

Project OVERCOME:

Innovative Connectivity Solutions in Seven Communities



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Broadband Delivers Opportunities
and Strengthens Communities

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Overview



At least 42 million people do not have adequate internet access to learn and work remotely, or to effectively take advantage of telemedicine in the United States. One out of seven children lack internet access at home, increasing to nearly a third of households with an annual income of less than \$20,000. Black, Hispanic, and Native American households are also disproportionately affected. Solving the digital divide puzzle needs more than just money and requires thinking beyond traditional connectivity solutions.

Managed by US Ignite and funded by the National Science Foundation (NSF) with Schmidt Futures, Project OVERCOME is a unique program that creates an innovative environment for seven communities to test locally accelerated and innovative solutions designed to deliver community internet connectivity within just 12 months.

In March 2021, US Ignite announced the names of the seven communities chosen to deploy connectivity solutions in their communities. The selected communities reflect a mix of density, demographics, income levels, regions of the United States, housing types, local and industry collaborations, and technical approaches.

US Ignite is overseeing deployment efforts, promoting outreach, and working with social scientists to measure the societal impacts of Project OVERCOME on access to health care, education, employment, and skills development. US Ignite is also documenting the challenges and lessons learned from the project in an effort to inform national broadband strategy and inspire other communities to adopt innovative, community-driven approaches to bridging the digital divide. This report features the seven Project OVERCOME communities and shines a light on the innovative solutions these communities are deploying in pursuit of digital equity.

| | <u>BLUE RIVER, OREGON</u> | <u>BUFFALO, NEW YORK</u> | <u>CLEVELAND, OHIO</u> | <u>CLINTON CTY, MISSOURI</u> | <u>DETROIT, MICHIGAN</u> | <u>LOÍZA, PUERTO RICO</u> | <u>YONKERS, NEW YORK</u> |
|-----------------------------|---|---|--|--|--|---|--|
| DEPLOYMENT LEAD | ONWARD EUGENE | UNIVERSITY AT BUFFALO | DIGITALC | UNIVERSITY OF MISSOURI | ALLIED MEDIA | LIBRARIES WITHOUT BORDERS | WESTCHESTER COUNTY ASSOCIATION |
| TECHNOLOGY | CBRS | CBRS | FIBER | RF OVER FIBER | FIBER AND FIXED WIRELESS | HOTSPOTS | CBRS |
| DEMOGRAPHIC SETTING | RURAL | URBAN | URBAN | RURAL | URBAN | URBAN | URBAN |
| IMPACT | 95 HOT SPOTS | 150 HOUSEHOLDS | 225 HOUSEHOLDS | 50 HOUSEHOLDS | 100 HOUSEHOLDS | 3 COMMUNITY CENTERS | 250 HOUSEHOLDS |
| MAJORITY RACE SERVED | UNDEFINED | BLACK AND BROWN | BLACK | UNDEFINED | BLACK AND BROWN | BLACK AND BROWN | BROWN |
| HOUSING TYPE | DETACHED HOUSING AND SCHOOLS | DETACHED HOUSING AND MULTIPLE DWELLING UNITS (MDUs) | MDUs | DETACHED HOUSING | DETACHED HOUSING | DETACHED HOUSING AND COMMUNITY CENTERS | MDUs |

Source: US Ignite

For more information:

[US Ignite - Project OVERCOME](#)

[FCC Acting Chair Jessica Rosenworcel Remarks on Project OVERCOME](#)

[Project OVERCOME Press Conference](#)

[Podcast: The Divide – How ‘Project Overcome’ is tackling access in Clinton County, Missouri](#)

[For additional Project OVERCOME news, sign up for the US Ignite Newsletter](#)

Building Internet Resilience from the Ashes of the Holiday Farm Fire

Blue River, Oregon



Blue River, the hub of the McKenzie River Valley in rural Lane County, Oregon, is no stranger to natural disasters. In September 2020, this former mining and timber town burned to the ground in the Holiday Farm fire. However, despite the challenges, Blue River's story is one of resilience. It's the story of a town's desire to not merely survive but thrive. Blue River is building back its internet infrastructure in a way that will make its community stronger, safer, and better connected than ever.

Onward Eugene, a 501(c)3 nonprofit with expertise in creating inclusive economic prosperity, believes that communities thrive when all members are valued and engaged in solving the challenges of tomorrow. These values are shared by the **McKenzie School District** and a

cutting-edge private-sector technology company, **Elevate Technology Group**, the local organizations behind Project OVERCOME. Their goal is to expand internet connectivity in the McKenzie River Valley and help revitalize the Blue River community.

The entire Blue River area has historically been served by a single fiber route that is attached to wood poles, connecting this rural community to the nearest city and the internet. This area fiber connection has proved to be vulnerable to outages during frequent natural disasters. Project OVERCOME is funding a resilient and permanent second internet backhaul route into the McKenzie Valley based on wireless microwave technology. This backhaul connection will be extended into the valley with the construction of a new solar-powered terrestrial communications tower. The new tower will also work as a point of distribution for a new education-focused cellular wireless network pilot. That pilot will use Citizens Broadband Radio Service (CBRS) technology to reach unserved and underserved populations for a fraction of the cost of typical broadband infrastructure "rebuild" projects. Project OVERCOME is one of the first to use CBRS in the state of Oregon. This infrastructure investment will make it easier for additional private-sector internet providers to service the region, creating market competition.

This OVERCOME project is shaped and supported by a half dozen key community partners. Community members are apprised of the project's progress through [traditional media](#) and social media coverage, as well as via in-person milestone events. Moreover, the team launched a survey to identify households that would benefit most from Project OVERCOME.

The project is led by an exceptional team with representation from Onward Eugene, the McKenzie School District, and Elevate Technology Group. All of these partners have hands-on experience and perspectives on closing the digital divide.

The team has already identified a plan to expand the network in the fire-affected community. Onward Eugene is now actively fundraising for a fiber-to-the-home project and has already identified \$155,000 of the necessary \$200,000 needed for the expansion.

For more information:

[Onward Eugene wins major grant to improve McKenzie Valley internet access](#)

[Project OVERCOME brings Olympic inspiration to Oregon and the world](#)

[Connecting after loss: How Blue River is rebuilding internet after fires](#)

[Wildfire recovery: Olympic athletes, fans aid McKenzie River Valley](#)

CBRS Deployment in the Historic Fruit Belt Neighborhood

Buffalo, New York



The Fruit Belt encompasses a 200-year-old community rich in vegetation and culture on the east side of Buffalo. Fruit Belt residents are longtime inhabitants of the area, with families averaging 50 years in their homes. Through a strong sense of community and self-sufficiency, the region continues to grow and build strong institutions dedicated to communal support and preservation of cultural heritage. However, despite its historic and cultural significance, the Fruit Belt struggles with access to reliable high-speed internet.

The Project OVERCOME pilot in Buffalo will provide equitable broadband access, enabling community members to engage with educational, telehealth, and government services. These services have been unattainable due to high internet

costs and digital redlining. As part of the project, four Long-Term Evolution (LTE) antennas are being installed on top of the Buffalo General Medical Center (BGMC). These antennas will broadcast signals to the Fruit Belt using the newly available Citizens Broadband Radio Service (CBRS) spectrum. Customer premise equipment (CPEs) and Wi-Fi access points will be installed at participants' houses to catch the LTE signal and create a Wi-Fi network for home internet access. Through the installation of the LTE antennas, up to 140 households are projected to gain broadband service, with potentially hundreds more coming online in the near future.

The University at Buffalo, Mission: Ignite, and Community Tech NY are leading this deployment guided by the vision of (1) providing high-speed internet access as an essential service that is community-rooted, planned, and resourced; (2) creating sustainable programming; and (3) securing additional funding to develop an [asset-based approach model](#) for a community-led internet platform. Via Project OVERCOME, the team wants to raise awareness among community stakeholders that mature technologies already exist and can be valid solutions for improving digital inequities. After the deployment, the team wants to work with the City of Buffalo to replicate this model in other areas of the city.

For more information:

[Rep Higgins Announces \\$300,000 Grant to the University at Buffalo & Mission Ignite for Expansion of Broadband in Buffalo](#)

[Grant to support expansion of high-speed internet access in Buffalo's Fruit Belt](#)

[Rep Higgins announces \\$300K for Fruit Belt broadband project](#)

[Project to expand Internet service in Fruit Belt wins \\$300,000 grant](#)

[Rep Higgins: \\$300,000 grant to UB & Mission:Ignite for expansion of broadband in Buffalo](#)

Project Empower: Cleveland's Innovative Approach to Bridging the Digital Divide

Cleveland, Ohio



Located on the shores of Lake Erie, Cleveland suffers from the highest rates of child poverty and the lowest rates of broadband access among the large cities in the United States. Faced with that reality, a Cleveland-based nonprofit, **DigitalC**, dedicated itself to bringing digital equity to the community's residents by forming partnerships to (1) increase the availability of affordable high-speed internet service, (2) offer digital training and devices, and (3) provide inclusive shared space for community engagement and innovation.

Through an innovative technology approach, DigitalC delivers broadband

service to residents across the city. Depending on local topography, tree coverage, access to vertical infrastructure, and other factors affecting wireless signal strength, DigitalC designs and deploys customized fixed-wireless network solutions leveraging existing infrastructure. With National Science Foundation (NSF) and Project OVERCOME support, DigitalC will serve 225 new households by deploying millimeter wave (mmWave) technology with wireless equipment from **Siklu** installed on rooftops to create a mesh network.

Deploying new infrastructure—and leveraging existing infrastructure—to provide affordable and reliable broadband is the foundation of an approach to bridge the digital divide, but the connection to the internet is not enough on its own. DigitalC recognizes the importance of offering residents access to digital training and internet-connected devices. In addition to establishing connectivity through a multitiered technology approach, the organization collaborates with trusted community partners to provide technical assistance and support for devices.

Thanks to a team of highly experienced and mission-driven individuals in technology, innovation, fundraising, advocacy, community engagement, marketing, sales, and customer care, DigitalC nurtures valuable relationships with local organizations and leaders in city government. The team works to create a better Cleveland and welcomes the opportunity to share its successes and challenges to help communities across the nation bridge the digital divide.

For more information:

[Project OVERCOME Team Lands a \\$20M Investment](#)

[Engaging the Community](#)

[America Strong: Nonprofit works to close the digital divide in Cleveland schools](#)

A Systems Approach to Scaling Rural Co-op Efforts to Expand the Fiber Edge

Clinton County, Missouri



In the late 1800s, people knew Turney, Missouri, as a major railroad stop. Today, little retail or industry remains in Turney (pop. 148), with Kansas City just a 30-minute drive away.

Left behind by large internet service providers, the residents of Turney are gaining access to improved broadband access through the Project OVERCOME effort. Local residents anticipate an expansion of opportunities

for entrepreneurship to boost the local rural economy, and improvements in broadband access will increase opportunities for remote work, enabling Turney families to live, earn, and learn in Clinton County.

The team assembled to execute this vision includes the [Missouri University of Science & Technology](#), [University of Missouri Extension](#), [Worcester Polytechnic Institute](#), [United Electric Cooperative/United Fiber](#), and [Maximize NWMO](#). Together this coalition possesses a blend of experience developing innovative wireless technologies, wireless systems deployment, and community engagement.

The deployment in Turney will combine multiple wireless technologies into a single architecture using Radio Frequency (RF)-over-Fiber technology. The team optimizes bandwidth allocation by using machine learning in an intelligent router. It stitches low-cost, low-bandwidth hardware together to simulate a high-bandwidth device and reduce expenditures for overall deployment. As a model for other rural communities, the technology will build on an open-source platform that allows for replication elsewhere. The Turney team will also share lessons learned and best practices from the project to help expand the fiber edge and bring greater connectivity to other small, rural communities.

The pilot project in Missouri takes a creative technical approach to connecting the unconnected. Still, the project team understands that gaining the participation and trust of Turney residents will be a more critical factor in its success. Almost half of the town [attended an ice cream social](#) to learn

more about the project ahead of network deployment. During the event this spring, residents met with project organizers and asked questions about the project. Embedded in an existing regional community engagement effort led by Maximize NWMO, the project leverages community resources. It builds additional partnerships with local organizations and social institutions to connect 50 households in Turney.

For more information:

[Broadband Project OVERCOME](#)

[Maximize NWMO](#)

[Podcast: The Divide – How “Project Overcome” is tackling access in Clinton County, Missouri](#)

[Engaging the Community](#)

[New Broadband Technology Launched in Turney, MO](#)

Equitable Internet Initiative to Accelerate Outreach, Training, and Wireless Broadband Internet Sharing

Detroit, Michigan



Amid significant poverty and a lack of robust infrastructure, 40 percent of Detroit residents struggle to access reliable broadband service. Fortunately, organizations like the [Detroit Community Technology Project](#) (DCTP) exist to challenge the status quo.

DCTP's mission is "to use and create technology rooted in community needs that strengthens neighbors' connection to each other, and to the planet." Through Project OVERCOME, DCTP and its partners at Grace in Action Collectives are targeting the digital divide in one southwest Detroit neighborhood, an area that is home to many low-income immigrants and Black and Brown families. The DCTP team is bringing community-owned communications infrastructure to the region and working to ensure that improved internet access leads to better health outcomes, greater job readiness, and overall economic growth.

With a goal to provide reliable, affordable broadband service combined with high levels of customer support, DCTP has partnered with technology company [123NET](#), which will deploy fiber into the Detroit neighborhood before hanging aerial fiber lines directly to residential

homes. Customer installations will be completed by trusted and trained local residents, who also are building a new fixed wireless network by connecting additional homes and businesses with point-to-point radios and adding outdoor public hotspots.

The idea of using local installers for broadband deployments comes from the [Digital Stewards Program](#). In 2012, Allied Media Projects (AMP) partnered with the Open Technology Institute of the New America Foundation to create the Digital Stewards Program. Digital Stewards are community residents who act as installers, community organizers, teachers, problem solvers, and advocates. As part of Project OVERCOME, Grace in Action's Digital Stewards will encourage internet adoption by canvassing the local neighborhood to share information, answer questions, and

collect feedback. They will prioritize both one-on-one meetings and large community gatherings, aiming to build community trust through direct connections with neighbors, business owners, and church and school administrators.

The Detroit fiber pilot marks phase one of a community fiber infrastructure initiative envisioned by DCTP for scaling the Digital Stewards curriculum. The lessons learned in the Project OVERCOME effort will inform city- and statewide infrastructure funding and policy and will highlight the impact and expertise of community voices in large-scale deployments of emerging technology.

For more information:

[DCTP Launches the Equitable Internet Initiative](#)

[Equitable Internet Initiative Press Kit](#)

De Puente A Puente: Expanding Broadband Access in Loíza

Loíza, Puerto Rico



Located on the northeastern coast of Puerto Rico, Loíza is one of the most culturally rich municipalities on the island. Known as the “Capital of Traditions,” the area gave birth to many African-influenced traditions that are now synonymous with Puerto Rican culture. As home to the largest population of Black residents on the island, Loíza has a rich cultural heritage that is threatened by high unemployment, extreme poverty, and violence. In fact, Loíza’s unemployment rate is triple the national average, and nearly half of all residents live below the poverty line.

To deliver [De Puente A Puente](#) (From Bridge to Bridge), Libraries Without Borders US (LWB US)—along with project partners Link Puerto Rico ([Link PR](#)), the Municipality of Loíza, Information Technology Disaster Resource Center ([ITDRC](#)), Cultura Activa, PAYE (Piñones Aprende Y Emprende), and other local organizations and community leaders—is providing broadband service in three neighborhoods of Loíza. In each of these neighborhoods—Sector La 23 y Las Gardenias, Piñones, and Tocones—LWB US is outfitting community centers with Wi-Fi using 4G and 5G cellular hotspots to connect residents directly to digital tools as well as health and digital literacy training.

Libraries Without Borders US galvanizes, engages, and empowers the local community in Puerto Rico. By organizing events that enable residents of all ages to participate, such as designated days to clean up and paint their community centers, LWB US ensures that [residents are integral to revitalization efforts](#). As a result of this collaboration, the project expects to provide 90 households with reliable broadband access by March 2022. Using a “train the trainer” model, the project will also equip community leaders with digital skills and training designed to expand their reach and amplify their ability to promote health and well-being across Loíza.

Although the COVID-19 pandemic, relentless hurricanes, and other natural disasters exacerbated internet connectivity issues, De Puente a Puente leverages National Science Foundation (NSF)

support to address protracted connectivity challenges in Loíza. Through this pilot, the team will gain valuable insights and data that will allow them to design long-term, sustainable broadband solutions for Loíza residents.

For more information:

[De Puente A Puente](#)

[Engaging the Community](#)

The Y-Zone: A Digital Opportunity Zone Offering Free Internet Access

Yonkers, New York



Located along the Hudson River, Yonkers is the gateway between New York City and the Hudson Valley. Through Project OVERCOME, the leaders of the digital opportunity zone known as [Yonkers Zone, or Y-Zone](#), will provide free internet access to approximately 250 to 350 households in downtown Yonkers using spectrum in the Citizens Broadband Radio Service (CBRS) frequency band. The team is composed of leaders from the [Westchester County Association](#), [City of Yonkers](#), [STEM Alliance](#), [Yonkers Partners in Education \(YPIE\)](#), [Fordham University](#), and [Westhab](#).

Three core principles guide the Yonkers team:

- 1) establishing a digital equity ecosystem driven by a coalition of committed local stakeholders that includes residents and youth,
- 2) achieving widespread adoption through community engagement, and
- 3) advancing digital fluency by providing devices and tech education with connectivity.

The Y-Zone is identifying and eliminating barriers to digital adoption, including service cost, lack of device ownership, lack of tech education, and lack of necessary tech support. Using the shared Federal Communications Commission (FCC) spectrum in the CBRS 3.5 GHz band, Yonkers is deploying wide-area private Long-Term Evolution (LTE) wireless networks, facilitating community-based, private network services.

The Y-Zone initiative pairs technology and grassroots implementation with a goal to achieve broad community benefits. Collaborating with community partners such as the YMCA, [Neighbors Link](#), [YPIE](#), [Westhab](#), and local schools, the team can deliver training and distribute devices to the community. Moreover, Y-Zone's relationships with municipal, business, and nonprofit leaders are helping to drive community engagement and participation to ensure the sustainability of the digital opportunity zone. The team is deploying the [YPAR model](#) (youth-led participatory action research) to evaluate the impact of connecting the unconnected through Project OVERCOME.

Partners on this Yonkers-based project hope to replicate and expand the Y-Zone model in other parts of Westchester County, and the team has already formed a broad-based stakeholder group to work on the sustainability and expansion efforts of the project.

For more information:

[US Ignite Selects Westchester County Association to Lead a Community Broadband Pilot in Yonkers as Part of Project OVERCOME](#)

Acknowledgments:

Project OVERCOME is delivering broadband services to the unserved and underserved populations in seven communities. The project is led by US Ignite and made possible with financial support from the National Science Foundation and Schmidt Futures. This report outlines the novel technology solutions that the seven OVERCOME teams are deploying in their communities to connect the unconnected. We extend our sincere thanks to the contributing authors from the OVERCOME teams.

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