




OCTOBER 18
9AM – 2PM
 111 W Cimarron St.
 Colorado Springs, CO

Connected Cities

Getting to Smart – Colorado Springs

Colorado Springs has developed an innovative program branded, SmartCOS that addresses how technology can be applied to improve city services, quality of life, equity, sustainability, and transportation through applying “smart” infrastructure. The team has found that an open collaborative ecosystem is required to meet their goals.

This event will focus on the role technology, data and networks play in enabling innovation. Broadband, Fiber Optics, IoT, 5G, Wi Fi and Private Networks will be our focus from a technology perspective.

Featured Speakers



RYAN TRUJILLO
 Deputy Chief of Staff
 Colorado Springs



CARLOS TAMAYO
 Innovation Manager
 Colorado Springs



TYLER SVITAK
 Executive Director
 Colorado Smart City Alliance



“Getting to Smart”

FALL ZOOM SERIES



Private Cellular Networks (CBRS)

OCTOBER 26 | 11AM – 12PM EST



Jamaal Smith
 Vice President
 Kajeet



Jim Jacobellis
 SVP
 Alef



Eric Toenjes
 National Market Manager
 Graybar



“Getting to Smart”

FALL ZOOM SERIES



Fiber Optics Broadband

OCTOBER 27 | 11AM – 12PM EST



Kara Mullaley
 Broadband Market Manager
 Corning



Greg Spraez
 CRO
 Network Connex



Scott Jackson
 National Market Manager
 Graybar



Agenda

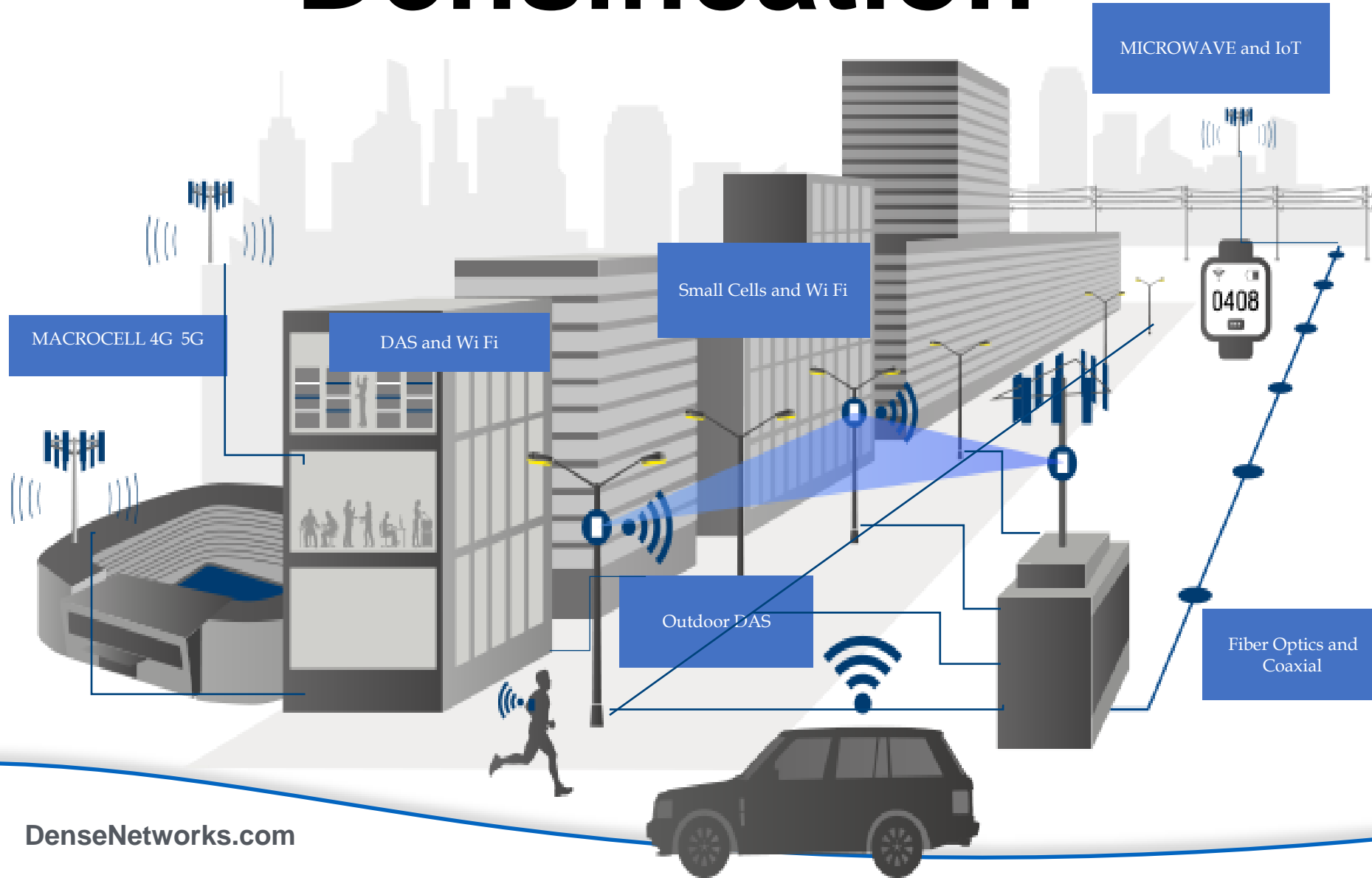
- 9:05 Welcome Peter Murray, Executive Director, Dense Networks
- 9:15 Keynote Ryan Trujillo, Deputy Chief of Staff, Colorado Springs
- 9:40 Colorado Innovation Tyler Svitak, Executive Director, Colorado Smart Cities Alliance
- 10:00 Colorado Springs Innovation
 - Moderator, Carlos Tamayo, Innovation Manager, Colorado Springs
 - Sam Arnold, Analyst, Economic Development
 - Tyra Sandy, Senior Engineer, Public Work
 - James DeVoy, Operations Manager, IT
- 10:50 Break
- 11:05 Broadband Funding Trina Kwon, Attorney, Morgan Lewis
- 11:25 Network Innovations Peter Murray, Moderator
 - Fiber Optic Networks
 - -Deb Walker, Director, Ting
 - -Greg Spraeetz, CRO, Network Connex
 - -Tim Scott, Broadband Consultant, Colorado
- 12:05 Wireless Networks
 - Tony Eigen, VP, BaiCells
 - Eric Toenjes, National Market Manager, Graybar
 - Rory McCabe, Sr. Manager, Dejero
- 12:40 Lunch
- 2:00 Adjourn





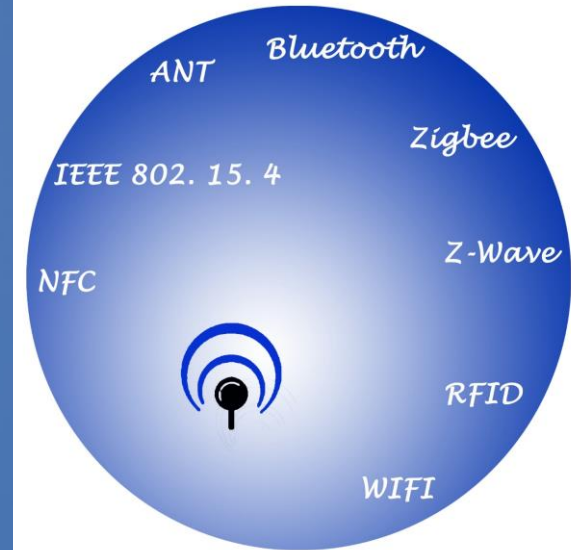
Connected City
Smart City

Densification



How Many Networks?

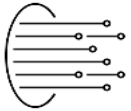
Capacity, Coverage, Compliance



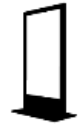
Digital Infrastructure

Scalable/Interconnected

Fiber IoT Cell-Macro, Small & DAS Wi Fi Private LTE & 5G Smart Poles Devices



Cameras



Kiosks



Computers/Tablets



Sensors

LoRa®



DenseNetworks.com

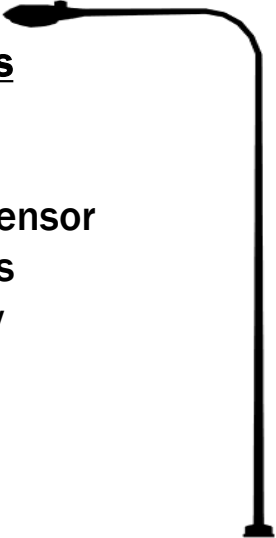
San Jose Broadband Strategy

STREETLIGHT

Light/Safety

Properties

- Height
- Power
- Light Sensor
- Lumens
- Density

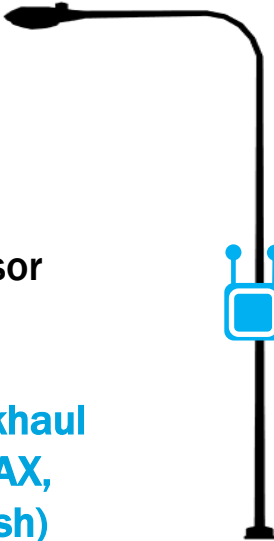


SMALL CELLS

Broadband Digital Infrastructure

Properties

- Height
- Power
- Light Sensor
- Lumens
- Density
- **Data Backhaul (Fiber, COAX, Radio mesh)**

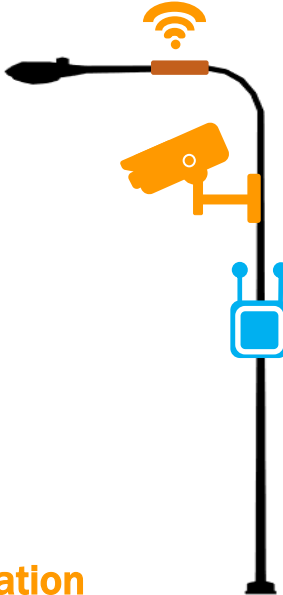


INTERNET OF THINGS

Smart Cities

Properties

- Height
- Power
- Light Sensor
- Lumens
- Density
- **Data Backhaul**
- **Sensors**
- **Cameras**
- **2-way Communication**
- **Banner Advertising**



Maturity:

Mature

Emerging

Extremely Immature

Possible Action: Proceed w/ LED Light Replacement Only

Re-examine in Broadband Strategy

Seek to Understand with Knight IoT Grant

SmartBlockPHL: Midtown Village

A collaborative effort among Comcast, US Ignite, and Philadelphia to deploy a multi-pronged solution designed to meet the needs of several stakeholders. The demonstration project entails retrofitting luminaires and sensors onto pre-existing streetlight poles. This project will deliver new insights to Philadelphia, its residents, and its partners in the business and the community.

Fast Facts:

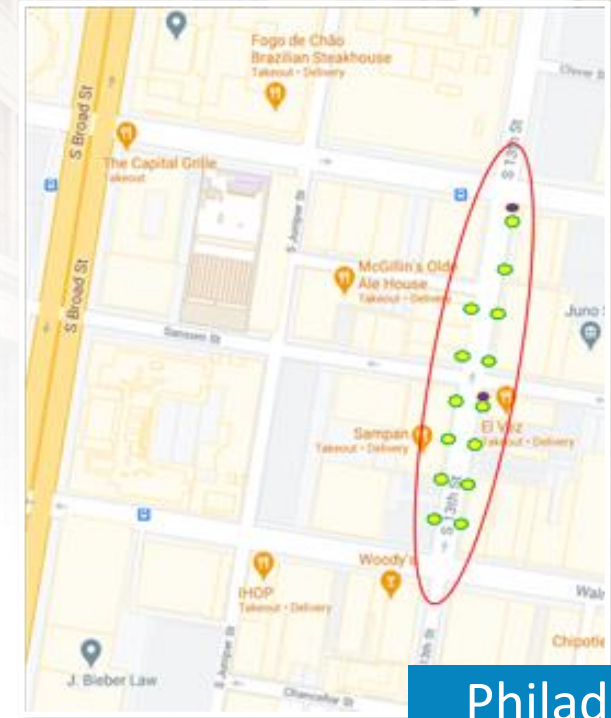
- 14 Smart Streetlights (Colonial Design) with sensors
- City owned and managed solution
- Collects meta-data about traffic, street activity and the environment
- No PPI is collected or stored
- PHL will not use data to enforce laws or issue tickets
- Uses the latest in EDGE processing
- Deliver new insights to Philadelphia, its residents, and its business partners

Use cases & Insights:

- Pedestrian occupancy
- Environment health
- Roadway Traffic
- Parking Utilization
- Managed WIFI

Technology:

- Comcast 1Gbps EDI Circuit
- Retrofit streetlights with Partner's smart solution
- Partner's lighting management and Smart City Platform



Philadelphia, PA

100

ONE HUNDRED

FW C 128

FEDERAL RESERVE NOTE

MF 57035131 B

F6

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Signature of G. Steven Hatje

Secretary of the Treasury.

Rosa Gumataotao Rios

Treasurer of the United States.



UNIONED
DRAWN

THIS NOTE IS
FOR ALL DEBTS, P

JULY 4, 1776.

States of A

for our people to depen

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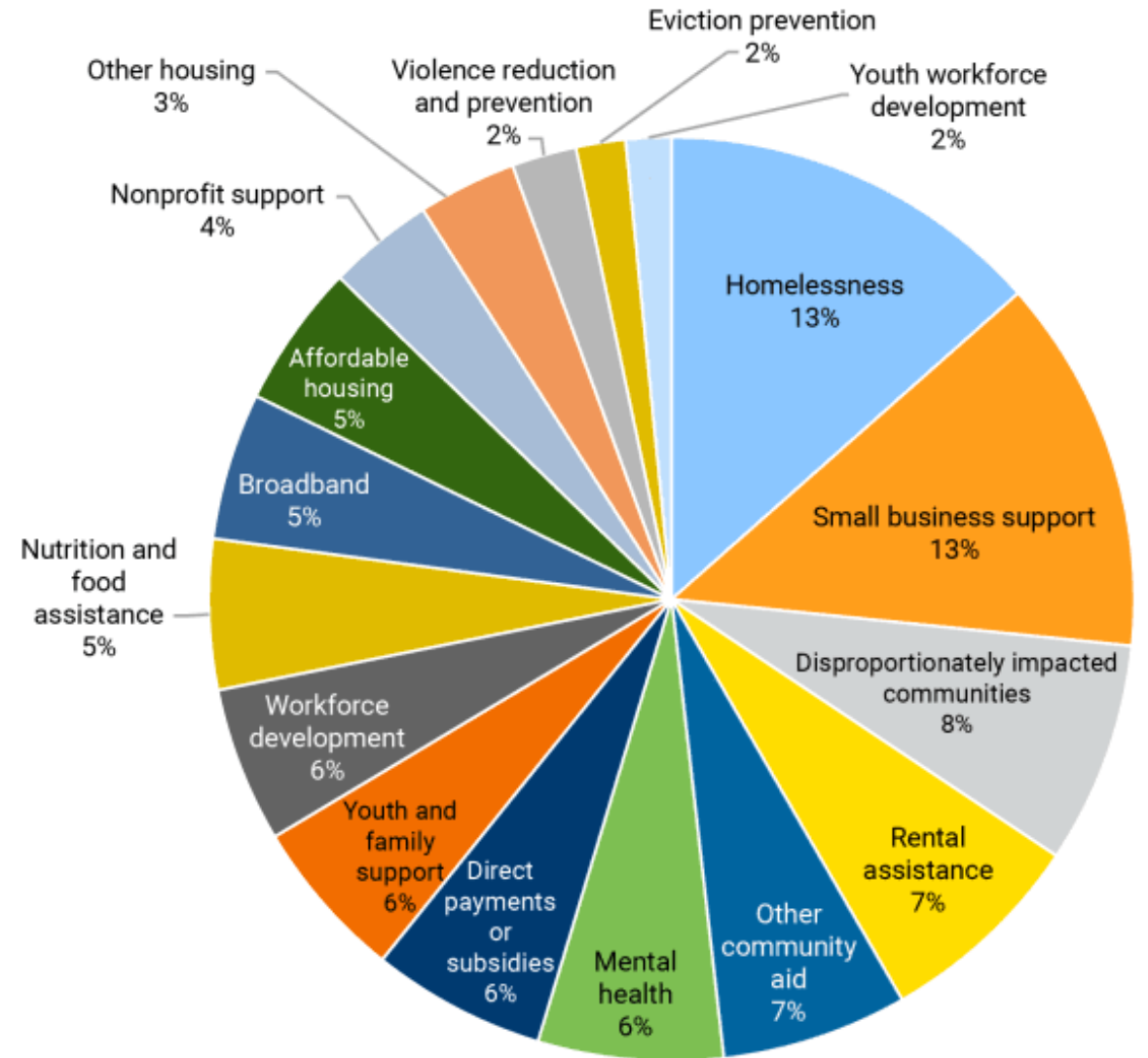
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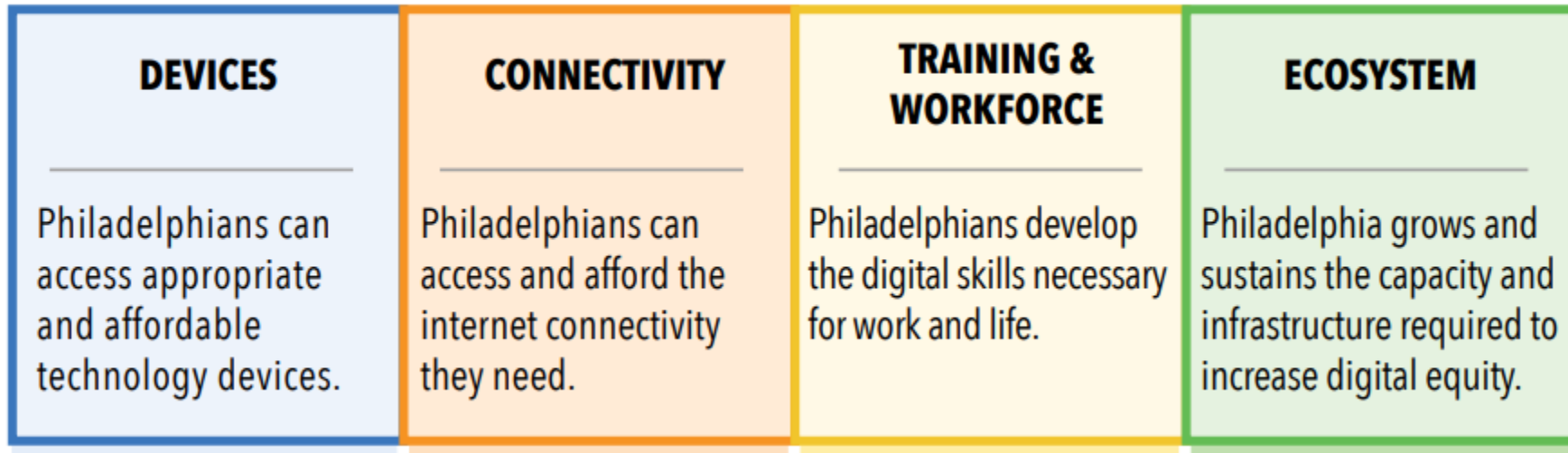


ARPA funds

	Budgeted (\$)	Economic disadvantage (\$)	Percentage (%)	Total Projects
Madison, Wisc.	22,800,000	21,800,000	95.6	28
Riverside, Calif.	29,242,594	27,090,000	92.6	29
Columbus, Ohio	53,284,081	48,209,406	90.5	8
St. Louis, Mo.	123,195,020	109,650,470	89.0	70
Nassau County, N.Y.	185,350,000	163,750,000	88.3	18
San Jose, Calif.	70,562,771	61,900,771	87.7	25
Clackamas County, Ore.	28,191,637	22,684,455	80.5	11
Washoe County, Nev.	46,312,296	37,192,053	80.3	25
Minneapolis, Minn.	108,527,983	84,885,905	78.2	67
Dane County, Wisc.	94,375,082	71,662,768	75.9	16
San Joaquin County, Calif.	66,011,593	49,932,146	75.6	11
Los Angeles County, Calif.	704,851,000	521,501,000	74.0	61
Prince William County, Va.	31,200,000	22,500,000	72.1	7
Northampton County, Pa.	22,658,617	15,704,262	69.3	6
San Mateo County, Calif.	74,448,909	50,748,909	68.2	19
Nashville-Davidson, Tenn.	78,381,250	51,713,996	66.0	17
Maricopa County, Ariz.	414,987,433	273,141,352	65.8	55
Pierce County, Wash.	175,781,445	115,159,256	65.5	79
Alameda County, Calif.	142,500,000	91,500,000	64.2	15
Phoenix, Ariz.	133,365,662	85,565,662	64.2	36
St Paul, Minn.	33,630,184	21,031,000	62.5	19
Orange County, Fla.	135,830,857	82,362,846	60.6	38
Ingham County, Mich.	29,601,971	17,318,000	58.5	13
York County, Pa.	65,753,816	37,983,311	57.8	105
Mesa, Ariz.	27,800,000	16,000,000	57.6	4



Philadelphia



Phase 3

How can we address digital enablement?

Availability, Adoption, Affordability and Ability



How

Broadband and Digital Equity Planning Matrix

Functional Locations	Devices	Networks	Programs	Funding
• Community Centers	• Computers	• Fiber Government	• Literacy	• State-BOP
• Hospitals and Clinics	• Tablets	• Fiber Service Provider	• Individual Devices	• Federal-State-CPF
• Libraries	• Smart Phone	• Cellular	• MDU Infrastructure	• Federal-State-BEAD
• Senior Centers	• Wi Fi	• Wi Fi	Workforce and Skills	• Federal-State-Digital Equity
• Parks	• Telehealth Booth	• Private	• Telehealth	• Federal Digital Equity
• MDU & Group Homes	• Digital Boards	• LAN	• Helpdesk	• E-Rate

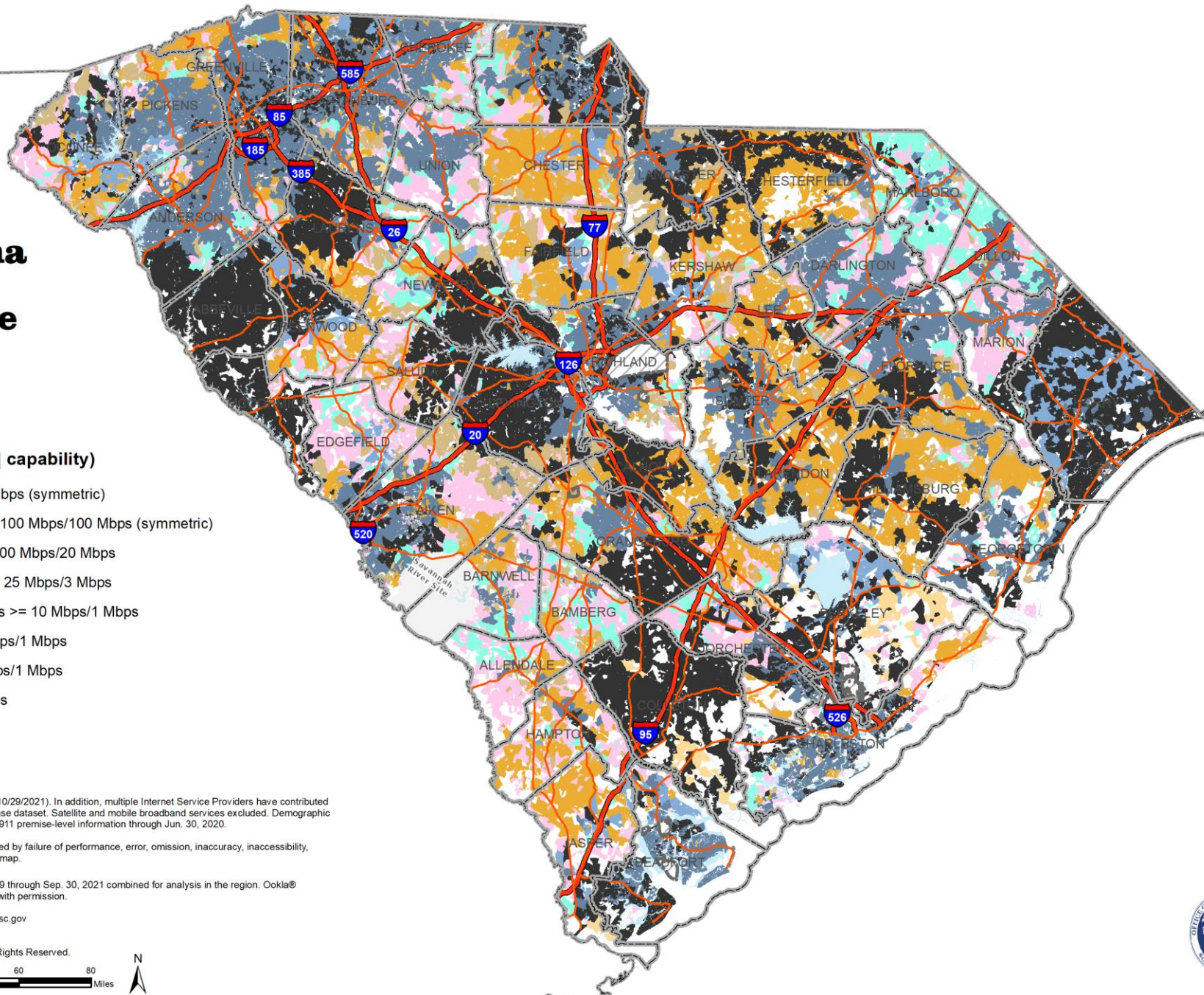
South Carolina

Best Available Technology

September 30, 2021

Best Available Technology (type | capability)

- Fiber | Speeds \geq 100 Mbps/100 Mbps (symmetric)
- Cable (DOCSIS 3.1+) | Speeds \geq 100 Mbps/100 Mbps (symmetric)
- Cable (DOCSIS 3.0) | Speeds \geq 100 Mbps/20 Mbps
- Cable (DOCSIS $<$ 2.0) | Speeds \geq 25 Mbps/3 Mbps
- VDSL (Fiber-To-The-Curb) | Speeds \geq 10 Mbps/1 Mbps
- ADSL2, ADSL2+ | Speeds \geq 6 Mbps/1 Mbps
- Fixed Wireless | Speeds \geq 10 Mbps/1 Mbps
- ADSL | Speeds \geq 3 Mbps/768 kbps
- No Internet Service Available
- Zero Households



Data: Based on ORS analysis of FCC Form 477, Dec. 31, 2020 (pub. 10/29/2021). In addition, multiple Internet Service Providers have contributed their FCC Form 477, Jun. 30, 2021 data to augment and update the base dataset. Satellite and mobile broadband services excluded. Demographic data based on US Census 2020 information that was enhanced with E911 premise-level information through Jun. 30, 2020.

The ORS is neither responsible nor liable for damages or injuries caused by failure of performance, error, omission, inaccuracy, inaccessibility, incompleteness or any other errors in information or formatting on this map.

OOKLA Speedtest Intelligence® data from Jan. 1, 2019 through Sep. 30, 2021 combined for analysis in the region. Ookla® trademarks used under license and reprinted with permission.
 Submit comments or questions to maps@ors.sc.gov

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 South Carolina Office of Regulatory Staff. All Rights Reserved.



BROADBAND OFFICE

Residential Broadband Technology

Best Available Technology Class

- Fiber | Speeds \geq 100 Mbps/100 Mbps (symmetric)
- Cable (DOCSIS 3.1+) | Speeds \geq 100 Mbps/100 Mbps (symmetric)
- Cable (DOCSIS 3.0) | Speeds \geq 100 Mbps/20 Mbps
- Cable (DOCSIS < 2.0) | Speeds \geq 25 Mbps/3 Mbps
- VDSL (Fiber-To-The-Curb) | Speeds \geq 10 Mbps/1 Mbps
- ADSL2, ADSL2+ | Speeds \geq 6 Mbps/1 Mbps
- Fixed Wireless | Speeds \geq 10 Mbps/1 Mbps
- ADSL | Speeds \geq 3 Mbps/768 kbps
- No Internet Service Available
- Zero Households

Fiber and Cable
Easily deliver reliable 25/3. These areas are not our problem.

Copper and Fixed Wireless
Copper technology (xDSL) cannot deliver reliable 25/3. End of useful life.

Fixed Wireless requires optimum conditions to exceed 25/3; however, it delivers *Speed to Access* meaning that high need areas have the potential to get coverage fast while physical connections to each house are built.

No Internet Options Exist
This has nothing to do with affordability
Customers in these areas cannot receive service at their physical address



COLORADO

Broadband Office

Governor's Office of Information Technology



90.2 %

Percent of Locations Served
With 100 ↓ Mbps / 20 ↑ Mbps Service
Current as of 12/31/2022



190,850

Total Locations Without
100 ↓ Mbps / 20 ↑ Mbps Service
Current as of 12/31/2022



39,682

Total Awarded Locations
from CBO programs
Current as of 04/26/2023



\$99.2M

Total Awarded Amount
from CBO programs
Current as of 04/26/2023



180.1 Mbps

Ookla® Median Download Speed
Out of 457,641 speed tests taken
From 01/01/2023 to 05/31/2023

Based on analysis by Colorado Broadband Office of Ookla® Speedtest Intelligence® data for 2023 Year-To-Date. Ookla trademarks used under license and reprinted with permission.



20.0 Mbps

Ookla® Median Upload Speed
Out of 457,641 speed tests taken
From 01/01/2023 to 05/31/2023

Based on analysis by Colorado Broadband Office of Ookla® Speedtest Intelligence® data for 2023 Year-To-Date. Ookla trademarks used under license and reprinted with permission.

Apply Filters

1 Select a Place Type

- County
- House District
- Municipality
- Region
- School District
- Senate District
- State Boundary

2 Select a Place

Search...

- No Selection
- Adams County
- Alamosa County
- Arapahoe County
- Archuleta County
- Baca County
- Bent County
- Boulder County
- Broomfield County
- Chaffee County

Locations Served at 25/3 Mbps

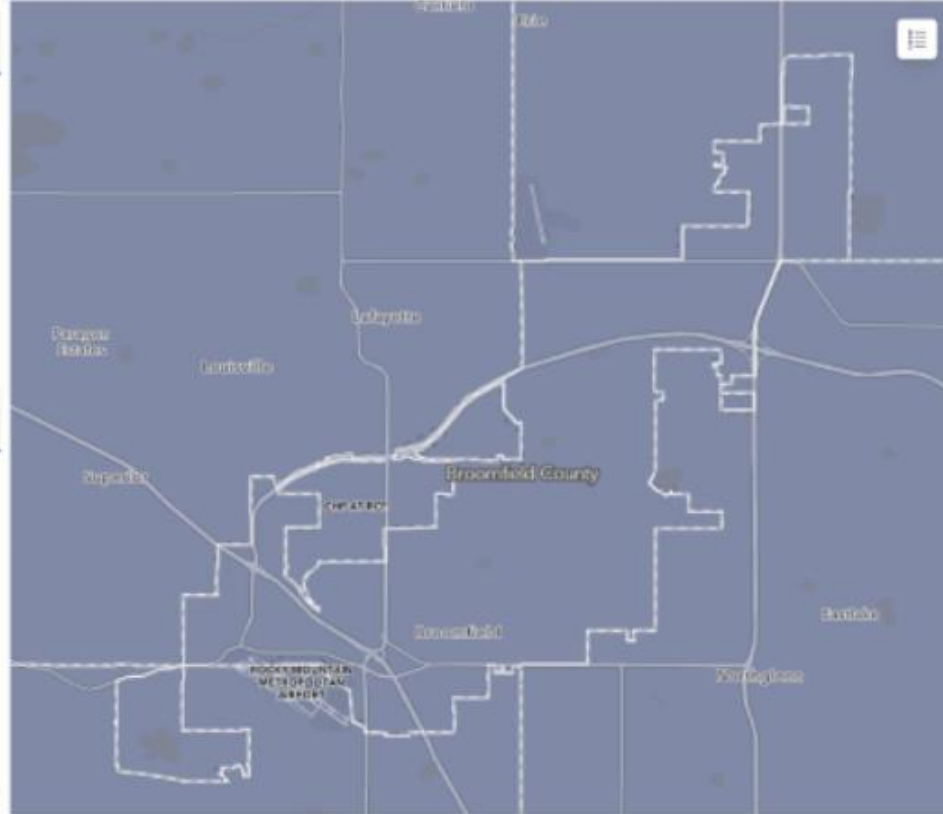
Broomfield County
99.8%

State Progress
96.2%

Median Ookla® Speedtest® Download Speeds (Mbps)



Median Ookla® Speedtest® Upload Speeds (Mbps)

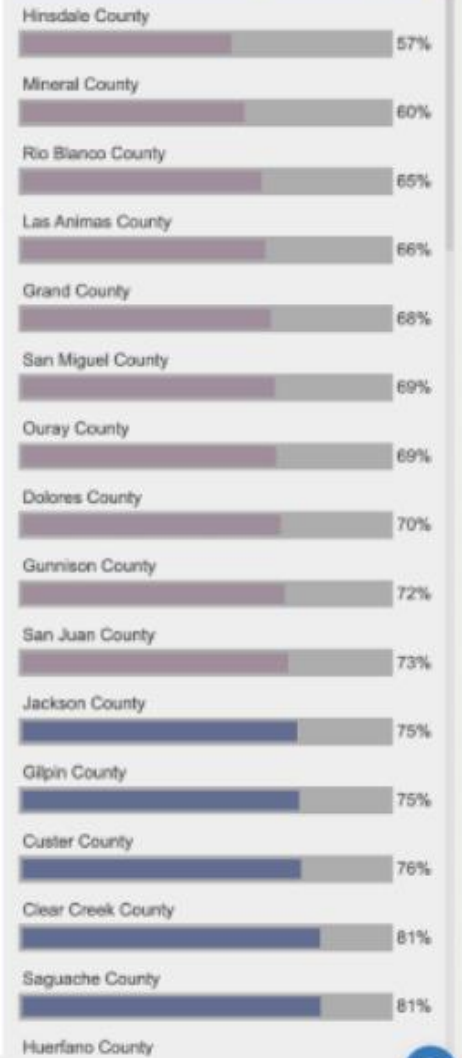


Median Ookla® Speedtest® information is based on analysis by Colorado Broadband Office of Ookla Speedtest Intelligence data for Q1-Q3 2022. Ookla trademarks used under license and reprinted with permission.

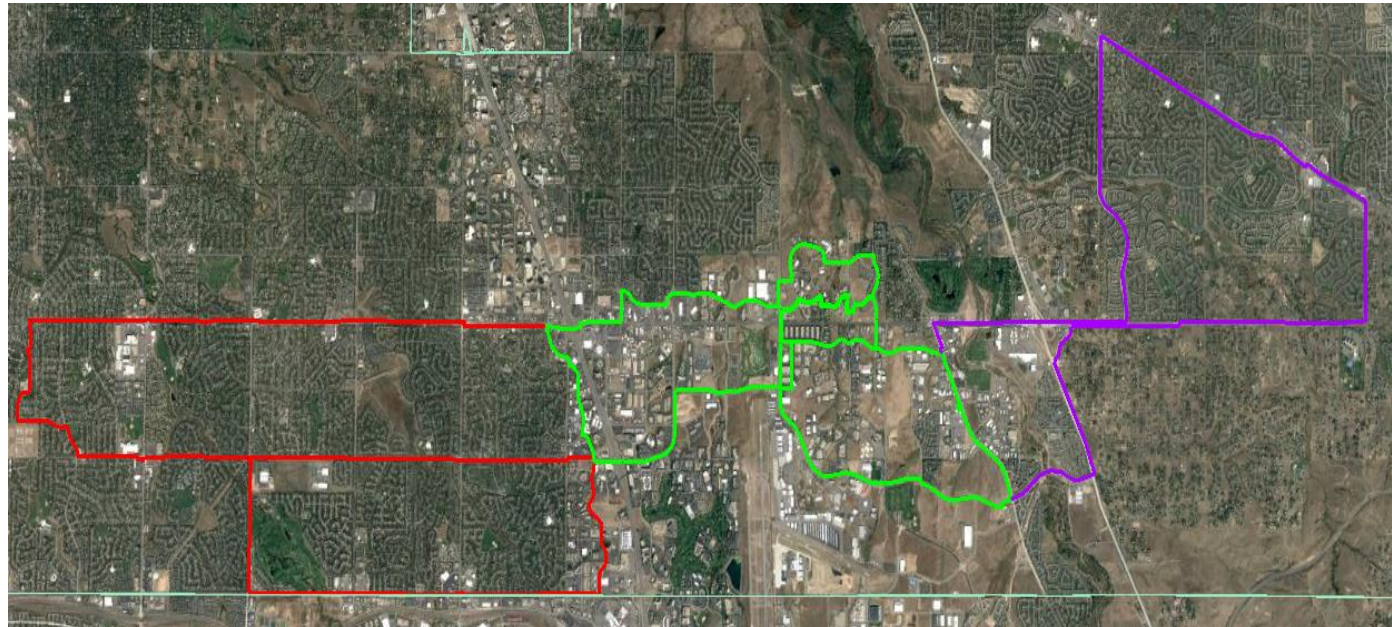
City of Westminster, Boulder County, City and County of Broomfield, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, ... Powered by Esri

100/20 Mbps 25/3 Mbps




All Places Summary 25/3 Mbps



Fiber Backbone-Open Access Model



Fiber Backbone – Rings and Status

-  Central Ring – Constructed
-  East Ring – Under Construction
-  West Ring – Constructed

5G Solution + Fiber

- Critical to success
 - Zoning/Permitting
 - High volume of applications
 - Fiber availability
 - Supply chain challenges
 - Timely installation
 - Power availability
 - High volume of applications
 - Timely installations
 - Trained and trusted professional service providers to support
 - Design
 - A&E
 - Site Acquisition
 - Construction

Utility Lease Model



Utilities of the Future:

- Over 2,000 miles of fiber buildout over the next 6 years
- Demand Side Management
- Distributed generation
- Advanced Metering Infrastructure

Fiber connectivity available to:

- Every address
- Every signalized intersection
- Every street light

Enabling infrastructure:

- High speed
- Low latency
- Highly secure
- Highly reliable

Office of Innovation



5G Solution

- Wireless
 - Macro
 - Small Cell (indoor and outdoor)
- Mid-band 5G deployments
 - C-Band
 - 2.5GHz
 - CBRS- private network option
- Fixed Wireless
 - Home
 - Enterprise

Fiber Solution

- Wired
 - Middle Mile
 - FTTX
 - Long Haul
 - Datacenters
- FTTX
 - Fiber to the home
 - Fiber to the premise/building
 - Fiber to the Tower/Small Cell

Fiber, Power & Poles are the Foundation for a Smart City



Alliance Membership – 165 Strong & Growing



4RF Limited
 Accelleran
 ADRF Technologies
 Agri-Valley Communications, Inc
 Airspan Networks
 Airtower Networks
 Allen Vanguard Wireless, LLC
 Alpha Wireless
 Amdocs Management Limited
 American Tower Corporation
 Amit Wireless Inc.
 ANS Advanced Network Services, LLC
 Anterix
 Asiateco Technologies, Inc
 Askey Computer Corp.
 Aspire Technology Partners
 AT&T
 ATDI
 Athonet
 Baicells Technologies Co., Ltd.
 Ballast
 Barich, Inc
 Bearcom
 BEC Technologies, Inc
 Betacom
 Black Box
 Blinq Networks
 BlueArcus Technologies
 Boingo Wireless, Inc.
 BTI Wireless
 Cable Television Laboratories Inc

Cambium Networks
 Capgemini America, Inc
 Casa Systems
 CellAntenna Corporation
 Celona, Inc
 Centerline Communications
 Charter Communications
 Ciena
 Cirrus Core Networks, Inc
 Cisco Systems
 Codium Networks
 Comba Telecom, Inc
 Comcast Corporation
 Commscope
 Communication Technology Services, LLC
 COMSovereign Holding Corp
 Connected Devices, Inc
 Connectivity Wireless Solutions
 Contour Networks
 Corning Optical Communications
 Cox Communications
 Cradlepoint
 Crown Castle
 CTIA
 CTL
 DEKRA Testing and Certification, S.A.U.
 Dell Technologies
 Dense Air Limited, LLC
 Digi International
 Digital Global Systems
 Dish Network
 Druid Software

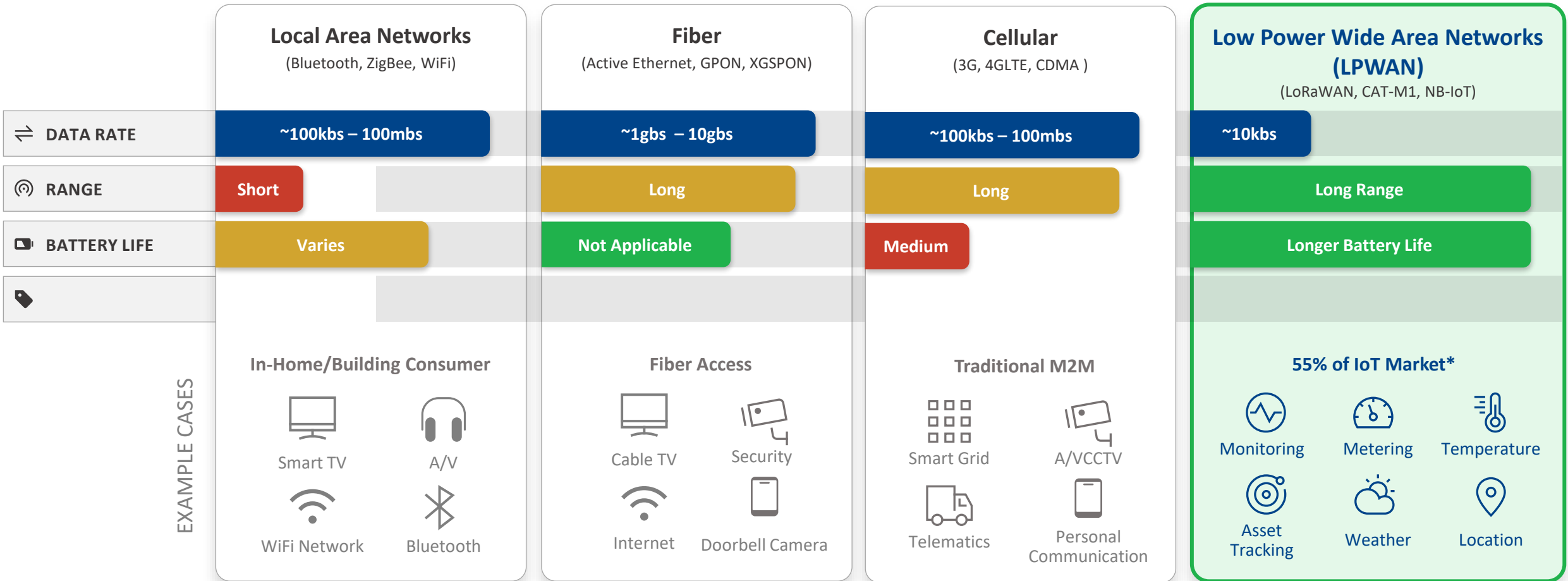
EDX Wireless
 Element Materials Technology
 Washington DC LLC
 Encore Networks
 Ericsson, Inc.
 EUCAST Co., Inc
 ExteNet Systems, Inc.
 Facebook
 Federated Wireless
 Fibocom Wireless USA, Inc
 Fibrolan
 FreedomFi, Inc
 Frequencz
 Frontier Communications
 Fujitsu Network Communications
 Gadgetsplace, LLC
 GE MDS
 Gemtek Technology Co., Ltd
 GenXComm, Inc.
 Geoverse
 Giesecke+Devrient
 Global Technology Associates, LLC (GTA)
 Goodman Telecom
 Google, LLC
 Graybar
 HALO DAS, LLC
 HCL Technologies
 Hewlett Packard Enterprises
 Highway9 Networks, Inc
 Huber + Suhner
 Ibwave
 Imagine Wireless
 Impact Broadband Corporation

Inseego Corp
 Insta Advance Oy
 Intel Corporation
 IOT4NET, Inc
 JACS Solutions
 JMA Wireless
 JPU
 Juniper Networks
 Kajeet
 Keysight Technologies, Inc
 KLA Laboratories, Inc
 Kleos UK Ltd
 Kore Wireless
 LandMark Dividend, LLC
 Mavenir Systems, Inc
 Midcontinent Communications
 Miller Electric Company
 Mobilitie, LLC
 Monogoto, Ltd
 Motorola Solutions
 Multi-Tech Systems, Inc
 Munisite Networks
 Nesten, Inc
 NextGen Global Resources, LLC
 Nokia
 NRTC
 Nsight
 OneLayer
 Palo Alto Networks
 Panasonic
 Parsec Technologies, Inc
 Pavlov Media, Inc
 Pierson Wireless

Pyramid Network Services, LLC
 QuadGen Wireless
 Qualcomm
 Quanta Cloud Technology
 Quantum Wireless
 Qucell
 Qulsar
 Radio Frequency Systems
 Radisys Corporation
 Radtonics, Inc
 Rakuten USA, Inc
 RANlytics
 Ranplan Wireless, LLC
 Redline Communications
 RF Connect
 Samsung Electronics America Inc.
 SBA Communications
 Securus Technologies
 Seowonintech Co., Ltd
 Sequans Communications
 Sercomm USA, Inc
 SGS North America, Inc
 Shared Access
 SNS Telecom & IT
 Socionext America, Inc
 Solid
 Sony Group Corporation
 Sporton International, Inc
 Star Solutions International, Inc
 Sterlite Technologies Limited
 Super Micro Computer, Inc
 SureSite Consulting Group, LLC
 Syniverse Technologies, LLC

Tango Networks
 Teal Communications
 Tecore Government Services, LLC
 Telecommunication Technology Labs, CAICT
 Telit
 Telka, LLC
 Telrad Networks
 Telsasoft
 Terranet Communications, LLC
 Tessco Technologies, Inc
 Texas A & M University
 The New York Library
 The Quilt
 T-Mobile USA
 Transit Wireless
 Trestel, LLC
 TruConnect
 U.S. Cellular
 University of New Mexico
 Valid8.com, Inc
 Vedanta Telecom, LLC
 Vergibility, LLC
 Verizon Communications
 Vertical Bridge Holdings LLC
 View, Inc
 VMware Inc
 Wesco
 Wilson Electronics
 Winncom Technologies
 Wispa (Wireless Internet Service Providers Association)
 XCOM Labs, Inc
 ZenFi Networks
 Zyxel Communications Corporation

IoT Technology Landscape



* IoT Analytics, LPWAN Market Report 2019-2025, published January 2020

OnGo Awards April 2023

Award Winners

Excellence in an Enterprise OnGo Private Network Deployment:

- **Baicells Technologies (with Alef Edge, Cellocity, Druid, LittleBird, Winncom):** Delivering Highly Desirable Tenant Amenities to the MDU Vertical

OnGo in State, Local, and Education (SLED):

- **Federated Wireless (with AWS):** Powering the 5G Innovation Campus of the Future at Cal Poly

Excellence in OnGo Technology Innovation:

- **JMA (with Boingo, Cisco, Dell, DISH, Google, Hughes, Intel):** Flight Line of the Future with OnGo and ORAN at Naval Air Station Whidbey Island

OnGo Neutral Host Architecture/Solution:

- **CTS (with Airspan, Druid):** Neutral Host trial with a leading healthcare provider showcases using OnGo Network to provide cost-effective coverage to the middleprise

Excellence in a WISP OnGo Deployment:

- **Ericsson (with Ohio TT, Winncom):** Ohio TT Expanding Broadband to Rural Communities

Judges' Choice Award:

- **BearCom (with Airspan, Athonet, & BEC):** PLTE for Rent to Musical Festivals

Bridge the Digital Divide & Extend the Smart City Foundation

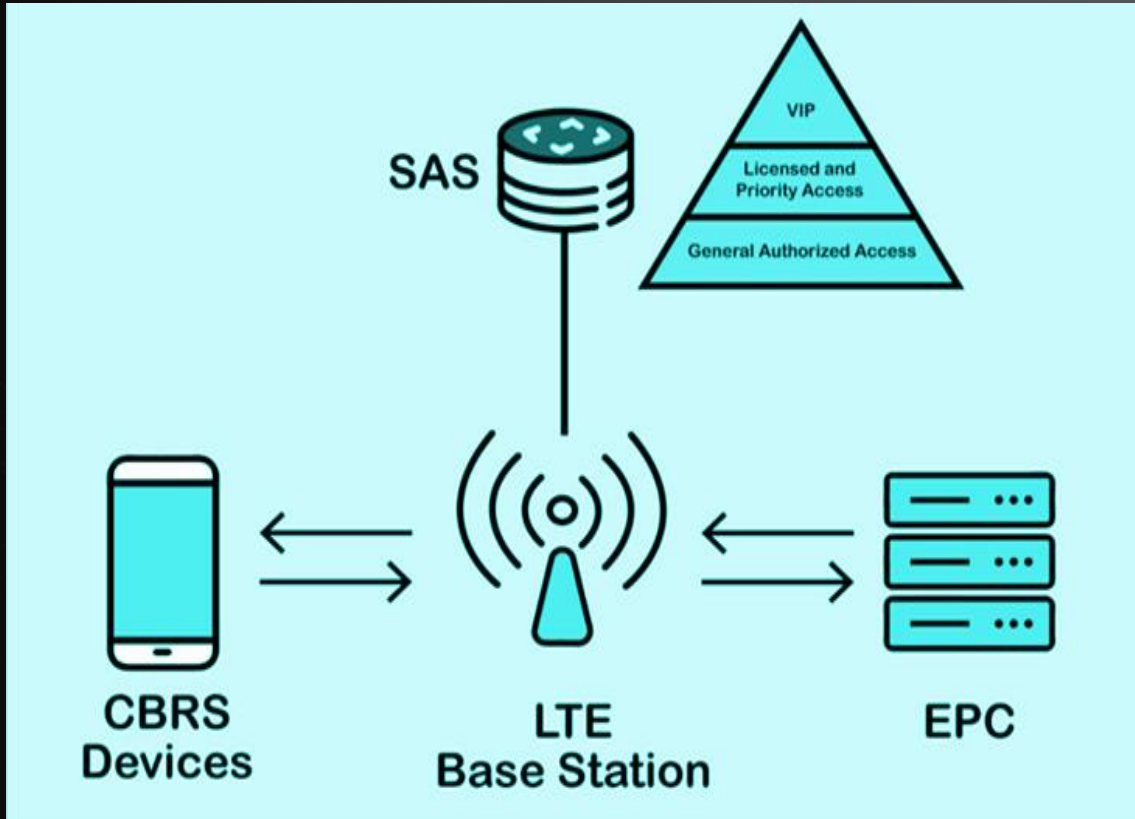
Build a private LTE/5G wireless network broadcast from city and school facilities

Secure Network

Monitors the wireless network, all connected gateways and private LTE enabled devices. Data stays local to the network to ensure control.



What is CBRS & How to Leverage for a Private Network?



- Allows Enterprise to use cellular technology (LTE or 5G) to enable a private network instead of connecting to AT&T/VZW/TMO
- Provides connectivity for enterprise applications using 150 MHz of spectrum in the 3.5GHz range
- SAS coordinates all frequencies to be used to ensure QoS
- SIM/eSIM at device level required for network access
- EPC can have local break out to LAN and provide devices with private IP addresses

CBRS versus Wi-Fi

	CBRS	Wi-Fi
Devices	Handles many	System performance unpredictable as devices added
Inference	Greatly reduces	Prone to interference from signals in most unlicensed bands
Authentication & Encryption	End-to-end SIM based	Requires proprietary / conflicting coordination
Security	Channel monitoring and coordination of spectrum	Poorer security vs LTE/5G
Handover	Controlled between devices managed by standards	Proprietary best effort for roaming
Latency	Consistently Lower	Unpredictable
Radio	Works well in complex environments with many wireless clients/devices	Works well in simple environments with a moderate number of devices

Longmont, CO, USA

City of Longmont, Colorado

- Longmont is a growing community of 100K people ~ 10 miles Northeast of Boulder
- Began as a student broadband project to provide connectivity to 4,000 low-income student locations.
- The City of Longmont and their ISP (Nextlight) saw the possibilities of Private LTE and leveraging it for public security cameras.
- Network is currently at 37 base stations and will continue to expand.
- City planning to extend CBRS coverage across entire city in 2023



Closing the Digital Divide in Shreveport, LA with CBRS

Problem

- 40% of City residents lacked access to Wi-Fi at home
- Limited budget (American Rescue Funds)
- Tight timeline for deployment

Solution

- City contracted Spread Networks, who selected Pollen
- Pollen designed a RAN using CBRS radios on city buildings
- Spread Networks deployed the radios with Pollen support

Universal Digital Access

- Residents check out a CPE (Wi-Fi Hotspot) from the library
- City provides internet backhaul using existing network
- Pollen monitors and operates the Cellular network
- Spread Networks is working with city officials to expand into other underserved areas and improve coverage



Available from Graybar via Omnia Contract Private Cellular Network Connectivity

Rapid Deployment, Single Site & Concept Testing Scenarios

- Large pelican case
 - Cellular Base Station with Antenna (CBRS/EBS)
 - SAS & Radio Cloud control
 - Switching and Routing Hardware
 - Cellular, Satellite or Wired backhaul to Alef core
- Kitted pre-provisioned with the following and Alef (e)SIMs.:
 - CBRS Mobile Point of Sale Devices
 - CBRS Tablet
 - CBRS Router for creating Wi-Fi Hotspot's
 - Up to 25 SIMS/ESIMs
 - Additional Devices Ala Carte including outdoor CBRS Camera with A.I. Functionality



ALL-IN-ONE MOBILE NETWORK-IN-A-CASE



ELIGIBLE AGENCIES FEDERAL COOP PURCHASING

- **Over 98,000 eligible agencies can participate**
 - **Registration is FREE.**
 - **No obligation to use the contract vehicle.**
- **Eligible Agencies Include:**
 - State Agencies, Counties, Cities, Towns and Villages
 - Specials Districts: Water, MUD's, Transportation, Airports
 - Public and Private Higher Education
 - Colleges, Universities, Technical Schools
 - K-12 School Districts, Charter Schools & Other

OMNIA
P A R T N E R S

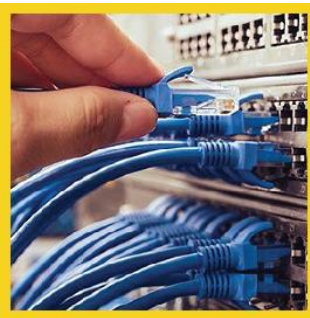
Public Sector


GraybaR[®]

TYPES OF PRODUCTS



Electrical



DataComm



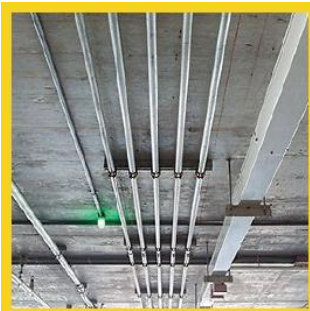
Lighting & Controls



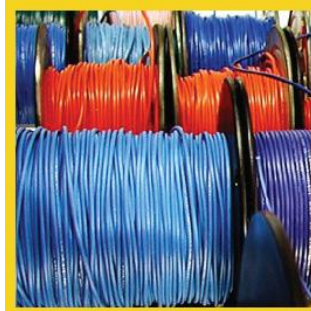
Power Distribution



Industrial Control
& Automation



Conduit, Raceway
& Cable Support



Wire, Cable &
Wiring Devices



Power Protection &
Maintenance Supply

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