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# Broadband's Role in Revitalizing Main Street

## NTIA Webinar Series

*Dial in to listen to the webinar*

*Conference Line: 800-593-7190 Passcode: 984-4951#*

October 16, 2019

# Participants

## Presenters

- Michael W. Burns, Senior Advisor to the Regional Administrator, EPA Region 4/CUPP Program Manager
- Mona El Khafif, Associate Professor, UVA School of Architecture, RCN Co-Director MainStreet21
- Tho Nguyen, PhD, Co-Director MainStreet21, Senior Research Program Officer, University of Virginia
- Fletcher Kittredge, Chief Executive Officer, GWI

## Moderator

- Don Williams, PhD, Senior Specialist for Broadband Development Infrastructure, NTIA, BroadbandUSA

# Helpful Information

## Questions

- Please type questions and comments in the question box on the right hand side of the screen. Questions will be taken after the final presenter.

## Presentation

- The presentation along with a transcript and an audio recording will be available on the BroadbandUSA website within 7 days of this webinar under Events/Past Events.
- <https://broadbandusa.ntia.doc.gov/past-event>

## Technical Assistance

- Guides, products, publications, and other tools are available to assist you with the planning, funding and implementation of your broadband project.
- <https://broadbandusa.ntia.doc.gov>

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# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)



**Michael W. Burns**

**Senior Advisor to the Regional Administrator/ Director of CUPP Program  
Environmental Protection Agency (Region 4)**

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)

## HOW IT WORKS – COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM

- Communities are identified for support by federal agencies; colleges and universities; non profit organizations; or self identified, based on criteria (poor and/or underserved).
- Issues are identified by the CUPP Program in partnership with the community.
- Local university is identified that can assist the community via CUPP.
- Universities agree to which issues they will provide voluntary assistance and assign the students to assist in providing the technical assistance.
- Each participating school arranges for academic credits to be earned by these students for their efforts.
- The federal government (project manager) will coordinate technical assistance to the schools to assist them in helping communities as needed.

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)

## PROGRAM BENEFITS

- Creative, collaborative effort between poor and underserved communities, and local colleges and universities to provide consistent technical support at no cost to the communities; schools participate on a voluntary basis.
- Students gain valuable experiential learning opportunity that helps those who need help the most. In addition, it serves as a resume builder, and enhances obtaining job opportunities upon graduation.
- Underserved communities benefit from the investment of innovative technical assistance and gain a consistent source of technical assistance and planning.
- The presence of college students in poor communities serves as an inspirational model for children in those communities.
- Federal agencies gain the opportunity to expand the support provided to poor and underserved communities with no need for additional staff.

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)

## CURRENT STATUS

- 73 colleges onboard supporting 55 communities in 20 states.
- Program has completed or is scheduled to complete over 150 projects impacting the lives of over 2,702,412 people
- Value of work done in the communities from 2013 to 2018 is over \$33,360,000 with Return On Investment (ROI) of over 10 to 1
- Four federal agencies onboard to support program nationwide (EPA, DOI, USDA, and DOE (Energy); Department of Education considering similar agreement
- Two non-governmental partnerships that have supported the program projects at no cost - Community Engineering Corps and the American Geophysics Union

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)

- **BROADBAND INITIATIVE**

## Background & Overview

- The National Telecommunications and Information Administration's (NTIA) broadband programs and policymaking focus on expanding broadband Internet access and adoption in America to ensure that the Internet remains an engine for continued innovation and economic growth for all Americans. Under NTIA's BroadbandUSA Initiative, NTIA provides direct and indirect technical assistance and resources to rural communities to assist them in the planning, funding and implementation of broadband infrastructure and digital inclusion projects. To maximize the impact and utilization of BroadbandUSA resources, a collaboration with CUPP program was considered to be a great idea.

## "Train the Trainer" Concept

- NTIA can use its BroadbandUSA technical assistance staff to provide "train the trainer" education for CUPP college professors and students. In turn, students and professors can use this training to develop broadband community plans for their local communities. Professors can provide continuity to the effort, and each school can develop the plans for their local communities utilizing specific academic departments and resources. This will allow the number of communities helped to expand dramatically, with no significant requirement for an increase in the allocation of NTIA/BroadbandUSA staff or resources.



# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)

## Pilot Program

- Under this proposal, NTIA and EPA formed a collaborative partnership between BroadbandUSA and EPA's College Underserved Community Partnership Program (CUPP) to establish a "Train the Trainer" pilot program where BroadbandUSA trained academic staff/students on the broadband planning and in turn, the staff and students will provide direct educational training to community residents, stakeholders and organizations.
- Five academic areas (IT, Business, Education, Economic Development, Health) received the training from BroadbandUSA on how to develop broadband plans. They subsequently worked with local communities to develop and implement the plans. If this "train the trainer" concept and pilot program work, it could serve as a model and be replicated in other rural areas across the country.
- The plans are expected to be completed in December 2019.

## Proposed Benefits

- The proposed benefits of the pilot program would be as follows:
- (1) Provide unique multi-discipline experiential learning for university and college students and use the federally-funded work-study program to provide stipends;
- (2) Establish an effective interagency partnership between NTIA, EPA and the colleges to address broadband challenges of rural communities;
- (3) Exponentially expand BroadbandUSA's educational outreach, specifically targeting rural, underserved/unserved, poor and economically distressed/disadvantaged communities; and
- (4) Serve as a model for the effective and efficient use and execution of USDA Rural Development funds used to provide access to broadband in rural America.

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)



- NTIA, EPA, students and faculty from the University of West Alabama in training to develop broadband feasibility studies for the cities of Livingston and York

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)



Students from Tuskegee University working to get public input for bus stops for the alternate transportation project



Students from Florida International University working on food garden in Medley, FL

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM



- Students working with the IT Director at East Point, GA on cybersecurity issues
- “GSU’s students have been instrumental in updating and rewriting the city’s IT policies and procedures to meet the changing landscape of cybersecurity,” said Farhad Islam, IT Director for the city of East Point. “They focused on people, processes, and technologies to address IT security issues relevant to protecting the city’s key infrastructures. They worked as a team to develop a security training framework and performed risk and SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of existing systems and applications in order to identify vulnerabilities and make recommendations on fixes. They learned a great deal from this engagement and the city benefited immensely from their effort and service.”

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM



Georgia Tech students studying the Alabama River as part of a study on the erosion impact the river is having on the foundation of the Edmund Pettis Bridge.



Professor and student from Savannah State University working on design of multi-purpose municipal building for the city of Midway, GA. Building will house all city functions, and will include the use of solar panels and recycled materials to reduce cost to seventy percent of original cost.

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)

Pilot agricultural project being done by Tuskegee University in the city of Shorter, AL. Mayor Powell is driving the tractor, and the Dean of Tuskegee AG School is on her right. Pilot grew so many watermelons, once quota share was sold, city made thousands selling from roadside stands.



UNC Wilmington teaching the citizens of Navassa, NC about how contamination affects the natural environment. School developed natural resource projects on behalf of the city to compete for 12 million dollars worth of potential funding via the Superfund settlement.



# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM (CUPP)



- Students from Clemson University visiting the Alabama Black Belt. They were part of a four school collaboration (Clemson University, University of South Alabama, Tuskegee University, and Drexel University) that developed new concepts and designs to address poor sewage issues in the Alabama Black Belt, an issue that has led to poor health issues for decades. The students' best ideas will be used to develop a pilot project funded by USDA Rural Development. If the pilot works, the pilot will be used throughout the Black Belt of Alabama.

# COLLEGE/UNDERSERVED COMMUNITY PARTNERSHIP PROGRAM

**Thank you!**

Email: [Burns.Michael@epa.gov](mailto:Burns.Michael@epa.gov)

Or

Call: 404-562-8228



# MAINSTREET 21

**Polycentric Development toward the Vision of 21st Century Main Street in Virginia**

Mona El Khafif, Dr. techn., Co-Director MainStreet21, Assoc. Prof., University of Virginia, School of Architecture  
Tho Nguyen, PhD, Co-Director MainStreet21, Senior Research Program Officer, University of Virginia



## PROJECT GOALS MAINSTREET21

While progress has been made in defining overarching challenges and establishing collaborations to pursue new solutions in smart and connected communities (SCC), most significant effort and attention has been given to urban challenges. There has not yet been a focused effort to address issues faced by medium/small size, remote, and rural communities where barriers of access to information, resources, and services are much higher.

The MainStreet21 RCN consists of academic researchers, communities, industry, government, and non-profit partners to identify, develop, and deploy solutions that focus on polycentric development of Main Street communities.

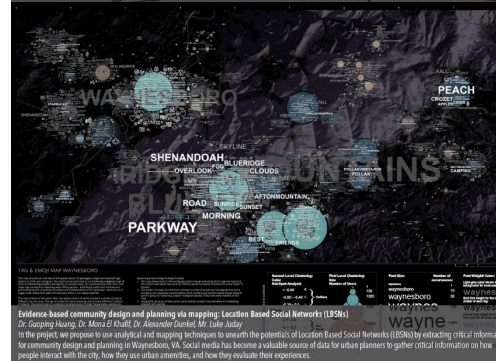
- Establishment of Partner Network and Communities in the Commonwealth of Virginia
- SCC Project support: evaluate proposed projects and activities, pipeline support from concept to implementation
- Community Engagement: Annual partner workshop and community workshop
- Education and training: web portal, visiting lectures, student involvement
- MainStreet 21 Playbook: Publication best practice and pipeline strategies



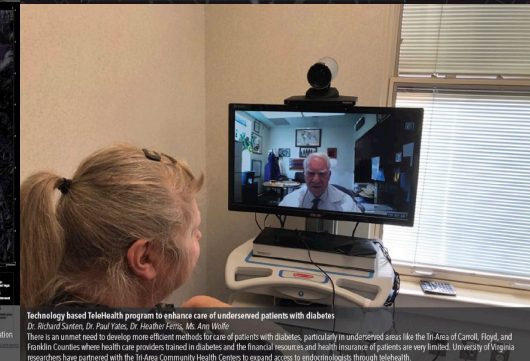
**Bicycle & Pedestrian Safety in Small-To-Medium Sized Communities With Virtual Reality**  
Dr. Dorota Cahn  
This research project will develop organizational partnerships with small to medium communities in Virginia to develop previously identified high risk locations for pedestrians and bicyclists in virtual reality, model those spaces with input from pedestrians and bicyclists, and collect preliminary data on perceived safety with and without modifications. The goal of this research is to develop safer (and more user friendly) infrastructure designs for vulnerable road users using a low cost technology.



**Community Centred Urban Sensing (CCUS) and II**  
Dr. Mona El Khafif, Dr. Andrew Mondulshew, and Mr. Eric Field  
Community Centred Urban Sensing (CCUS) is a project of the University of Virginia School of Architecture, collaborating with communities and government to better understand and address neighborhood issues using community based methods for collecting, analyzing, and acting on urban environmental data. CCUS collects data using low-cost environmental sensors and through public input on lighting issues through a website.



**Evidence-based community design and planning via mapping: Location Based Social Networks (LBSNs)**  
Dr. Gaoping Huang, Dr. Mona El Khafif, Dr. Alexander Dunbar, Mr. Luke Jansky  
In this project, we propose to use analytical and mapping techniques to assess the potentials of location based social networks (LBSNs) by extracting critical information for community design and planning in Waynesboro, VA. Social media has become a valuable source of data for urban planners to gather critical information on how people interact with the city, how they use urban amenities, and how they evaluate their experiences.



**Technology based TeleHealth program to enhance care of underserved patients with diabetes**  
Dr. Richard Santoro, Dr. Paul Yates, Dr. Heather Ferris, Ms. Ann Wolfe  
There is an unmet need to develop more efficient methods for care of patients with diabetes, particularly in underserved areas like the Tri-Area of Carroll, Floyd, and Franklin Counties where health care providers trained in diabetes and the financial resources and health insurance of patients are very limited. University of Virginia researchers have partnered with the Tri-Area Community Health Centers to expand access to endocrinologists through telehealth.

## RCN MAINSTREET 21 WEBSITE ENGAGEMENT TOOL

# WWW.MAINSTREET21.ORG

The collaboration between Architecture, Telehealth, Engineering, and the Weldon Cooper Center systematically defines 21st century challenges and solutions for “Main Street” communities.

We concentrate on three areas:  
**policy, design, and technology.**

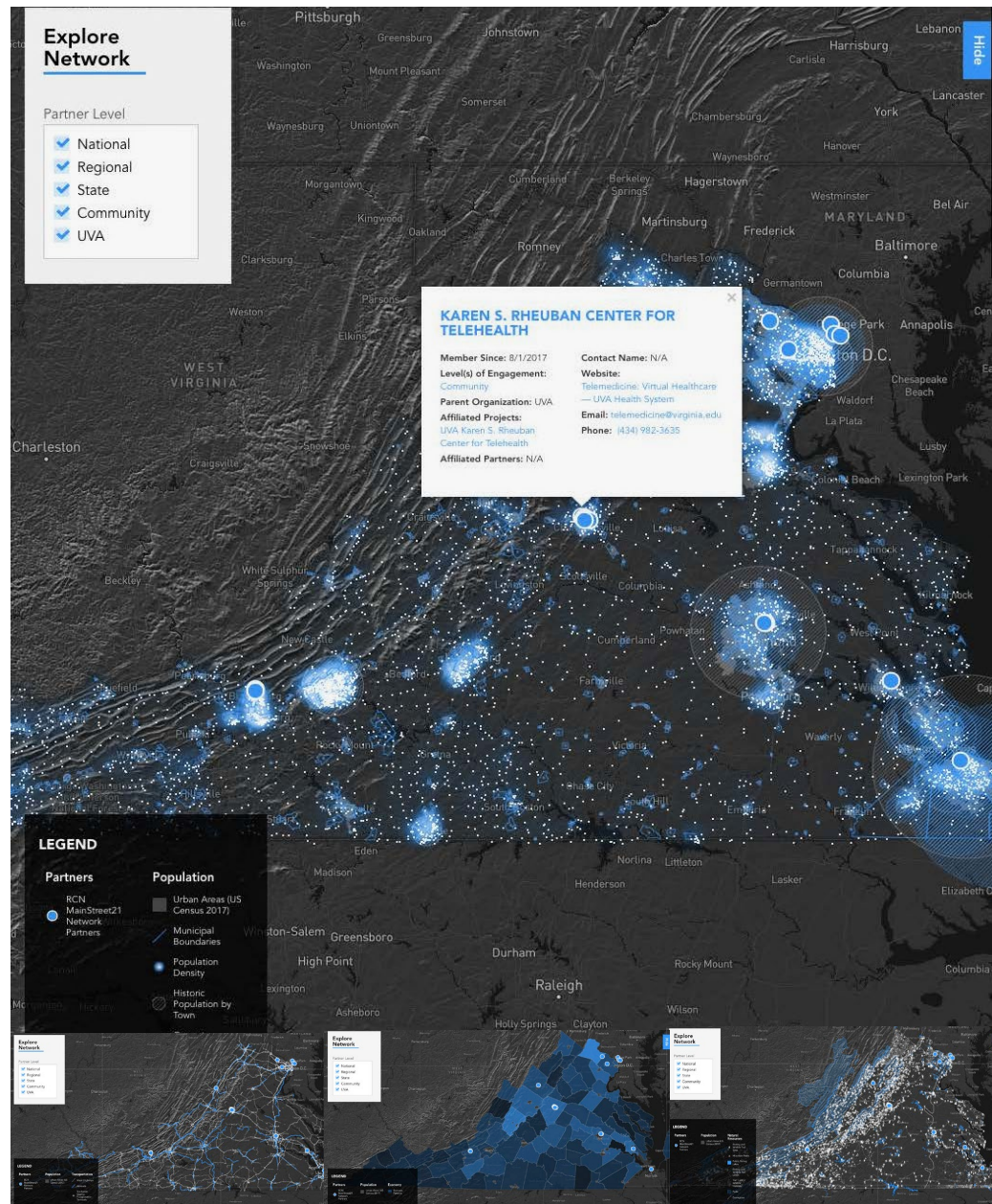
The RCN is based on seed projects that bring quantifiable improvements in the areas of health, mobility, education, environmental assets, or economic growth all supporting social well-being.

PI and co-PIs: Ila Berman, Karen Rheuben, Cia Qian, Donna Cheng

RCN Director: Mona El Khafif,  
NSF Ambassador: Tho Nguyen

Faculty A School: Tanya Denckla Cobb, Susanne Moomaw,  
Guoping Huang, Andrew Mondschein, Ali Fard, Barbara Brown  
Wilson

Student Research Assistants: Zihao Zhang, Taro Matsuno  
Webdesign: Andrea Hansen



# MAINSTREET21 CARTOGRAPHIES

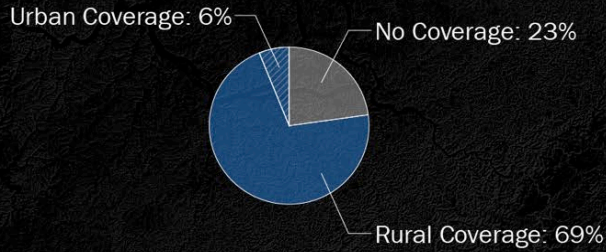
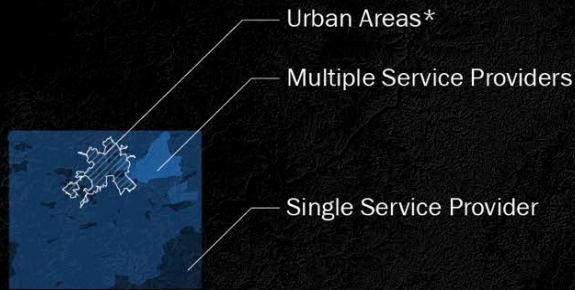


Image caption: Virginia fixed Broadband Coverage, 2017

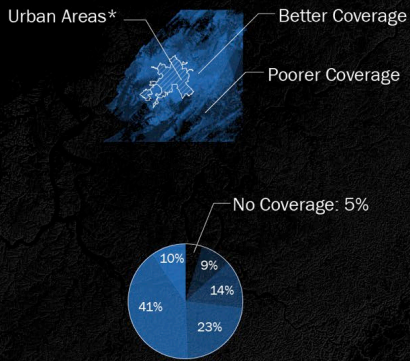


\* Current urban/rural boundaries are from the Census Bureau's MAF/TIGER geographic database until better data source is identified.

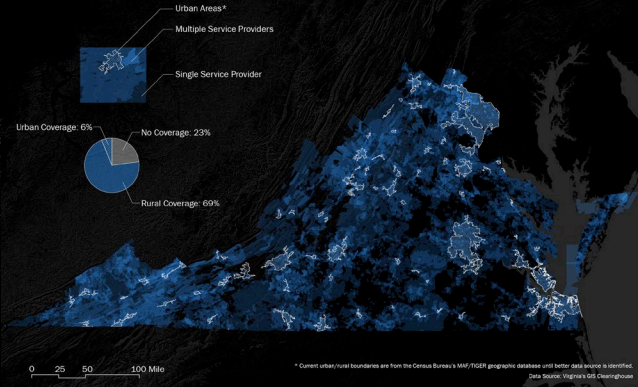
Data Source: Virginia's GIS Clearinghouse

MAINSTREET21 CARTOGRAPHIES

Virginia 4G(LTE) Coverage



Virginia Fixed Broadband Coverage



Virginia Population: 1960s - 2000s

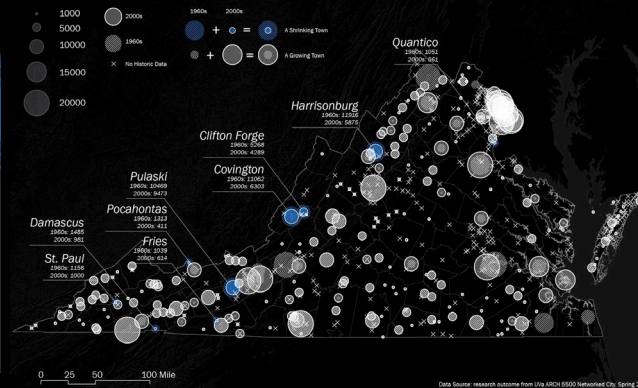


Image caption: Virginia Population Shrinkage, Broadband Coverage, LTE Coverage, 2017

# MAINSTREET21 CARTOGRAPHIES

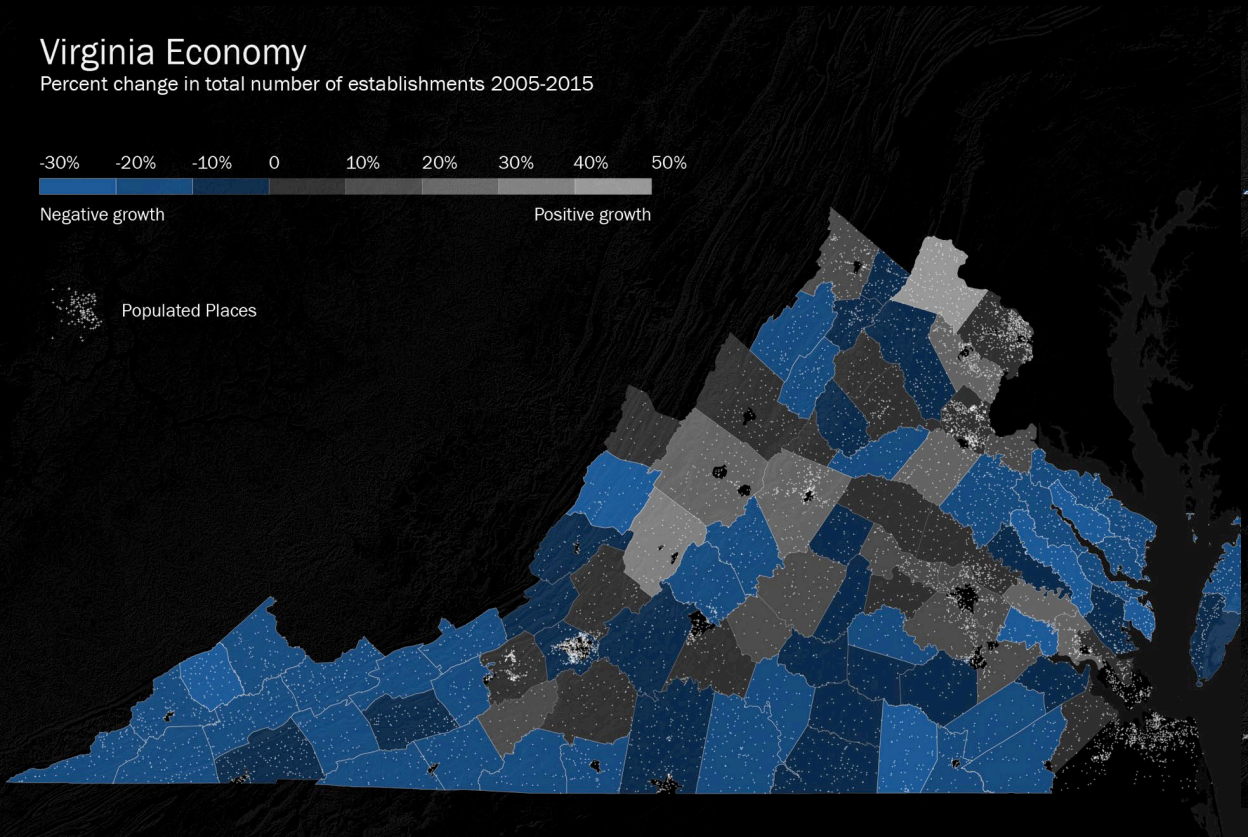
## Virginia Economy

Percent change in total number of establishments 2005-2015

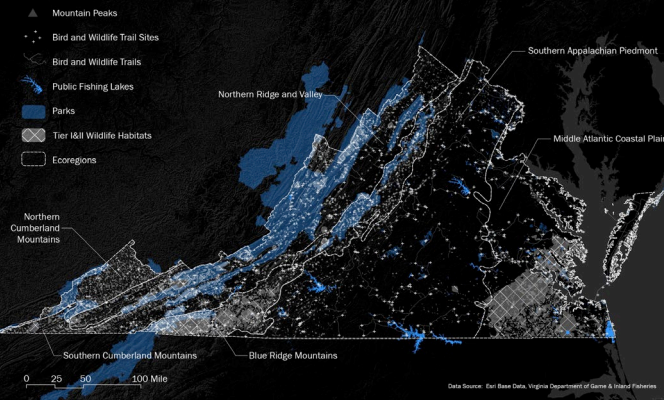


Negative growth Positive growth

Populated Places



## Natural Resources



## Cultural Resources

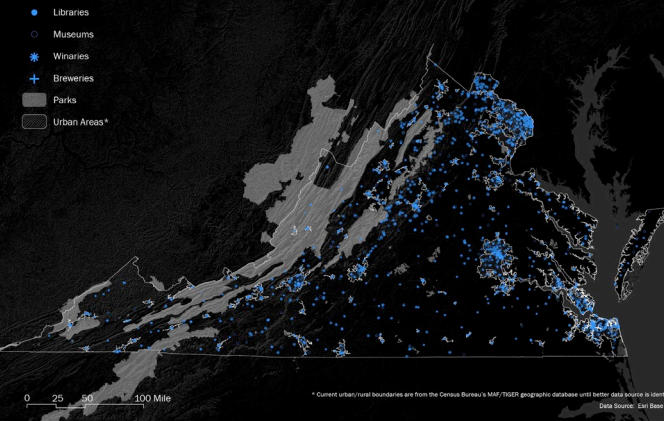


Image caption: Virginia Economy, Natural and Cultural Resources, 2017

RCN MAINSTREET 21

# MAINSTREET21

## PLAYBOOK 2018-19

PROTOTYPE

TYPLOGY OF SYSTEM

HEALTH

INFRASTRUCTURE + PEOPLE

| Place                                    | Provider                                   | User    |
|--|--|---------|
| hospital<br>clinic<br>ambulance<br>[...] | doctor<br>nurse<br>p.a.<br>e.m.t.<br>[...] | patient |

EDUCATION

|   |                                  |         |
|---|----------------------------------|---------|
| lower<br>middle<br>h.s.<br>vocational<br>university | phd<br>teacher<br>staff<br>[...] | student |
|---|----------------------------------|---------|

CULTURE

|   |   |   |
|---|---|---|
| museum<br>restaurant<br>gallery<br>rec. facility<br>[...] | artist<br>chef<br>curator<br>coach<br>[...] | resident<br>eater<br>patron<br>athlete<br>[...] |
|---|---|---|

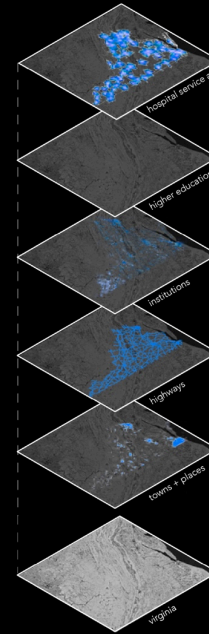
TRANSPORTATION

|   |  |                                  |
|---|--|----------------------------------|
| railroad<br>interstate<br>metro<br>bicycle<br>[...] | driver<br>bus<br>uber<br>amtrak<br>[...] | rider<br>passen-<br>ger<br>[...] |
|---|--|----------------------------------|

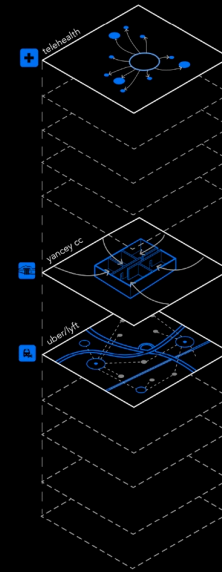
ECONOMY

|                                      |   |                            |
|--------------------------------------|---|----------------------------|
| factories<br>mills<br>farms<br>[...] | service<br>manu.<br>agricult.<br>prof.<br>[...] | demo-<br>graphics<br>[...] |
|--------------------------------------|---|----------------------------|

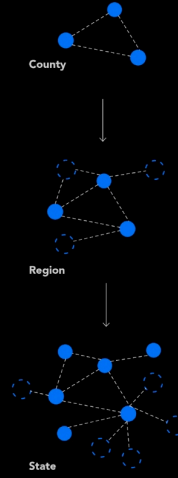
TERRITORIAL LAYERS



TYPLOGIES OF URBAN + RURAL ENVIRONMENTS



SCALABILITY OF SYSTEMS + TOOLS



BARC Connects

TEAM: INFRASTRUCTURE, CLINICAL STAFF, INTERNET

READ MORE

Hu+

TEAM: VIRTUAL SLEEPER, HOPKINSON, RURAL, EDUCATION

READ MORE

Open311

TEAM: COMMUNITY ENGAGEMENT, INFRASTRUCTURE, CITY SERVICES

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COPD Decompensation Project

TEAM: HEALTH PROFESSIONAL, AIR QUALITY, RESPIRATORY

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Streetsmix

TEAM: INFRASTRUCTURE, COMMUNITY ENGAGEMENT, PLANNING, TRANSPORTATION

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TrashTrack

TEAM: LOCATION TRACKING, ENVIRONMENT, WASTE, MAPPING AND VISUALIZATION

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LoRaWAN network

TEAM: NETWORKING, COMMUNITY, LONG DISTANCE, WIRELESS, SECURITY OF TRAFFIC

READ MORE

Baltimore Open Air

TEAM: ENVIRONMENT, HEALTH, AIR QUALITY MONITORING

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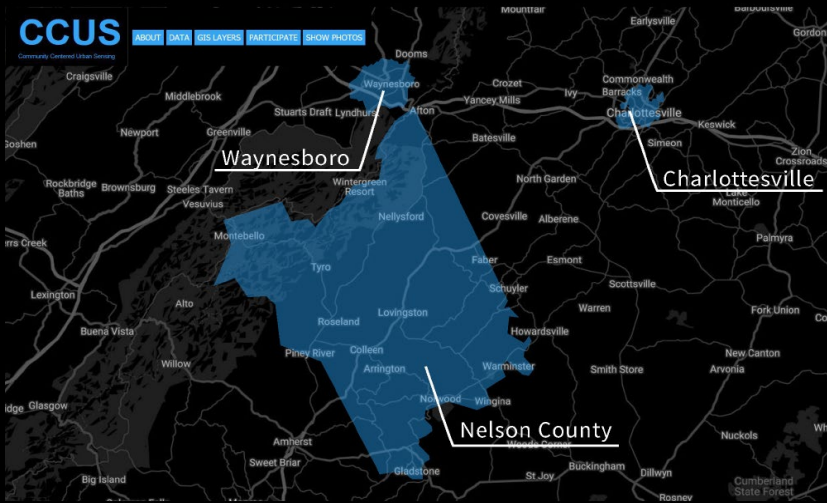


ENGINEERING

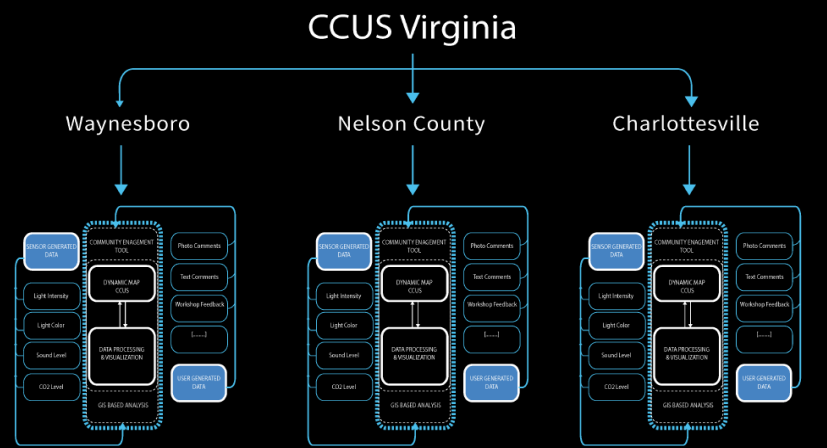


PI and co-PIs: Ila Berman, Karen Rheuben, Cia Qian, Donna Cheng  
 Director: Mona El Khafif, NSF Ambassador: Tho Nguyen, involved Faculty A School:  
 Tanya Denckla Cobb, Susanne Moomaw, Guoping Huang, Andrew Mondschein, Ali  
 Fard, Barbara Brown Wilson, Student Research Assistants: Zihao Zhang, Taro  
 Matsuno, Webdesign: Andrea Hansen

# COMMUNITY CENTERED URBAN SENSING



The screenshot shows the CCUS web application interface. At the top, there are navigation tabs: ABOUT, DATA, GIS LAYERS, PARTICIPATE, and SHOW PHOTOS. Below the navigation is a list of neighborhoods: 10th & Page, Barracks/Rugby, Belmont-Carlton, Filiville, Fry's Spring, Greenbrier, Jefferson Park Avenue, Johnson Village, Lewis Mountain, Locust Grove, Martha Jefferson, Meadows Neighborhood, North Downtown, Ridge Street, Starr Hill, and Venable. The main area is a map of Charlottesville with several photo overlays. One photo shows a street at night with a broken light, labeled "Street light broken". Another photo shows a street at night with a broken pedestrian light, labeled "Another broken pedestrian light". A third photo shows a street at night with a safe area, labeled "Safe and safe". There are also social media sharing icons (Facebook, Twitter, LinkedIn, Email) and a "Show Photos" button.



The screenshot shows the CCUS web application interface for Charlottesville. It features the same navigation tabs and neighborhood list as the previous screenshot. The map shows a large number of white data points (bubbles) of varying sizes, representing sensor data points across the city. The same navigation and neighborhood list are visible on the left side of the map.

Image caption: CCUS 1 and CCUS 2: Mona El Khafif, Andrew Mondschein, Zihao Zhang, Eric Field, Undergraduate RA Gabe Andrade



**WE ARE MARTINSVILLE**

# WAM

We Are Martinsville is a RCN pilot project in his first development stage.

The interdisciplinary design team works with the community of Martinsville to build a game that utilizes technology to allow players to learn about the city and to encourages exercise while simultaneously building new data about the city.

The collaboration between Telehealth, Architecture, and Engineering developed a beta version of the app-based game that serves as a creative placemaking strategy.

Like many other shrinking communities in Virginia Martinsville has a wide range of community assets. Here technology helps to integrate these resources as game elements to strengthen local identity, promote healthy living, and to imagine new futures for the city.

POIs: points of interest

POPs: points of places

POHs: points of health

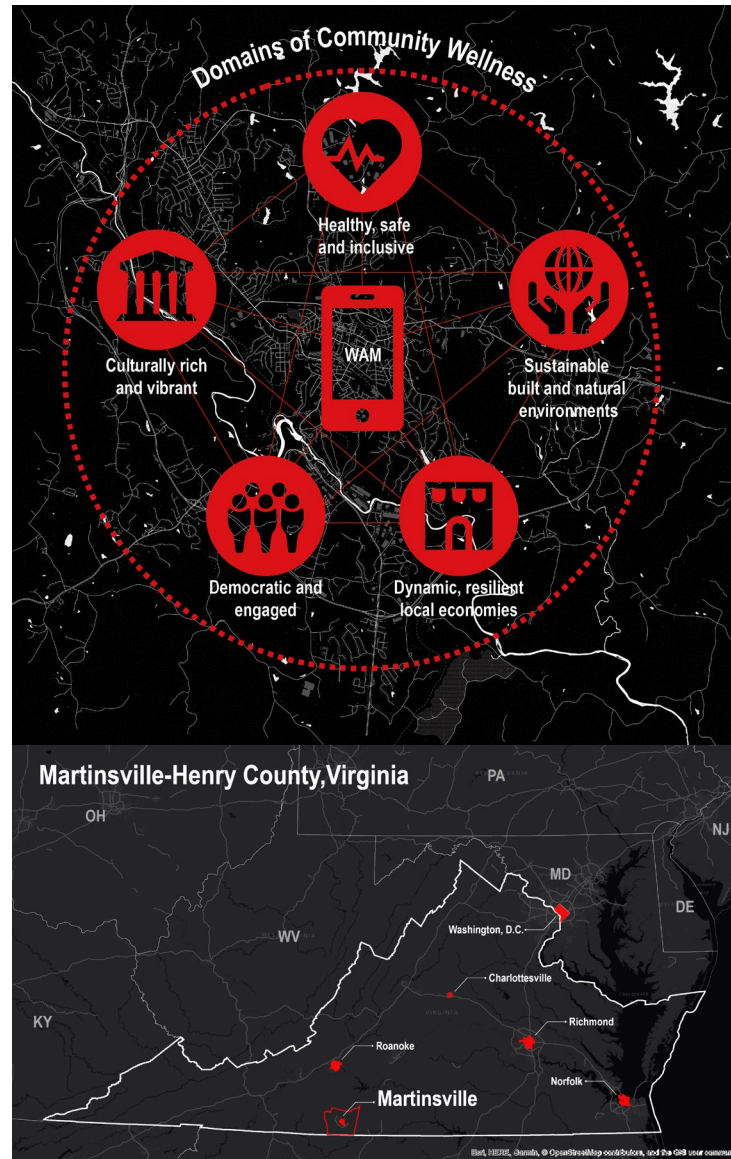


Image caption: Creative Place Making Strategy, M. El Khafif, E. Cleckly, M. Drivers, S. Zhang [RA]

# WE ARE MARTINSVILLE

**1607** Slavery was introduced in America

**1607** Jamestown, the first permanent English settlement in America was founded

**1619** William Byrd surveyed the Virginia North Carolina border region in 1722

**1676** Henry County Courthouse was established on June 27, 1791. Later changed to name to Martinsville in honor of General Joseph Martin - a local hero resident of the area. It distinguished Revolutionary War figure, and member of the Virginia General Assembly.

**1800-1850** THE GREAT PHILADELPHIA EXHIBITION

**1850-1900** Railroads played an important part in the early economic development of Martinsville and Henry County. Martinsville stood at the "crossroads" of the Norfolk & Western and Danville & Western railway routes.

**1869** A published directory listed 22 cotton and four mills throughout the county.

**1900-1950** As tobacco manufacturing ceased to flourish in the early 1900s, the area's furniture industry was born. Bassett, Hooker, and American Furniture companies were established by individual entrepreneurs, financed by local citizens.

**1906** Olden Town sponsored cross-country automobile trips with carefully planned "National Highway" between New York City and Jacksonville, Florida. The National Highway came right through the corners of Martinsville and Ridgeway, arousing much interest as these new motor car competitions occasionally made their way through town.

**1914** World War I begins

**1918** World War I ends

**1920** 19th Amendment passed, women received right to vote

**1929** Great Depression starts

**1941** Pearl Harbor was bombed by Japanese. US declares war

**1945** End of World War II

**1945** Population Peaks

**1945** Textile and apparel companies, including Perini Knitting, Saks Footing, and Emerald Valley Footing mills established. These companies flourished through most of the 20th Century.

**1989** L. Douglas Wilder of Virginia becomes first African American elected governor.

**2000 - now**

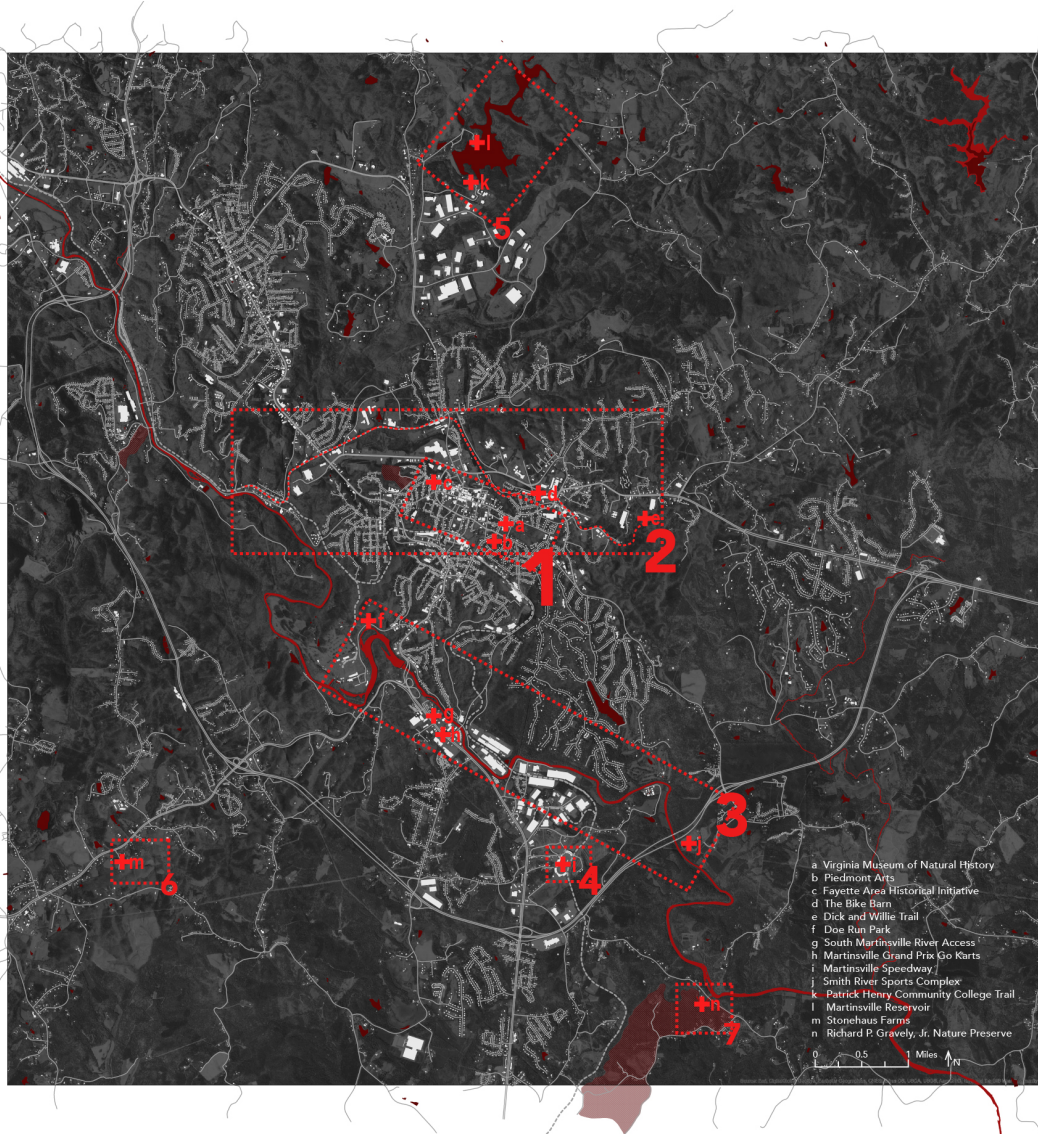


Image caption: History and Game Narrative Martinsville, M. El Khafif, E. Cleckly, M. Drivers, S. Zhang [RA]

# WE ARE MARTINSVILLE

[1] The New College Institute



91 Poplar St.



What are some classes you can take here?

New College Institute is a state-funded educational entity that provides access to bachelor's degree completion programs, master's degrees, teacher endorsement programs, teacher recertification courses, and more through partnerships with colleges and universities. NCI strives to be accessible and convenient for students of all ages. Our staff, faculty and board members are all committed to making NCI a premier educational facility for students, businesses, and the community at large.

[2] Farmers Market Mural



60 West Church St.



Who were the artists that made the murals connected to this one?

After completing a 100' mural for the Heller Foundation in Arkansas in 2007, Betty LaDuke toured Martinsville-Henry County to create sketches of local people and places. In conjunction with LaDuke's mural project, area high school students enrolled in MEC Art's 3-Upward Bound designed and painted murals inspired by LaDuke's design, which were also installed at the Uptown Farmers' Market.

[23] Senior Citizen Center



99 Moss St. S



What was this building in the past?

In 1927, a Jewish congregation named Ohev Zion was established. Forty-six Jews in five families lived in the area, so with the help of non-Jews in the community, \$15,000 was raised to build a synagogue, Ohev Zion Synagogue at 21 Moss Street. Members of the Jewish community became very involved in the larger community. Jews belonged to local fraternal and civic groups. They served on city council, directors of the local hospital and country clubs. So later on the synagogue turned hospital later turned Senior Center.

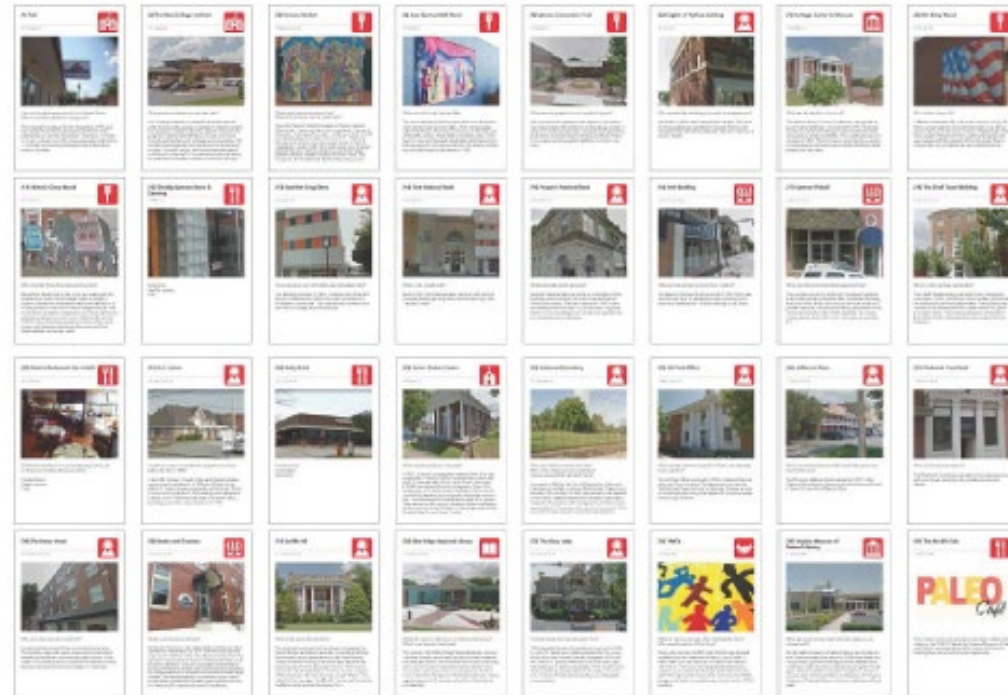
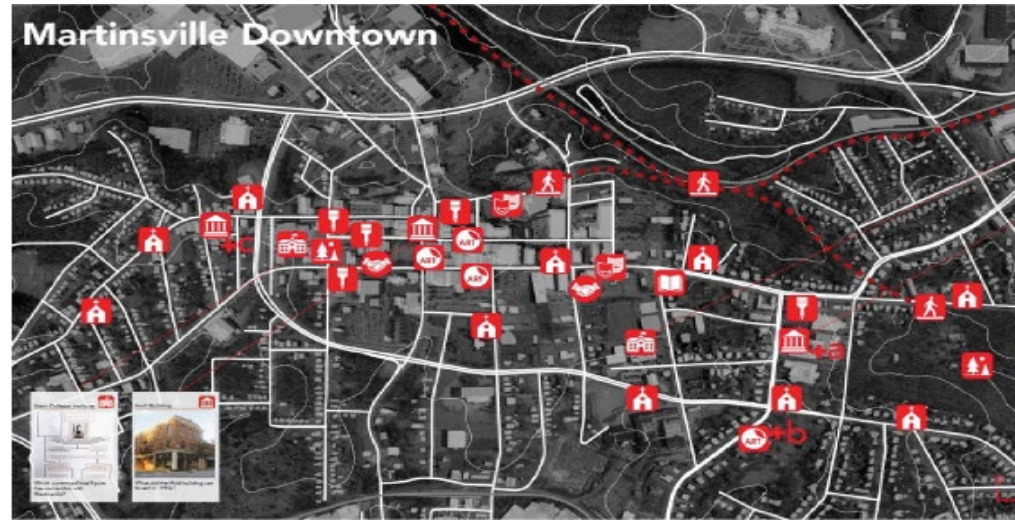


Image caption: Points of Interests, M. El Khafif, E. Cleckly, M. Drivers, S. Zhang

## WE ARE MARTINSVILLE

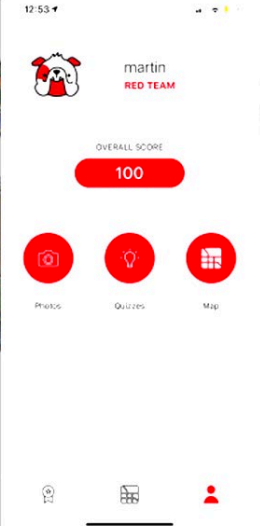
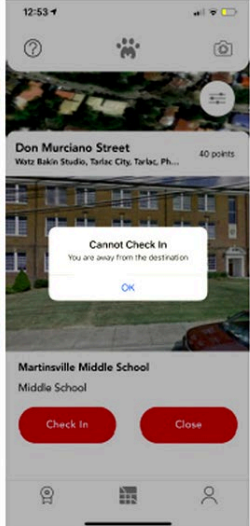
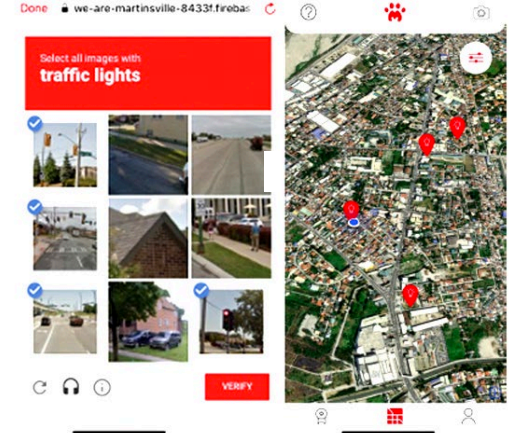
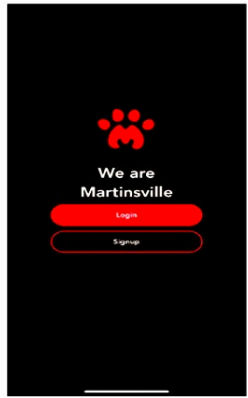
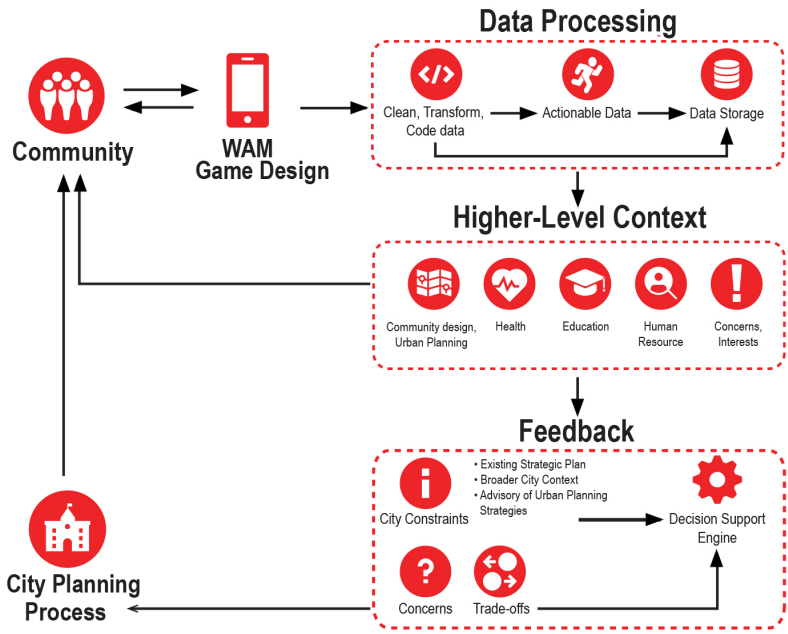


Image caption: Testing the prototype in Martinsville, M. El Khaff, E. Cleckly, M. Drivers, S. Zhang [RA]

# WE ARE MARTINSVILLE



November 2019

|                           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Public Awareness Campaign |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Workshop Series           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Market                    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Community Planning        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Marketing & Outreach      |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

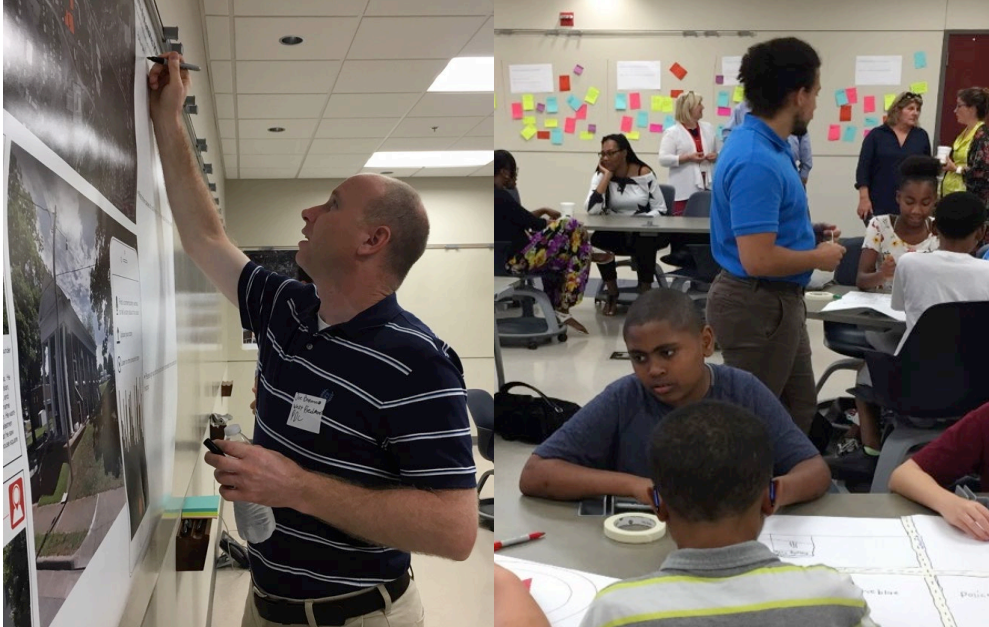


Image caption: NSF Proposal for further funding, M. El Khafif, K. Wibberly, T. Nguyen, J. Sanchez, S. Jain

# MAINSTREET 21

Polycentric Development toward the Vision of 21st Century Main Street in Virginia

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# Revitalizing Maine's Towns Through Broadband



Fletcher Kittredge,  
Chief Executive Officer, GWI

October 16, 2019

- Founded 25 years ago as an ISP to serve Maine
- Started with dial-up and transitioned to cable, DSL, and now fiber
- Builds, owns and/or operates fiber networks
- History of partnering with municipalities
- Also, CEO on the board of the non-profit ValleyNet which builds and operates a fiber network for 24 rural Vermont towns



# Town of Islesboro

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- Island community three miles off the coast of Maine
- 2010 Census reflects a population of 566 year round residents
- 270 total households
- 161 families
- Approximately 750 premises
- Year round population has been shrinking, particularly of school aged families
- Island concerned about losing school and viability
- Island was unserved by current FCC broadband standards
- Town determined that a gigabit broadband network would have major positive impact on attracting and retaining a vibrant year round community

# Islesboro's Municipal Network

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- Funded by municipal bonds, the Island built a universal gigabit fiber network
- GWI collaborated with Islesboro throughout the process
- GWI currently operates the network today
- Network was turned up in summer of 2018
- First year, 693 premises were connected
- Approximately 89% penetration rate

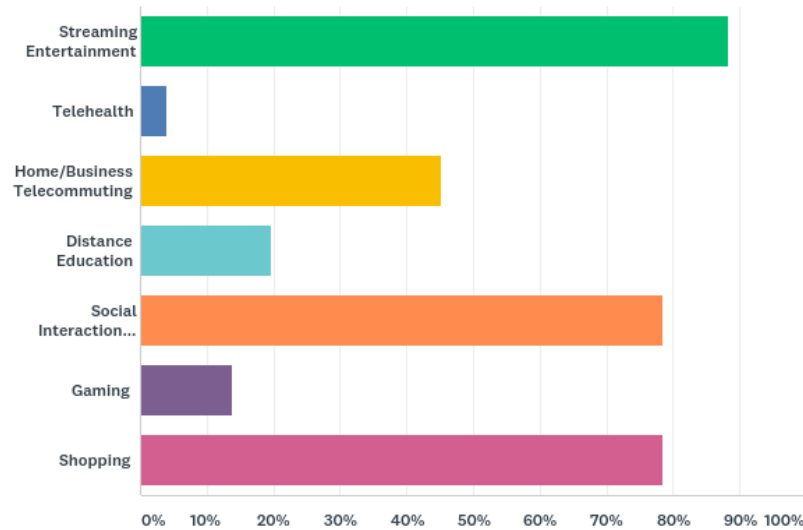
# Impact After Year One

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- Six new families have moved to island as year round residents due to network
- Recent survey from the Town shows high network satisfaction rates
- GWI recently surveyed over 50 residents

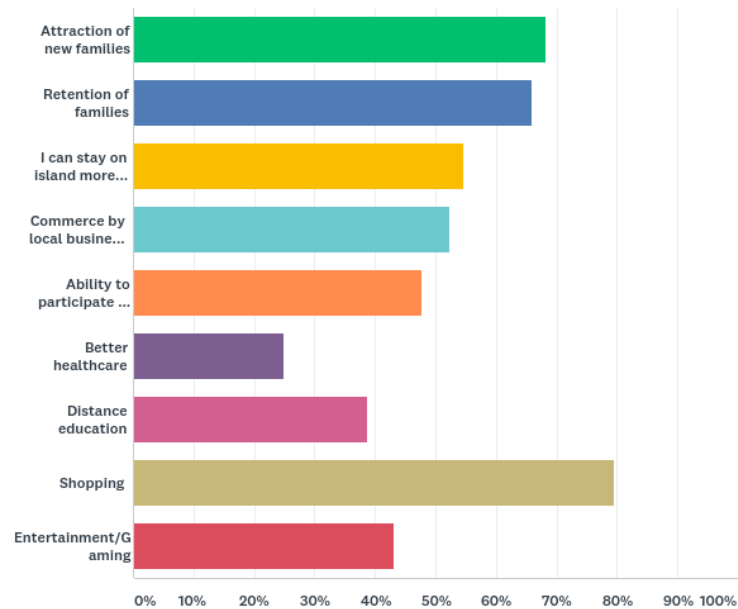
# Survey Results

Q1 Do you use Islesboro's gigabit network for any of the following (select any number)?



# Survey Results

Q3 Do you think the network helps enhance the quality of Islesboro life by these factors (select any number)?



# City of South Portland

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- A significant price increase placed upon the city by the city's former network provider drove the municipality to explore leasing own dark fiber network
- GWI was awarded contract following a successful RFP bid. GWI owns the network and city has a long-term fiber lease
- GWI's proposal was to build open-access network that would not only provide fiber to the city's buildings, but also homes and businesses passed on fiber route
- First phase was completed in 2014
- 479 total premises passed
- Six additional phases were added totaling roughly ten strand miles
- Construction of seventh phase, totaling 1.7 miles, will begin in Q 4, 2019

# Impact on South Portland

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- City significantly lowered the cost of municipal connectivity to the internet and between facilities.
- Connectivity was added to additional points such as traffic lights
- Southern Maine Community College (SMCC), an anchor institution, was able to leverage the network to bring ultra-high speed service to its campus
- A superior network and competition was provided to part of the city
- A pathway and progress along the path was provided for connectivity for all of the city

**Thank you!**

# Revitalizing Maine's Towns Through Broadband



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October 16, 2019



# Broadband's Role in Revitalizing Main Street

## Questions and Answers

- Please type your questions in the question box.
- The slides, transcript, and an audio recording will be posted on the BroadbandUSA website within 7 days of the webinar.

<https://broadbandusa.ntia.doc.gov/past-event>

# BroadbandUSA

Thank you for attending.

Tune in for the next Practical Conversations Webinar

## Building Digital Workforce Skills at the Local Level

**November 20, 2019**

**2:00 pm ET**

Registration is required for each webinar:

<https://broadbandusa.ntia.doc.gov/event>

# BroadbandUSA is available to help communities with their broadband access and digital inclusion efforts

## For General Information:



202-482-2048



[broadbandusa@ntia.gov](mailto:broadbandusa@ntia.gov)



<https://broadbandusa.ntia.doc.gov/resources>

## To Request Technical Assistance (TA):



Broadband TA Request Form -  
<https://broadbandusa.ntia.doc.gov/ntia-common-content/how-we-can-help>

### **BBUSA Resources**

- [Implementing a Broadband Network Vision: A Toolkit for Local and Tribal Governments](#)
- [Community Broadband Roadmap Toolkit](#)
- [Guide to Federal Funding of Broadband Projects](#)
- [Using Partnerships to Power Smart Cities](#)