



SMART CITIES: CHALLENGES AND INNOVATION

Mayors Innovation Summit

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 **@melnut**



A vibrant cityscape featuring a wide river in the foreground, a multi-arched stone bridge crossing it, and a dense urban skyline in the background. A prominent glass skyscraper stands out on the left. The scene is captured in bright daylight with a clear blue sky. A semi-transparent white rectangular box is centered over the image, containing bold black text.

**URBAN POPULATIONS WILL
DOUBLE GLOBALLY BY 2050,
REACHING 9 BILLION PEOPLE.**

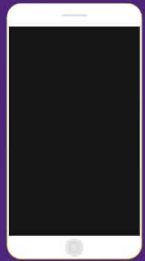
Source: United Nations

A background image showing an industrial cityscape with numerous smokestacks emitting thick white smoke into a hazy sky. In the foreground, there is a body of water with a few small buoys. The overall tone is somber and emphasizes industrial activity.

**CITIES GENERATE
OVER 70% OF THE
PLANET'S CO₂**

Source: C40 Cities

RAPID EXPANSION OF INNOVATION



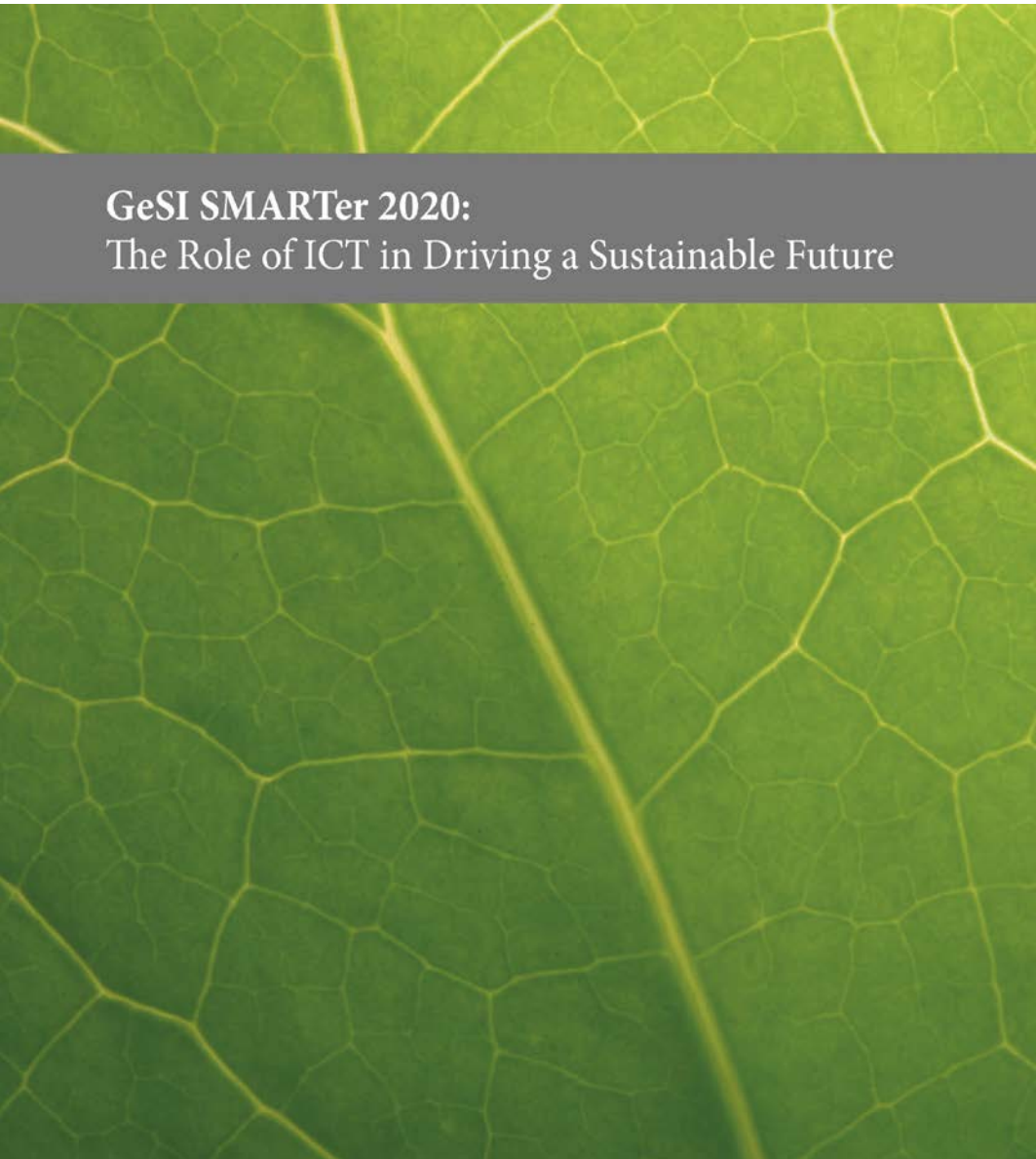
MOBILE ACCESS



BROADBAND
ACCESS



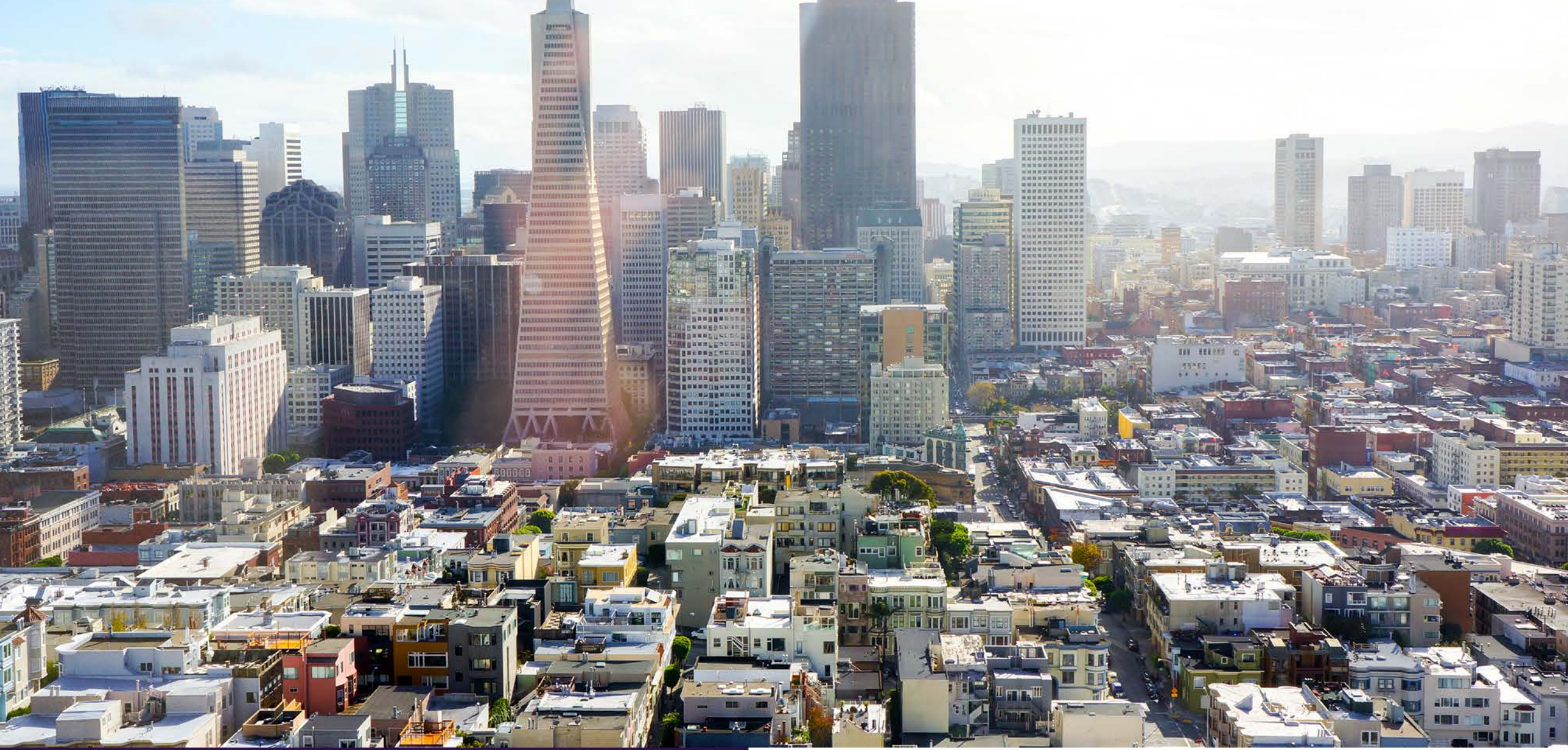
BIG DATA



GeSI SMARTer 2020:
The Role of ICT in Driving a Sustainable Future

**ICT HAS THE POTENTIAL
TO REDUCE
GREENHOUSE GAS
EMISSIONS BY 9.1
GIGATONS BY 2020.**





Source: Working USDN Project Group Definition

“A smart city uses information and communications technology (ICT) to **enhance its livability, workability and sustainability**”

- Smart Cities Council

“By utilizing these technologies to improve existing infrastructure and enable new systems and services, cities and communities aim to **improve efficiency and reduce costs, create new economic opportunities, enhance sustainability, improve quality of life, and meet other needs for their residents and businesses**”

- National Institute of Standards and Technology

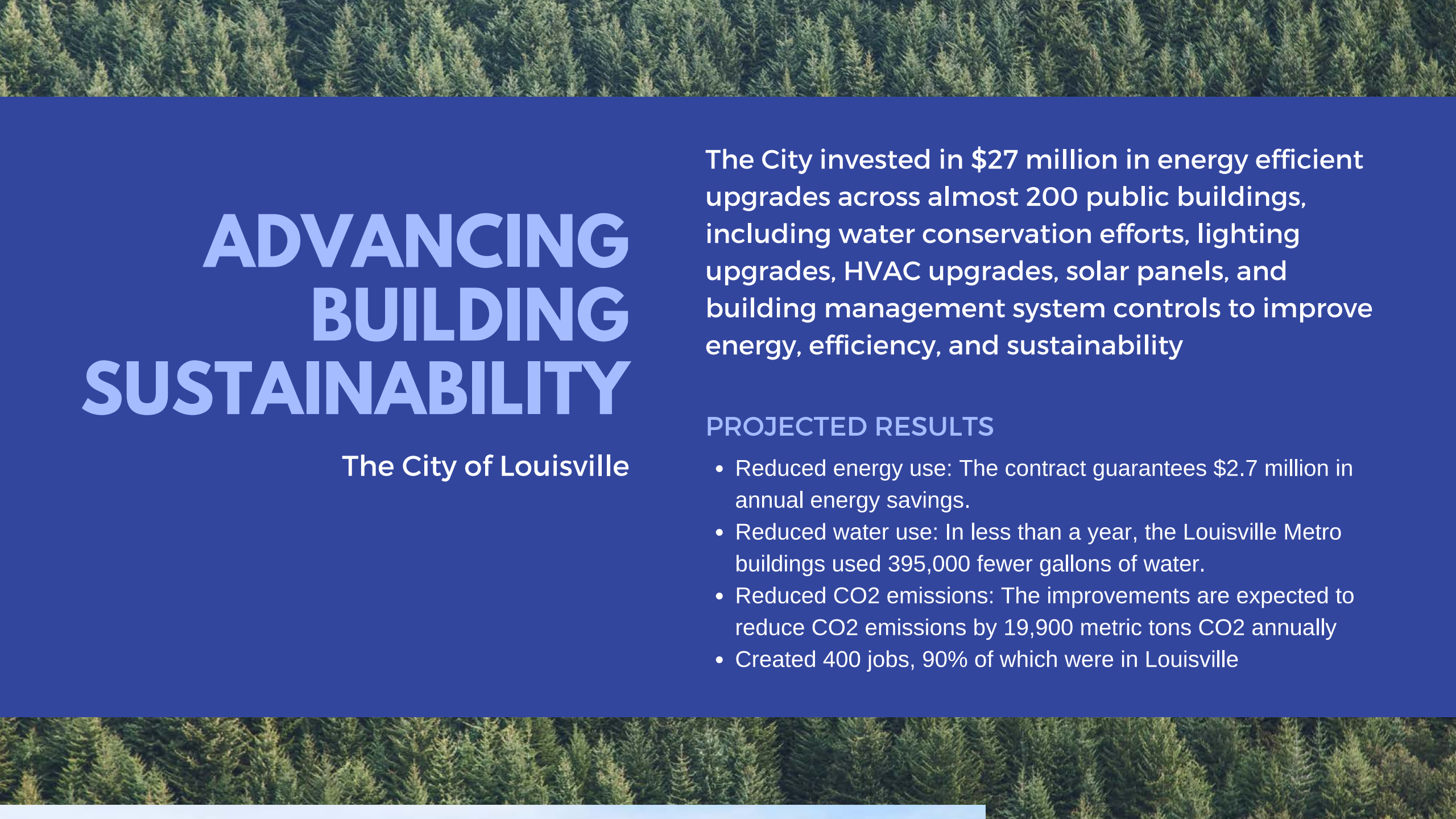
A smart city “[identifies] **opportunities to improve people’s lives** both by modernizing key infrastructures (such as for energy, water, or transportation) and by using information technology (often with open data) to enhance city operations and services”

- President’s Council of Advisors on Science and Technology



INNOVATION IN ACTION





ADVANCING BUILDING SUSTAINABILITY

The City of Louisville

The City invested in \$27 million in energy efficient upgrades across almost 200 public buildings, including water conservation efforts, lighting upgrades, HVAC upgrades, solar panels, and building management system controls to improve energy, efficiency, and sustainability

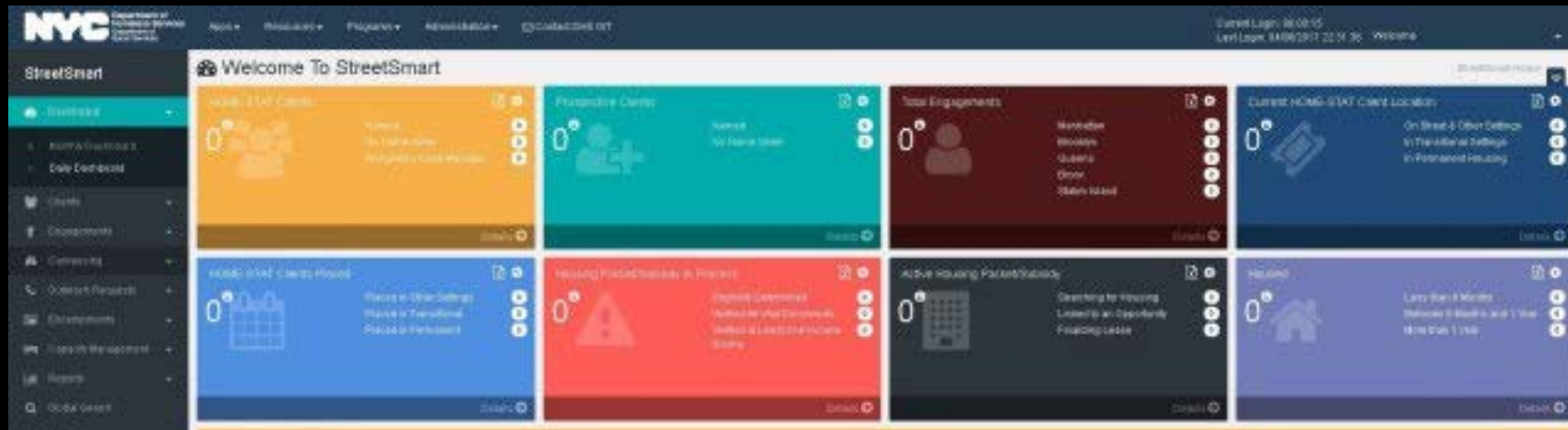
PROJECTED RESULTS

- Reduced energy use: The contract guarantees \$2.7 million in annual energy savings.
- Reduced water use: In less than a year, the Louisville Metro buildings used 395,000 fewer gallons of water.
- Reduced CO2 emissions: The improvements are expected to reduce CO2 emissions by 19,900 metric tons CO2 annually
- Created 400 jobs, 90% of which were in Louisville



e,

- humidity, chemical absorption and more
- Hosts the data on Chicago's open data portal for the public to access



ent can make informed decisions

- Increases collaboration between city workers and nonprofits that serve homeless populations

An aerial photograph of a city, likely Pittsburgh, featuring a river with several bridges, a large stadium on the left, and a dense urban skyline in the background. The entire image is covered with a semi-transparent blue filter. Overlaid on this background is the text 'PARTNERING FOR EQUITABLE OUTCOMES' in a large, bold, white, sans-serif font, centered horizontally and vertically.

PARTNERING FOR EQUITABLE OUTCOMES



REACHING YOUR EQUITY & COMMUNITY ENGAGEMENT GOALS

Equity

- Increasing access
- Improving outcomes for underserved populations
- Address the digital divide
- Engage a larger portion of the community.

Community Engagement

- Reduce barriers to civic involvement within communities
- Increase transparency
- Collect feedback from their citizens
- Overcome traditional barriers of time and resources to increase access
- Participation in decision making.



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REPORT

LOS ANGELES SHARED-MOBILITY CLIMATE AND EQUITY ACTION PLAN

REPORT PREPARED BY: NRDC AND NUTTER CONSULTING



EQUITY AND MOBILITY: LOS ANGELES MOBILITY STUDY

By Nutter Consulting and the NRDC

In 2017, Nutter Consulting worked with the City of Los Angeles to develop a Plan that identified a set of policy pathways needed to reach ambitious transportation-related goals, specifically, the target of increasing the use of shared services by two percent in 2025 and five percent by 2035 in the Sustainable City pLAn.

01 EMBED EQUITY

Design shared mobility
programs & policies with and
for underserved communities

C POLICIES

Design shared mobility
policies and programs for
flexibility and adaptability

FINDING PARTNERS FOR SUCCESS

Cities often leverage non-profits, local universities and colleges, and local businesses for smart city projects.





MetroLab Network is a group of more than 35 city-university partnerships focused on bringing data, analytics, and innovation to city government.

PROJECTS AND PARTNERSHIPS INCLUDE:

- Cycle Atlanta: The City of Atlanta and Georgia Institute of Technology
- NowPow: The City of Chicago and the University of Chicago
- Inclusive Boulder: The Cities of Boulder and Denver, and the University of Colorado
- Geospatial Determinants of Health Outcomes (GEODHOC): The City of Detroit and Wayne State University
- Smart City Newark IoT Test Bed: The City of Newark and the New Jersey Institute of Technology

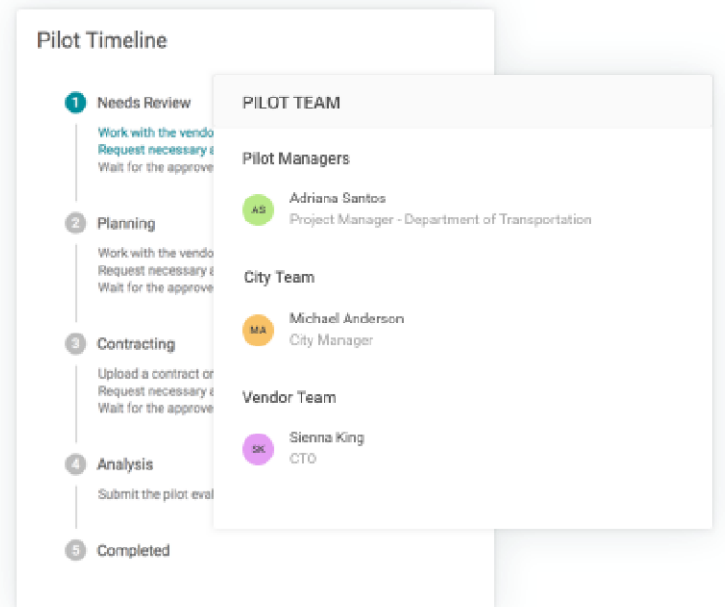
PILOT PROJECT PLATFORM

One example is UrbanLeap - a pilot-management platform that helps cities w/ testing new technologies by streamlining the pilot process, engaging the right people with a structured workflow & creating automated reports.

Who uses it?

- Cities and vendors
- At the city, users are any city employee engaged in a pilot, internal or external.
- For vendors, city users are the vendor's point-of-contact.

Track Success



Manage Pilots

The City and County of San Francisco's **PILOT PROJECT REGULATIONS**

KEY TAKEAWAYS

- Pilot projects should be under 2 years.
- The City allows for an additional method of procurement outside of the traditional bidding process for pilot projects. Governmental departments may submit a request through the Purchaser of Supplies of San Francisco.
- After the pilot concludes, the Purchaser needs to submit a report stating the results of the project with recommendations for future procurement.



STARTUP IN RESIDENCE (STiR)

Starting in 2014 in San Francisco, STiR's mission is to bring together tech startups and civic agencies to explore technology solutions. This allows the private sector to understand the needs of governments, and for governments to understand what potential technology is available. STiR first expanded to Oakland, San Leandro and West Sacramento, but has since reached 11 cities across the US.

STiR works by:



STRATEGIES FOR SMART, SUSTAINABLE AND EQUITABLE CITIES

DEVELOP DIGITAL STRATEGIES



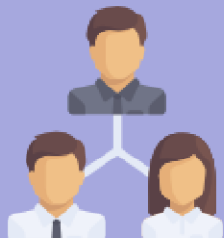
- Develop a citywide data management framework
- Develop a citywide digital strategy

CREATE AN INNOVATION RICH CULTURE

- Create an Innovation Office
- If you fail, fail fast



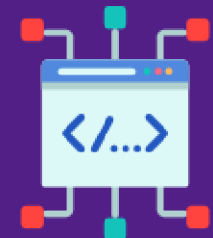
BUILD NEW CAPACITIES



- Create leadership roles for IT
- Recruit support staff that link IT and sustainability

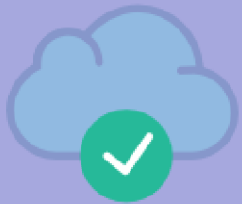
DEVELOP PARTNERSHIPS WITH TECH SECTOR

- Partner on vision setting
- Establish co-creator opportunities



STRATEGIES FOR SMART, SUSTAINABLE AND EQUITABLE CITIES

ENGAGE CITIZENS THROUGH OPEN SOURCE APPS



- Create open data platform or initiative
- Use community talent to create tech solutions

FOCUS ON DATA PRIVACY

- Understand the unique privacy concerns of your citizens
- Embed privacy and security concerns from the start



MASTER RAPID INNOVATION



- Define macro problems as micro issues
- Establish innovation centers

REINVENT FRIENDLY PROCUREMENT SYSTEMS



CITIZEN CENTRIC INNOVATION



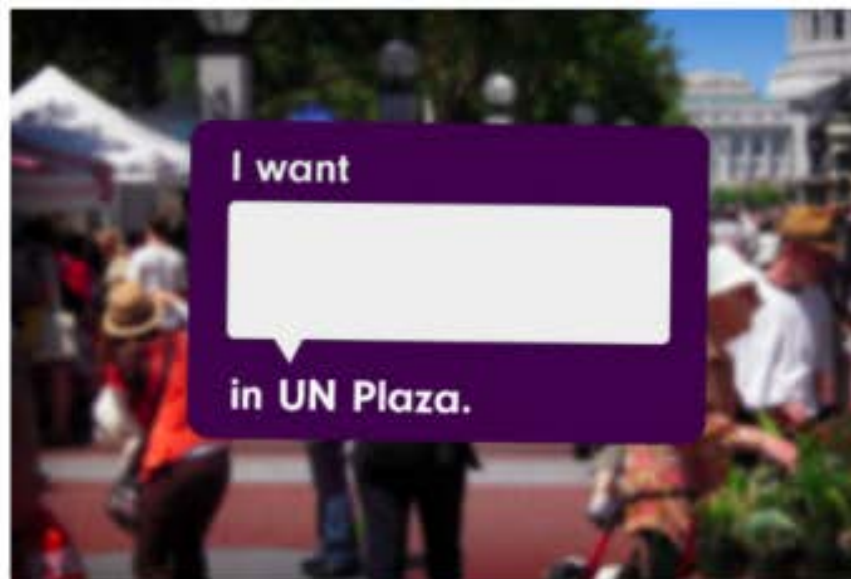
A grayscale photograph of the Golden Gate Bridge in San Francisco. The bridge's iconic towers and suspension cables are visible, spanning across the water. The sky is overcast, and the water surface shows some ripples and a small sailboat in the distance. The text "THANK YOU!" is overlaid in a bold, blue, sans-serif font across the center of the image.

THANK YOU!



How can we make UN Plaza a better place?

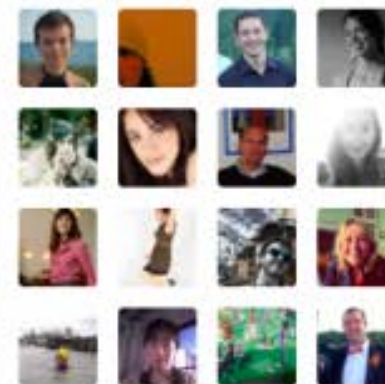
Asked by [San Francisco Beautiful](#)



About this Project

This spring, [SF Beautiful](#) was awarded a grant from the City of San Francisco to make United Nations Plaza a

Participants (3,900) [All](#)



Topics

[Art](#) [Culture](#) [Economy](#) [Equity](#)
[Green](#) [Kids](#) [Public Space](#)
[Seniors](#) [Trees & Gardens](#) [Urban](#)
[Design](#) [Wayfinding](#)

STREET WYZE

Founded by Antwi Akom, Streetwyze is an app that visualizes citizen data to inform local lawmakers on key community issues.

Food Deserts in East Oakland: Case Study

e city.



WHAT HASN'T WORKED

Smart city projects
have had unforeseen
challenges.

rnet. However, after complaints of extended use and viewing illicit content, the City had to remove this feature.





NOOGANET

NoogaNet is the name of the free public WiFi Service for Chattanooga, TN. However, the project has run into 2 main challenges.

Low Usage Metrics

Though the City was looking to expand NoogaNet coverage area, they found it was being underutilized in existing areas. The City concluded that the problem was that initial advertisement was inadequate. Therefore, they launched a new marketing campaign to increase visibility.

After Hours Use and Crime

The city has observed a high amount of after hours traffic outside of some public buildings. The police department has discovered that known criminal entities are using NoogaNet after hours for illegal activities.

The City is exploring potential solutions such as:

- Set up a curfew (but this could restrict residential access)
- Require an email address to log on
- MyChattanooga portal for residents to log on (however this brings up privacy concerns)