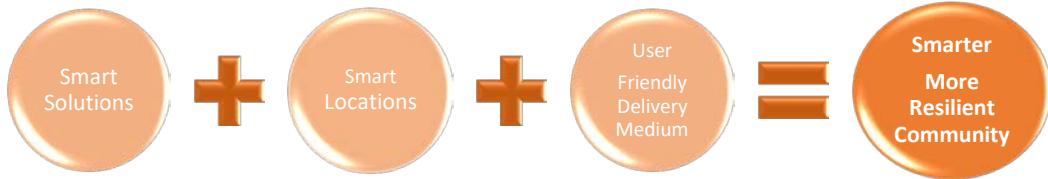
A public-private partnership with a tech startup would create an ideal environment for developing the medium to deliver services to our residents.

## Proposal: SmartNeighborhoodsMBC

As the project matures and progresses, machine learning and AI integration may answer questions and connect citizens and visitors with services and departments. This data may also be used to drive behavior, sustainability and resilient city initiatives.

These Smart Kiosks will be available free to users and taxpayers through hyperlocal advertising on displays and commercial sponsorships. Advertising could also result in generating revenue for Macon-Bibb to fund public services and cover the cost of equipment, installing, maintaining and upgrading **SmartNeighborhoodsMBC**.

## 1.2 Framework



**Figure 1. SmartNeighborhoodsMBC allows us to do the most good where it is needed most.**

Macon-Bibb has several Smart Solutions currently in place with many more planned to achieve its goals of citizen engagement, transparency and good government. Unfortunately, many citizens don't have access to highspeed internet or devices that allow them to utilize these Smart Solutions.

By placing Smart Kiosks at Smart Locations, Macon-Bibb will bridge the gap between the haves and have nots in our communities and effectively bring city hall into our neighborhoods providing equitable access to city services and opportunities.

Our Smart Kiosks are the equivalent of huge Smart Phones providing higher quality city information and up to date public communication hubs in a User-friendly delivery medium.

Equitable access to opportunities and information in a useful format creates a thriving, Smarter More Reliant Community.

Macon-Bibb's Smart Community initiative collectively known as **SmarterTogetherMBC** encourages and is embedded in our five governing principles and strategic focus areas:

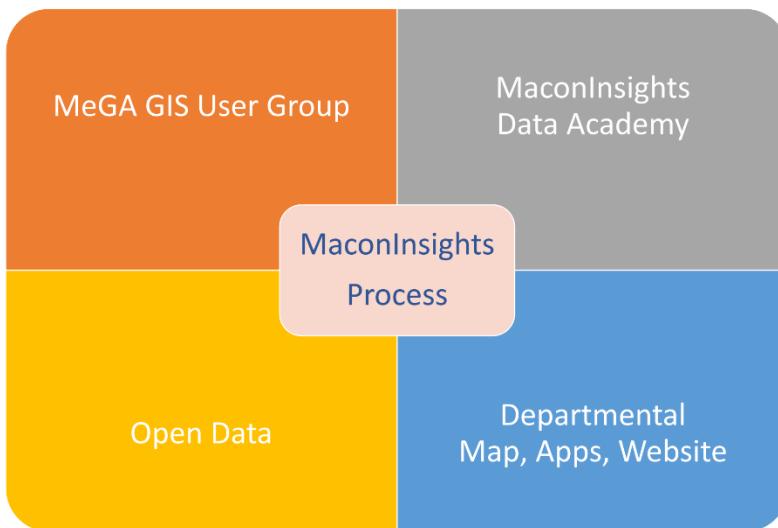
1. Economic & Community Development
2. Safe Neighborhoods & Communities
3. Effective Government & Governance
4. Infrastructure Improvement
5. Quality of Life

**SmarterTogetherMBC** combines our enterprise GIS and our enterprise applications divisions into an Innovation Team that uses all Macon-Bibb technology and data assets to provide Smart Community Initiatives to Macon-Bibb departments and residents. Examples include web and mobile GIS applications to find information on elections, parks, public safety, solid waste, traffic, public services and health services.

**SmartNeighborhoodsMBC** as part of **SmarterTogetherMBC** offers support for each of our governing principles.

**SmarterTogetherMBC** organizes its efforts among team members, community partners, other government agencies, citizen groups and engaged individuals and seeks to grow this organization over time.

**SmarterTogetherMBC** currently has a strong program in [MaconInsights](#) which is Macon Bibb's central location for open-data, citizen engagement, operations dashboards and interactive web mapping applications. **MaconInsights also sponsors a citizen Data Academy** which is already open to team members, community partners, other government agencies, citizen groups and engaged individuals from throughout the middle Georgia region. The MaconInsights program provides the long-term sustainability for **SmarterTogetherMBC** and **SmartNeighborhoodsMBC**.



Kiosks and acquisition of a working prototype for testing.

Phase 3- Content Planning & Development and configuration for the Smart Kiosk platform in addition to project specific business intelligence and data analysis training for MBIT staff.

Phase 4- Testing for planned solution and development of key performance indicators (KPIs) that will gauge the effectiveness of **SmartNeighborhoodsMBC** efforts. Some of these KPI's would likely include:

- Number of endpoints
- Application use by endpoint
- Total Usage time by endpoint
- Incidents by endpoint

End-goals for **SmartNeighborhoodsMBC** include:

- Providing useful content for the Smart Kiosks based on defined community needs by location
- Adaptability of the system to meet various needs based on location
- Providing equitable access to real-time usage data to design on-demand services such as mobile healthcare, transportations services, blight, litter and crime reporting.

Year-one of the **SmartNeighborhoodsMBC** project is divided into 4-phases.

Phase 1- Mapping & Research to gain stakeholder feedback and support to determine Smart Locations for the Smart Kiosks.

Phase 2- Research and specification development for the Smart Kiosk hardware, installation and support. This includes planning and securing a public-private partnership with a capable provider for the Smart

### 1.3 Plan

During the first year of this project The Macon-Bibb County team will coordinate on several fronts.

First, The Macon-Bibb County team works with our partner organizations and researcher to determine the locations that will yield the highest results to our target communities. We will use Smart Mapping and GIS site-selection to evaluate census block groups in opportunity zones that are vetted by crime rate, poverty rate, family size, transportation access, levels of education and employment. The result of this phase of the project grows a **Smart Network** by using these criteria and technology to define target neighborhoods. Having mapped and selected desired sites, we will establish agreements to locate our kiosks in high-traffic, high-yield locations. As these locations are figuratively and literally secured, this shapes the strategic bridge to equity, resilience and sustainability.

Next, the technical requirements of the physical kiosk are researched, and specifications are developed to allow for delivery of our Smart Solutions. Once a system is defined, the search for a partner vendor can begin.

Existing browser based Smart Solutions, like our 311 application (See, Click, Fix) our open-data portal geo-hub (MaconInsights), and our web-based employment applicant system (Neogov) are the easiest and most effective solutions to provide ready content to our kiosks. As new products and applications are developed, we will use IOT sensors, machine learning and AI to customize content that is streamlined to serve residents the content most desired at a location.

Input from our public safety community will dictate where investments in IOT sensors have the greatest affect in our neighborhoods.

The Macon-Bibb County team will utilize the grant funding from the **Georgia Smart Communities Challenge** and the resources of our research and project partners to create a master plan and design for this project, the objectives of this plan will include:

- Providing secure highspeed Wi-Fi access in the immediate range of the kiosk
- Free phone calls
- Free Device Charging
- Free Interactive Tablet for local search, wayfinding, civic services and commercial apps
- A Human touchpoint and Home for digital community services
- Provide health screenings and referrals through use of AI and connection to community health services and clinics
- Large displays for advertising, community messaging and real-time hyperlocal information
- Data analysis from on-board Smart sensors

### 1.4 Research

We will develop a systematic approach that combines data-driven analytics and insights from stakeholder engagement to inform location intelligence for the placement of kiosks, analyze usage

patterns of the kiosks, as well as the development and tracking of smart cities benchmarking metrics used to quantify the long-term effectiveness of these smart technologies. The following analytical components will be co-developed with our Ga Tech research partner:

Location Intelligence for kiosk placement: We propose to utilize a combination of spatial and statistical analytics to develop a potential “smart location” index to optimize the placement of kiosks and maximize benefit from usage. This index will use a combination of publicly available datasets such as census (socioeconomic, demographic) data as well as other types of data that might serve as proxies for pedestrian and vehicular traffic and other indicators of spatial and temporal usage/movement patterns (for example, usage data from public libraries). We will also adopt other methods such as those used by the retail analytics community to strengthen our analysis. This will include a comprehensive inventory of data sources available and accessible via local government, including economic activity, property tax records, etc., to find latent indicators of culturally and economically valuable sites in the community. We will validate/ground-truth this index with input from the community and project stakeholders.

Stakeholder engagement for kiosk programming and vendor selection: We will first create an inventory and review of existing smart kiosk models and their advantages/disadvantages. We will design a robust stakeholder engagement strategy to develop programming and other kiosk specifications that are responsive to community needs and preferences. This strategy will potentially include the use of intercept surveys at the “smart locations” identified in the index described above. University students can be trained in data collection techniques and assist in this effort. Other techniques that reduce sampling bias will also be explored, based on stakeholder feedback. We will also use existing community engagement opportunities already scheduled for other projects (comprehensive planning, transportation projects) as an extended platform to gather community perspectives and feedback. Collectively, this process will inform our selection of the smart kiosk vendor, the kiosk features, specifications and applications as well as their locations.

Analysis of usage data captured by the kiosks: We will work with the vendor to create a plan for acquiring and analyzing data captured by kiosk usage and kiosk sensors. Part of the plan will be to incorporate feedback from the data to continually improve smart community efforts. We will also develop a plan for sharing data insights with county agencies that might utilize this data to improve other public processes and services.

Development of evaluation plan: We will develop a plan to monitor short-term and long-term success of the project. Important/meaningful success metrics and key performance indicators (KPIs) that need to be tracked will be developed from the initial objectives of the project as well as with stakeholder engagement. Our evaluation plan will also be informed by other smart city benchmarking frameworks as well as program evaluation methods. A logic model that explains a theory of change will be developed. The logic model will typically describe pathways between project purpose, inputs, activities, outputs and effects. The evaluation plan will evaluate both process outcomes as well as impact outcomes. Typically, process outcomes evaluate short-term and procedural elements such as the quality of stakeholder engagement, ease of kiosk usage, utility of kiosk features and apps, etc. Impact outcomes involve measuring long-term changes such as improved equity, improved access to information, resources and services, etc. Designing a robust pre and post-intervention evaluation study will involve the potential recruitment of study participants who will be tracked over time and will continually provide feedback on their experiences using the kiosks and realized benefits. Appropriate human subjects protection procedures such as IRB review will be sought as necessary.

### **Georgia Tech Researcher**

Research Scientist, **Dr. Arthi Rao** at the Center for Quality Growth and Regional Development will commit 21% of her annual FTE or approximately 2.6 months to this project. She will serve as a Research Advisor to the Community for the length of this project. This will involve developing a systematic analytical framework for implementing the smart community project.

Dr. Rao's research interests focus on social/spatial analytics, equity and access. She uses methods including spatial clustering, data mining/classification techniques and hierarchical modeling in her research. She has integrated these methods to create decision-support tools for academic and industrial applications. Dr. Rao regularly collaborates with researchers at The Morehouse School of Medicine, Georgia Tech and the American Planning Association as a subject matter expert on healthy communities' research and geospatial methods. She has published in journals on the topics of Health Impact Assessment (HIA), sustainability, walkability analysis, regional planning, and therapeutic landscapes.

## 2 Execution Plan

### 2.1 Cost Plan

**SmartNeighborhoodsMBC** project costs are divided into **four** main categories, each supported by the specified funding source.

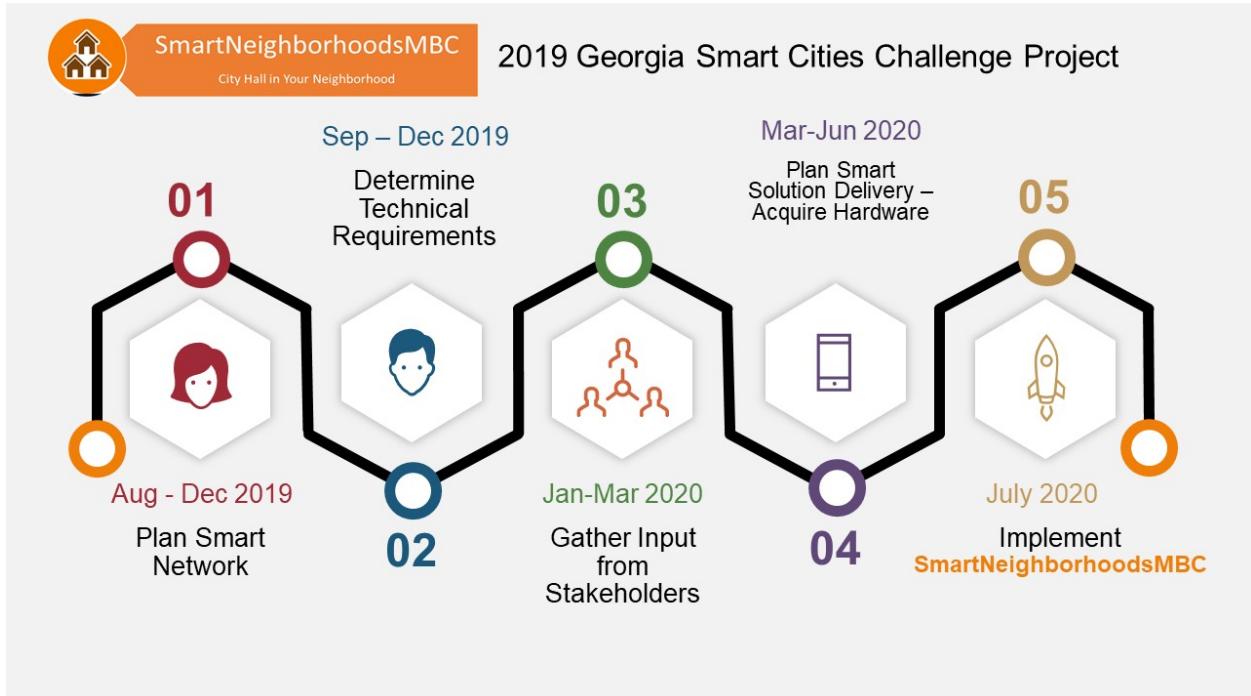
Month	Activity	Cost / Source
August 2019 – July 2020	Training MBIT Staff – BI, Data Analysis BI, Data Analysis Software Professional Services - Consulting	\$30,000 / Georgia Smart Communities Challenge Grant \$10,000 MBIT Budget
August 2019-July 2020	Research with Ga Tech Research Partner Research Scientist, <b>Dr. Arthi Rao</b> at the Center for Quality Growth and Regional Development	\$25,000/ Georgia Smart Communities Challenge Grant
August - December 2019	Public-Private Partnership for Kiosk hardware acquisition agreement Acquire Prototype KIOSK	\$20,000/ Georgia Smart Communities Challenge Grant
January-July 2020	Browser-based content development and configuration	\$40,000/MBIT Budget
		<b>\$125,000 – Project total</b>

The Macon-Bibb County team will use funds from the Macon-Bibb Information Technology General fund budget for the Browser-based content development and configuration phase. This will likely far exceed the \$40,000 shown. Macon-Bibb cash match of 20% up to \$10,000 will be used for BI, Data Analysis software acquisition. The mapping and research for developing criteria, determining target neighborhoods and hardware specification are funded from the winnings from the Georgia Smart Cities challenge for Georgia Tech partner research, training for MBIT staff, Professional consulting services as needed and acquisition of hardware/software are funded by the Georgia Smart Communities Challenge Grant.

## 2.2 Personnel Plan

Name	Role, time commitment	Relevant Experience
Mayor Robert Reichert	Project Sponsor, 15 hours	Mayor
Dr. Keith Moffett, County Manager	Point of Contact, 50 hours	County Manager
Brett Lavender, CIO	Department Head, 50 hours	CGCIO, Lean 6σ Green Belt
Dr. John Pattan	Project Manager, 12 months	Lean 6σ Green Belt
Dr. Arthi Rao	Georgia Tech Researcher, 2.6 months	Research Scientist, at the Center for Quality Growth and Regional Development
Jeff Griffin, GIS Manager	GIS, BI and Data Analysis, 12 months	Subject Matter Expert (SME)
Joe Nabhan, GIS Analyst	GIS, BI and Data Analysis, 12 months	GISP

## 2.3 Schedule



## 2.4 Collaboration

The Macon-Bibb County Smart Cities Challenge Team		
Organization or Individual	Role	Contribution
Macon-Bibb County	Proposal Lead	Project Management
Arthi Rao, <i>PhD, MS-GIST, MSLA</i> Research Scientist II	Researcher	Project Research
Bibb County School District	Consulting Partner	Advisory Stakeholder
Macon Transit Authority	Consulting Partner	Advisory Stakeholder
Mercer University	Consulting Partner	Advisory Stakeholder
Middle Georgia State University	Consulting Partner	Advisory Stakeholder
Central Georgia Technical College	Consulting Partner	Advisory Stakeholder
Eisenhower Business Improvement District	Planning & Project Assistance	Macon Action Plan
Macon-Bibb County Urban Development Authority	Planning & Project Coordination	Macon Action Plan
Downtown Business Improvement District	Planning & Project Assistance	Macon Action Plan

## Appendix A Letters of Support

**ROBERT A.B. REICHERT**  
MAYOR



OFFICE OF THE MAYOR

**Macon-Bibb County**

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April 30, 2019

To the Georgia Smart Community Challenge:

On behalf of Macon-Bibb County – both the consolidated government and the community – I whole heartedly support our newest effort to better help people better access services that can improve their lives. We want to install interactive kiosks and tablets around the community – from libraries to recreation centers to other public facilities and more – so people can apply for jobs, make service requests, learn about their government, and so much more. Essentially, we are taking government to the people through technology.

This is part of a much broader initiative we are beginning to undertake called “Smarter Together,” which will move us to be a Smart Community. It is rooted in our government’s motto, Forward Together, which recognizes that our community cannot move forward at the speed it needs if we are not together. With Smarter Together, we are recognizing that people are better served by giving them access to their government and community resources in easy-to-access ways. By bringing it all together and delivering it to them – as opposed to assuming they know how to get to it in a variety of offices, locations, and methods – we will create a smarter, more educated, cleaner, and healthier community through the use of technology and partnerships.

As the project lead, County Manager Dr. Keith Moffett fully recognizes the impact technology can have on improving government efficiencies and community access. With my full support, I see this creating years of improvement for the entire county.

Sincerely,

A handwritten signature in blue ink that reads "Robert A.B. Reichert".

Robert A.B. Reichert  
Mayor

cap

## Appendix B Documentation of Financial Support

Dr. Keith Moffett  
County Manager

Vacant  
Assistant County Manager



Julie Moore  
Assistant to the County Manager,  
Budget and Strategic Planning

Chris Floore  
Assistant to the County Manager,  
Public Affairs

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May 02, 2019

Georgia Smart Community Challenge:

On behalf of Macon-Bibb Government, I wish to express my support for the Macon-Bibb's application to the GA Smart Communities Challenge. Macon-Bibb is an excellent candidate for this innovative and forward-thinking program. The Macon-Bibb County team will use funds from the Macon-Bibb Information Technology General fund budget for the Browser-based content development and configuration phase this will include a cash match of 20% up to \$10,000. The mapping and research for developing criteria, determining target neighborhoods and hardware specification are funded from the winnings from the Georgia Smart Cities challenge.

Thank you,

A handwritten signature in black ink that reads "Keith Moffett".

Dr. Keith Moffett  
County Manager  
Macon-Bibb County