"SMART" Uptown: Columbus Consolidated Government

Georgia Smart Communities Challenge 2019

<u>Proposal Government Lead</u>

Columbus Consolidated Government

<u>In Collaboration With</u>

Uptown Columbus
Muscogee County School District
Businesses in Uptown Columbus Area

<u>Point of Contact</u>

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1 Project Narrative

1.1 Vision

The City of Columbus, GA comprises the entire County of Muscogee and is the first Consolidated Government in the State. Being consolidated is both a challenge and a benefit with one of the biggest challenges being in the urban downtown section of the city which dates back to 1828. Because Columbus, Georgia is a planned city, its existing public infrastructure in the Uptown district is unlikely to depreciate over time. The city intended from inception for extensive expansion of the area which allows for continued economic development. This includes, but is not limited to, tourist, local and governmental developments. The city is continuously improving this Uptown district by collaborating with the local universities, business partners, and philanthropic organizations.

The conditions and issues driving the need for "Smart IoT" begins with all of these entities working in collaboration while individually having a need and desire to promote safety and security, and intelligent transportation systems through a coalition of data sharing and the improvement of infrastructure thereof. The Uptown district is trying to become a bustling "community within a community" containing university student centers and high-end residences in the same area all while trying to attract local restaurants, business services, fine arts, industry, and recreation in the existing space. The Uptown district currently includes the RiverCenter fine arts venue, bike trails, Columbus State University Uptown campus, the Trade and Convention Center, the Columbus Civic Center, an ice-skating rink, the Coca-Cola Space and Science Center, the Chattahoochee RiverWalk, and the longest manmade Urban Whitewater course in the United States.

With so much going on in such a confined environment the need for IoT and its usefulness is paramount to the stakeholders. The "smart" technologies being proposed for this area includes, but may not be not limited, to free public wireless access, license plate readers and population movement sensors. These technologies will begin to address concerns regarding public safety and security, economic impacts of policy decisions including those related to intelligent transportation systems. The grant should help with the planning of suitable locations for IoT's devices and the governance of the data captured. Once awarded local funds will be used to implement the public Wi-Fi and various devices in the target district.

Once the area becomes "smart" public safety will be able to provide a higher level of service to include predictive policing and decreased overall Police, Fire and EMT response times in the area including in the river itself. Elected/Appointed Officials as well as community leaders will be able to use the data to perform economic impact studies therefore making timelier and better-informed policies regarding the community. Ideally, the Uptown model can be used as an example to public and private contractors for deployment across various other city centers across Columbus, GA. Ultimately our vision is that this "community within a community" will be able to be replicated throughout the city and the State of Georgia for the betterment of the citizens.

The Uptown model will provide a guideline for transitioning Columbus, GA from its current state to the desired future state. We would use this controlled environment as a beta release to roll "smart" technologies out as they are vetted to the whole community. The collaboration in construction of this grant has enticed the conversation of "smart cities" in the minds of the community leadership. As city and private officials meet to plan and discuss the "state of the city" more meaningful conversation will happen, trust will strengthen, and open dialogue will happen.

A written plan of action will be the result of the first-year efforts of the grant as well as the implementation of some "smart" technologies in the target area of the city. Utilizing engagement meetings while involving community investors in "smart" technology conversations addresses community needs and support over long-term deployment phases.

1.2   Framework

To develop an inclusive, data framework capable of achieving public safety and economic impact goals across Columbus, GA, the Columbus Consolidated Government shall work with community leaders to develop a plan of action for implementation of various IoT devices across the city. As we search to improve public safety resilience and study economic impact of policy decisions throughout the Uptown district, we must organize the community into a collective action of purchasing, installing and supporting public wireless access and IoT devices thereof.

When laying the ground work for the IoT devices, the Columbus Consolidated Government will meet with the Community Foundation, Uptown Columbus, Inc. and additional partners to persuade community business to support the attachment of various devices. Whereas, this initiative is necessary to create a data baseline while prototyping a section of the community that can be duplicated in other portions of the city. Deployment of public wireless access and two or more IoT devices shall be the milestone assisting in the persuasion of public and private contractor interest for deployment similar solutions across other city centers.

Relying on the existing fiber optics infrastructure, the Columbus Consolidated Government and Georgia Tech Advisors will work to identify suitable locations for wireless access points and IoT devices. Together, community leaders and businesses for the uptown Columbus area will develop a deployment schedule including phases and various milestones. Internal and external stakeholders shall ensure that the IoT implementation serves as a "prototype" for other areas of Columbus while supporting the interoperability with the city commitment to bike trails, the RiverWalk, South Commons and various other public spaces in the area. Overall, the project is likely to occur over four phases:

1. Communication of vision with local stakeholders.
2. Identify necessary devices and suitable locations.
3. Deploying identified devices.
4. Analyzing of initial data metrics.

1.3 Plan

During the first year we plan to establish buy-in and support from local organizations and institutions. Columbus Consolidated Government already has an MOU with Muscogee County School District to interconnect wireless infrastructure therefore we will build on that relationship. With the assistance of Georgia Tech Advisors, we will address every aspect of the grant and grant requirements to ensure objectivity as well as expertise. Topic for consultation include:

1. Communicate the vision with local leaders in order to receive community involvement.
2. Establish a team based on input from city leaders and the consultant to support the efforts of the grant and future "smart" projects.
3. Work with the local planning, engineering and uptown organizations to devise an infrastructure implementation plan.
4. Define the necessary data sets/samples that shall benefit economic development, public safety, community engagement and livability decisions.
5. Identify the assets and IoT devices and locations that will perform the data metric measurements.
6. Deploy no less than two IoT devices capable of gathering and relaying data.
7. Construct no less than two data models describing captured data.

These topics of consultation shall be executed in combination with the four phases of the framework as described below:

- Phase 1: Communication of vision with local stakeholders, shall include consultation topics 1, 2 and 3.

- Phase 2: Identify necessary devices and suitable locations, shall include consultation topics 4 and 5.

- Phase 3: Deploying identified devices, shall include consultation topic 5.

- Phase 4: Analyzing of initial data metrics shall include consultation topic 6.

Uptown is a focal point with infrastructure including a fiber optics network already in place. Studies of gathered data sets and establishment of necessary data sets shall allow local civic and private leaders to evaluate economic impacts of policy decisions. Over time, long-term datasets may allow for predictive analytics including topics of public safety and population ingress and egress. Planning of this infrastructure advances the community by prompting conversations of privacy, security and feasibility of a variety of "smart" projects. Throughout the various phases of this project, we will be addressing safety and security of the uptown district, the economic impact from local policy decisions, and evaluation of the need for intelligent transportation systems. This

plan lays the foundation for which we aim, long-term, to address other proposal topics including parking management and/or "smart" lighting.

1.4   Research

The required research component of the grant shall assist in the identification of suitable devices and locations, appropriate datasets and methods for data analytics. We are working with the following Georgia Tech Advisors:

- Dr. John E. Taylor, PhD, Director, Network Dynamics Lab.
- Dr. Neda Mohammadi, PhD, City Infrastructure Analytics Director, Network Dynamics Lab
- Dr. Russell J. Clark, PhD, Director, Mobile Technology & IoT Programs.

To identify a lead researcher, as a requirement of the grant, Dr. John E. Taylor will lead the research efforts. Through this collaboration, these advisors shall act as a consultative body to identify necessary devices, placement of these devices across the uptown district, and methods for data storage and analytics. With extensive past performance in IoT instrument deployment, data visualization and analytics, Dr. Taylor and Dr. Mohammadi bring invaluable expertise to this project. With extensive past performance in data storage, analytics and networking, Dr. Clark offers knowledgeable advice in the transformation of data to information. This is information will enlighten various public safety departments and local civic leaders for making even more informed policy decisions.

It is the intent of the Columbus Consolidated Government to research and develop a written comprehensive planning document for the city. Specifically, we aim to construct a planning document which includes public safety applications, economic impact studies, emergency and disaster response, broadband and network development, data-driven decision-making strategies, pedestrian and vehicle monitoring systems, real-time parking data application to include electric charge stations, centralized data repositories, online public engagement and crowdsourcing.
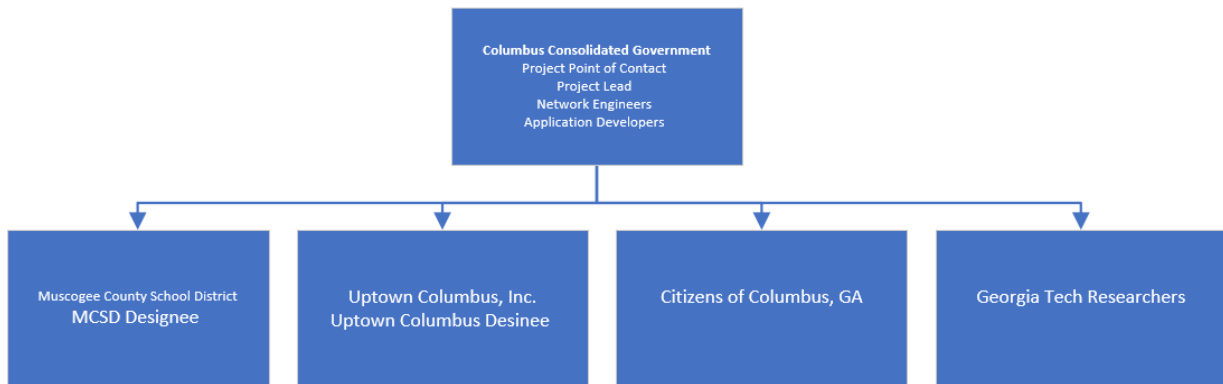
2   Execution Plan

2.1   Cost Plan

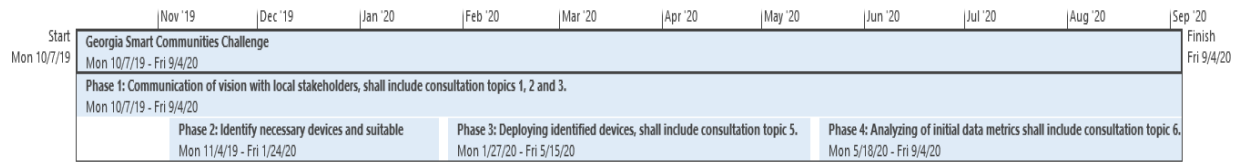| Personnel	Monthly Cost	Months	Totals
Work with the local planning, engineering and uptown organizations to plan the install of assets and Internet of Things devices.			
Network Engineer (1)	$ 4,369.00	9	$ 39,321.00
GIS Coordinator (1)	$ 4,369.00	9	$ 39,321.00
Technical Operations Manager (1)	$ 5,592.00	9	$ 50,328.00
		Total:	**$128,970.00**
Install assets and Internet of things devices			
Network Engineer (1)	$4,369.00	1	$ 4,369.00
		Total:	**$4,369.00**
Construction of a data portal, comprehensive of the data metrics			
Application Developer (1)	$ 3,767.00	4	$ 15,068.00
GIS Coordinator (1)	$ 4,369.00	4	$ 17,476.00
		Totals:	**$32,544.00**

2.2   Personnel Plan

The team will consist of representatives from the CCG, the MCSD, Uptown Columbus, Inc., citizen representative, and Georgia Tech Researchers. They will assist in determining the validity of the proposed research and may even help us determine the reliability factors we need to include in the proposed research. The team will be constructed as follows:

- Forrest Toelle
    CCG Primary Point of Contact, Est. 40 hours
- Scott Evans
    CCG Project Lead and GIS Coordinator (refer to 2.1 Cost Plan)
- Jeremy Miles
    CCG Representative and Technical Operations Manager (refer to 2.1 Cost Plan)
- Shane Walker
    CCG Representative and Application Developer, (refer to 2.1 Cost Plan)
- MCSD Designee
    Muscogee County School District, Est. 80 hours
- Ross Horner
    Uptown Columbus, Est. 80 hours
- GA Tech researchers, Est. 80 hours
- Citizen Stakeholders, Est. 40 hours

2.3   Schedule

Task	Start Date	End Date
Phase 1: Communication of vision with local stakeholders.	10/7/19	9/20/19
In collaboration with Georgia Tech Researchers, CCG will work diligently to hold a variety of public forms which include stakeholders from the Public Safety and Revenue divisions. We will collaborate with Uptown Columbus, Inc., which includes representation the entire target district.		
Phase 2: Identify necessary devices and suitable locations	11/4/19	1/24/19
Work with Georgia Tech researches to identify the most appropriate devices in order to collect the data to enhance the visions. Also identify and propose locations for such devices.		
Phase 3: Deploying identified devices	1/27/20	5/15/20
Ensure support from necessary organizations for locations of devices identified in Phase 2. Deploy devices identified in Phase 2 and begin data collection processes.		
Phase 4: Analyzing of initial data metrics	5/18/20	9/4/20
Construct necessary infographics, visualizations and databases to understand and convert captured data to information.		

2.4   Collaboration

Ultimately the success of this project is close collaboration between the Columbus Consolidated Government (CCG) and our partners. We envision the CCG, Uptown, Inc, the Muscogee County School District (MCSD), and our Georgia Tech research partners working in synergetic teams to achieve the vision outlined in this proposal. CCG currently has an MOU with MCSD and a letter of commitment from Uptown, Inc. to help achieve the proposal smart uptown district. To show CCG's commitment Council has approved $25,000.00 in the Information Technology budget for this grant.

CCG fully expects most the businesses on Broadway to participate with advice, use of private property (their business space), and funding, where appropriate, to enable the grant and associated projects to succeed. We have a close association with both MCSD, and Uptown Columbus, Inc. (the current CEO is a former CCG Director), so we do not envision any major conflicts especially with conflicts of interest since we all share in this common vision.

The team will consist of representation from CCG, MCSD, Uptown Columbus, Inc., citizen representative, and Georgia Tech researchers. They will assist in determining the validity of the proposed research and may even help us determine the reliability factors we need to include in the research proposed. While the grant monies will not be used for procurement of devices or installation of such, we do in fact believe during the first year Uptown, Inc. will be able to help procure and install the proposed IoT for the Broadway Uptown area.

Appendix A   Letters of Support

COLUMBUS CONSOLIDATED GOVERNMENT

Georgia's First Consolidated Government
Post Office Box 1340
Columbus, Georgia 31902-1340

B. H. "SKIP" HENDERSON III
Mayor

Telephone (706) 225-4712
Cell (706) 984-9012
FAX (706) 653-4970

April 24, 2019

Georgia Smart Communities Grant Committee,

It is with great pleasure that I write to express the Columbus Consolidated Government's commitment to support the Georgia Smart Communities Grant. If awarded, the Georgia Smart Communities Grant will allow the Columbus Consolidated Government to receive funding for planning of the implementation of public wireless access and IT devices.

The City of Columbus, Georgia being consolidated is both a challenge and a benefit with the biggest challenge being the urban downtown section of the· city which dates to 1828 – Uptown Columbus. The City is in the process of improving this "Uptown" area to become a bustling "community within a community" with university students, and high end residences in the same area; while trying to grow restaurants, business services, fine arts, industry, and recreation in the existing spaces. The "smart" technologies being proposed for this area will begin to address the public safety and public welfare and increase livability of this district.

We believe that once the "Uptown" area becomes "smart" the future visitor or resident will be able to check traffic flow, parking, and general "things to do" from a smart device. Public safety will be able to provide a higher level of service to include predictive policing and better overall Police, Fire and EMT response in the area including the Chattahoochee River. City Officials and community leaders will be able to use data to make timelier and better informed policies and decisions for the community.

The Mayor's Office and the City Manager's Office are committed to developing and providing a meaningful data portal to both internal and external stakeholders. On April 24, 2018, City Council approved a resolution also committed to the in-kind match and the funding by an affirmative vote of all Council Members present. In the resolution, they also committed to the expectation of this being a multi-year, multi-faceted project.

COLUMBUS CONSOLIDATED GOVERNMENT

B. H. "SKIP" HENDERSON III
Mayor

Georgia's First Consolidated Government
Post Office Box 1340
Columbus, Georgia 31902-1340

Telephone (706) 225-4712
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FAX (706) 653-4970

We thank you for your ongoing dedication to the innovation and improvement of Georgia communities and the lives of its citizens.

Sincerely,

B. H. "Skip" Henderson, III
Mayor

April 23, 2019

Forrest Toelle, Director
City of Columbus – IT Department
Government Center
100 10th Street
Columbus, GA 31901

Mr. Forrest Toelle,

Uptown Columbus Inc., and our businesses, are excited to support your efforts with obtaining a Georgia Smart Communities grant. We are committed to support this initiative in various way that include access to buildings and funding as it becomes available. We believe this project will add to the vibrancy of our downtown, and create a safer community that is poised to continue our economic growth across all areas.

As a Georgia Mainstreet GEM community, Uptown Columbus, is a the perfect model for this initiative that can be tested and used throughout the rest of Columbus. Connected and vibrant spaces abound in the Uptown area from our Riverwalk, to our new Whitewater Park these public spaces give citizens and visitors the opportunity to connect on many levels.

We are at your service and please let us know how we can assist.

Sincerely,

Ross Horner

President & CEO

Appendix B   Documentation of Financial Support

A RESOLUTION
NO. 093-19

A RESOLUTION AUTHORIZING THE MAYOR, CITY MANAGER OR DESIGNEE TO SUBMIT AN APPLICATION FOR, AND IF AWARDED, ACCEPT A 2019 GEORGIA SMART COMMUNITIES CHALLENGE GRANT IN THE AMOUNT OF $50,000, OR AS OTHERWISE AWARDED, WITH 100% LOCAL MATCH REQUIREMENT OF WHICH 50% WILL BE FULFILLED AS IN-KIND SERVICES FROM LOCAL PARTNERS AND THE COLUMBUS CONSOLIDATED GOVERNMENT AND 50% WILL BE A CASH MATCH COMING FROM THE INFORMATION TECHNOLOGY BUDGET AND TO AMEND THE MULTI-GOVERNMENTAL FUND BY THE AMOUNT OF THE AWARD.

WHEREAS, Communities are made up of government and non-government groups that want to work together towards a common, smart-community future; and,

WHEREAS, the Columbus Consolidated Government is eligible to receive $50,000 in funding with a 100% local match requirement of which 50% will be fulfilled as in-kind services from local partners and the Columbus Consolidated Government and 50% will be a cash match coming from the Information Technology budget; and,
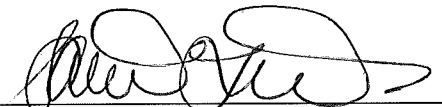
WHEREAS, the grant requires that the governing body be notified of the application; and,

NOW, THEREFORE, THE COUNCIL OF COLUMBUS, GEORGIA HEREBY RESOLVES;

That the Mayor, City Manager, or Designee is hereby authorized to submit an application and if awarded, accept the 2019 Georgia Smart Communities Challenge Grant in the amount of $50,000, or as otherwise awarded, with a 100% local match requirement of which 50% will be fulfilled as in-kind services from local partners and the Columbus Consolidated Government and 50% will be a cash match coming from the Information Technology budget and to amend the multigovernmental fund by the amount of the award.

Introduced at a regular meeting of the Council of Columbus, Georgia held the 9th day of April, 2019 and adopted at said meeting by the affirmative vote of __eight__ members of said Council.

Councilor Allen voting	____YES_____.
Councilor Barnes voting	_ABSENT FOR VOTE_.
Councilor Crabb voting	____YES_____.
Councilor Davis voting	____YES_____.
Councilor Garrett voting	____YES_____.
Councilor House voting	____YES_____.
Councilor Huff voting	____YES_____.
Councilor Thomas voting	____YES_____.
Councilor Turner Pugh voting	____YES_____.
Councilor Woodson voting	___ABSENT___.

_____
·Sandra T. Davis, Clerk of Council

_____
B.H. "Skip" Henderson, III, Mayor

Appendix C   Letters of Understanding from NGOs

A RESOLUTION
NO. 1 1 0 - 1 8

A RESOLUTION AUTHORIZING A MANAGEMENT AGREEMENT BETWEEN THE COLUMBUS CONSOLIDATED GOVERNMENT AND THE MUSCOGEE COUNTY SCHOOL DISTRICT REGARDING THE DEVELOPMENT, MANAGEMENT, OPERATION, AND SECURITY OF A CONNECTION BETWEEN DATA CENTER(S), OWNED BY CCG, AND DATA CENTER(S), OWNED BY MCSD IS OF MUTUAL BENEFIT TO THE CITIZENS OF COLUMBUS.

WHEREAS, the expected benefit of the interconnection is to enable each organization to store data and to include use of each organizations wireless infrastructure to allow connectivity to each system; and,
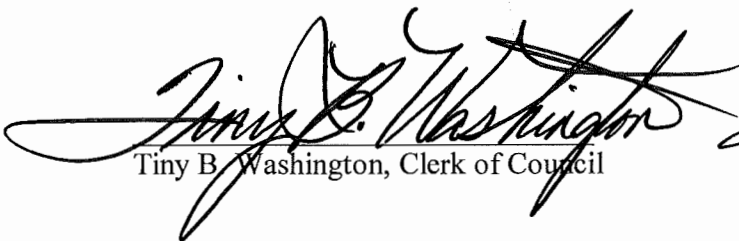
WHEREAS, this interconnect, if approved is of mutual benefit to CCG and MCSD as it will allow for DATA back-up, possible disaster recovery, and shared wireless.
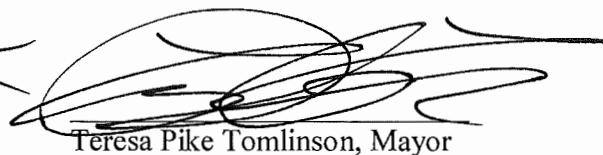
NOW, THEREFORE, THE COUNCIL OF COLUMBUS, GEORGIA HEREBY RESOLVES:

That the City Manager is hereby authorized to sign and establish a management agreement between The Columbus Consolidated Government (CCG) and The Muscogee County School District (MCSD) regarding the development, management, operation, and security of a connection between DATA Center(s), owned by CCG, and DATA Center(s), owned by MCSD and allow the connection to be implemented.

_____

Introduced at a regular meeting of the Council of Columbus, Georgia, held the 27th day of _March_ 2018, and adopted at said meeting by the affirmative vote of _eight_ members of said Council.

Councilor Allen voting   YES .
Councilor Baker voting   YES .
Councilor Barnes voting   YES .
Councilor Davis voting   ABSENT .
Councilor Garrett voting   YES .
Councilor Huff voting   YES .
Councilor Thomas voting   YES .
Councilor Turner Pugh voting   YES .
Councilor Woodson voting   YES .

Tiny B. Washington, Clerk of Council   Teresa Pike Tomlinson, Mayor