

**Broadband Everywhere
for Jobs and Prosperity**

Partnership for a Connected Illinois

broadbandillinois.org

**Five-Year Report
2010 - 2014**



Corporate Information

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Our Mission is

Broadband Everywhere for Jobs and Prosperity

Dear Friends:

Our mission is to uplift the state of Illinois with broadband everywhere for jobs and prosperity.

As the American Recovery and Reinvestment Act (ARRA) broadband stimulus era comes to an end, it is appropriate to review our state’s broadband accomplishments during this five-year period, 2010-2014.

The core of this report is the 16 outcomes listed to the right.

It is a truism that “economic development is a team sport.” Thus, our team wishes to thank:

- **The National Telecommunications and Information Administration (NTIA)** – For \$6.5 million of funding to PCI for 2010-2014.
- **Governor Pat Quinn** – For being the Illinois broadband sponsor.
- **Senator Dick Durbin** – For being the federal sponsor for broadband in Illinois.
- **The Illinois General Assembly** – For enacting and supporting the Illinois High-Speed Internet and Information Act, 2007 and providing the state match for federal funding.
- **The Illinois Department of Commerce and Economic Opportunity (DCEO)** – For being PCI’s state agency sponsor.
- **Service Providers and Business Partners** – For submitting inputs to PCI for the Illinois and National Broadband Maps.
- **The PCI Board of Directors** – For overseeing PCI.

The path forward is shown in nine items on page 13 of this report.

Yours with appreciation,
Phil Halstead
 J. Phillip Halstead, Ph.D.



This picture shows executive director Phil Halstead in PCI’s downtown Springfield office. The historic Illinois Old Capitol is in the background. PCI also has a Chicago office that is located in the 1871 digital media accelerator at the Chicago Merchandise Mart.

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About PCI

<p>Who we are</p> <p>We are the Partnership for a Connected Illinois (PCI). We work with public and private entities to create a statewide environment amenable to the universal deployment and adoption of high-speed Internet services and information technology. PCI is a 501(c)(3) nonprofit corporation.</p>	<p>Our vision</p> <p>Our vision is to uplift our great state of Illinois with jobs and prosperity with “broadband everywhere.” The goal is to foster high-speed Internet connectivity for schools, hospitals, government, public safety, citizens and business.</p>	<p>Our mission</p> <p>Our mission includes five areas: (1) GIS center, (2) broadband public information center, (3) economic development support, (4) Broadband Deployment Council staffing and (5) broadband evangelism and strategic planning.</p>
<p>1,052 direct jobs created</p>	<p>38,878 new broadband subscribers connected</p>	<p>3,593 miles of fiber installed</p>
<p>Value proposition</p> <p>The desired result is for our state to be globally competitive in retaining, growing and attracting good jobs for our citizens.</p>	<p>How we do it</p> <p>We support “broadband everywhere for jobs and prosperity” with: (1) mapping and data services, (2) outreach and leadership to communities, (3) research to facilitate adoption and use, (4) demonstration projects and (5) conferences and meetings.</p>	<p>How we got here</p> <p>With the election of President Obama in 2008, the launch of the ARRA stimulus initiative in 2009 and the ascension of Pat Quinn to Governor, PCI was organized and helped mobilize our state to compete for, win and then implement \$305 million in ARRA broadband stimulus (including state and private investment).</p>
<p>1,342 community anchor institutions connected</p>	<p>4,295 computers distributed</p>	<p>25,650 received computer training</p>

All figures from Illinois Broadband Opportunity Partnership (IBOP) report to the Governor, October, 2014.

Five-Year Outcomes

INTRODUCTION

This five-year report covers 2010-2014. It includes both PCI and statewide outcomes from the federal American Recovery and Reinvestment Act (ARRA) broadband stimulus era. During this time \$7.2 billion was competed out to the 50 states and U.S. Territories.

Here is a concise report of our state's outcomes:

OUTCOME 1: Key Metrics

According to PCI's Illinois mapping and data center:

70% of Households Have Adopted Broadband –

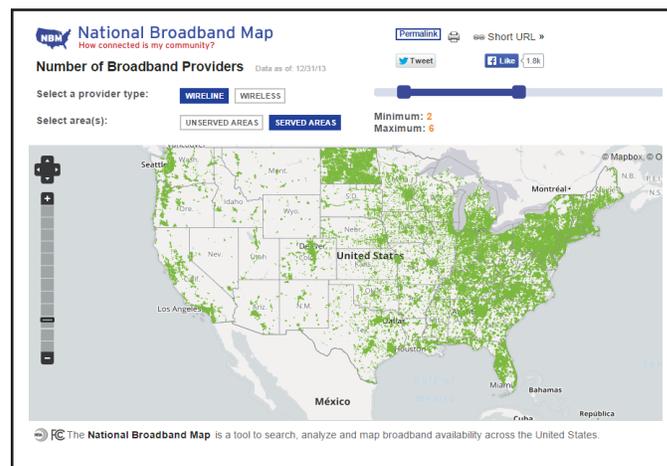
- 99.75% of households have access to high-speed Internet (including rural areas).
- 88.6% of households may subscribe to 100 megabits per second download speed or greater.
- 94% of households are within one mile or less of existing fiber optic lines.

30% of Househlds Have Not Adopted Broadband –

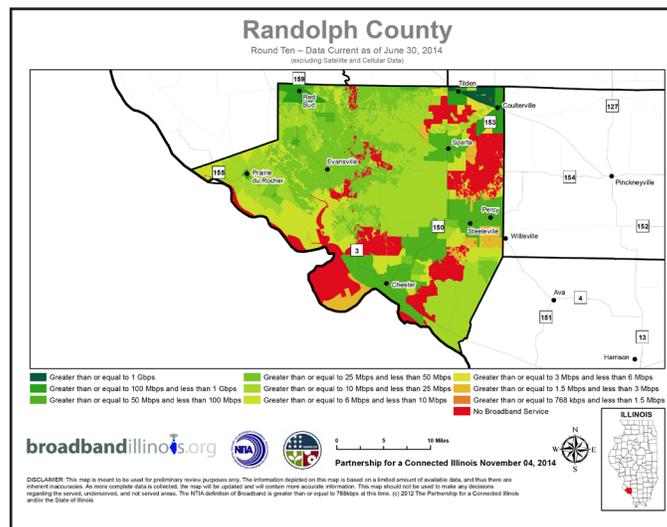
- See Outcome 15 on page 12 for reasons why.

OUTCOME 2: Illinois and National Broadband Maps

On October 1, 2014, the tenth and final Illinois data submission was made by PCI to the NTIA. This completes the inputs for the Illinois Broadband Map. This data will be part of the National Broadband Map (<http://www.broadbandmap.gov/>). Over the five-years 2010-2014, PCI's GIS team was in regular contact with about 200 service providers who provided inputs to the Illinois and National Broadband Maps. These data inputs allowed PCI to build an interactive web mapping tool to show broadband availability by speed, technology and carrier across the state.

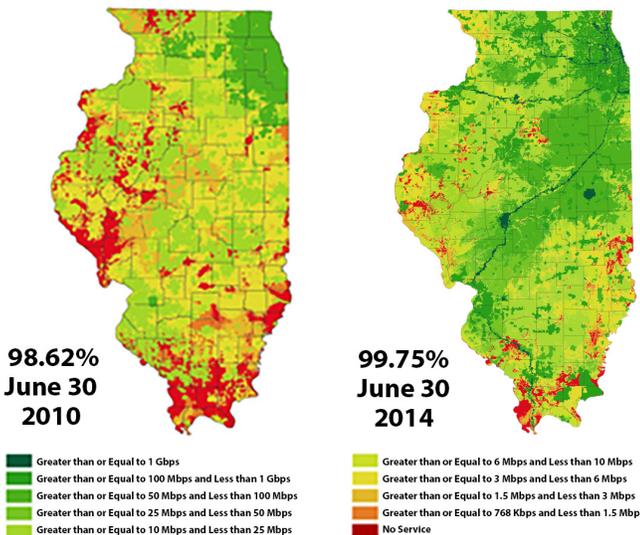


National Broadband Map



Illinois County Map

Shrinking Red = 99.75% Access to High-Speed Internet

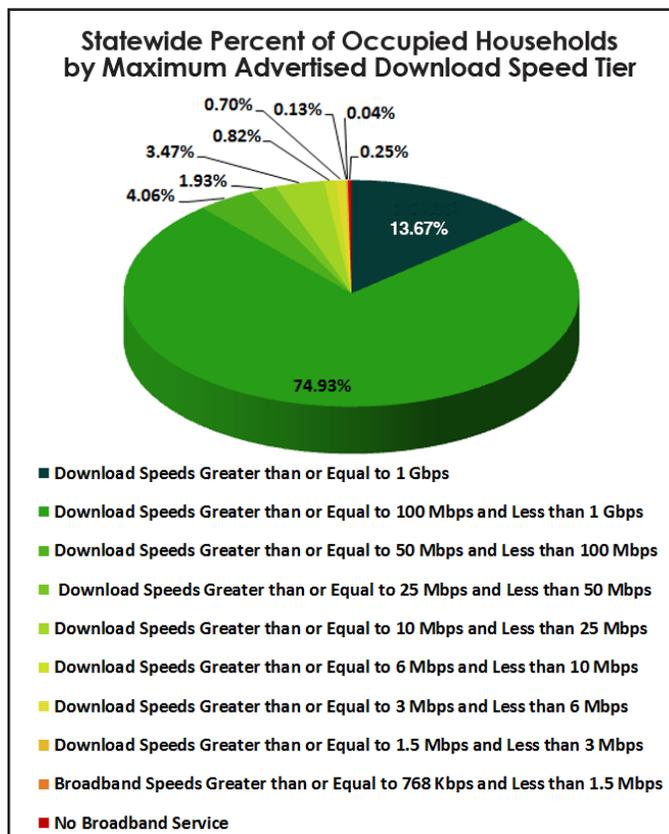


Illinois Broadband Map

OUTCOME 3: Geographic Information System (GIS) Center

About 63% of NTIA's \$6.5 million five-year award to PCI was used for the GIS mapping center. The GIS center's services include:

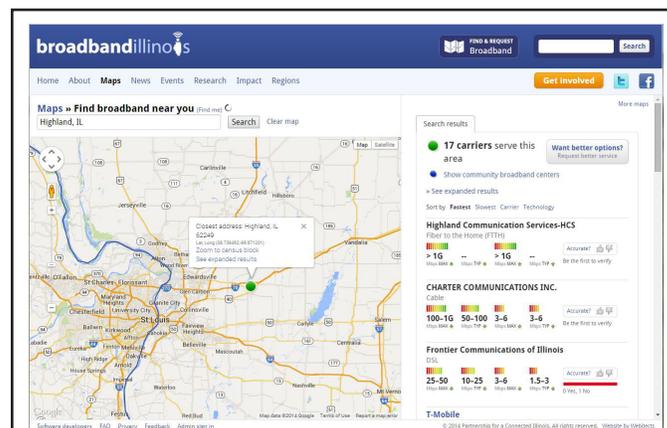
- **Service Provider Data Collection** – PCI has relationships with and received data inputs from about 200 telecommunications service providers.
- **Illinois and National Broadband Maps** – The first-ever Illinois and National Broadband Maps were constructed with data from service providers.
- **Census Block-Level Maps** – The GIS team creates census block maps of broadband speed and availability.
- **Visualization, Analysis and Custom Cartography** – PCI's GIS specialists can analyze the data to assist in public and private decision-making.



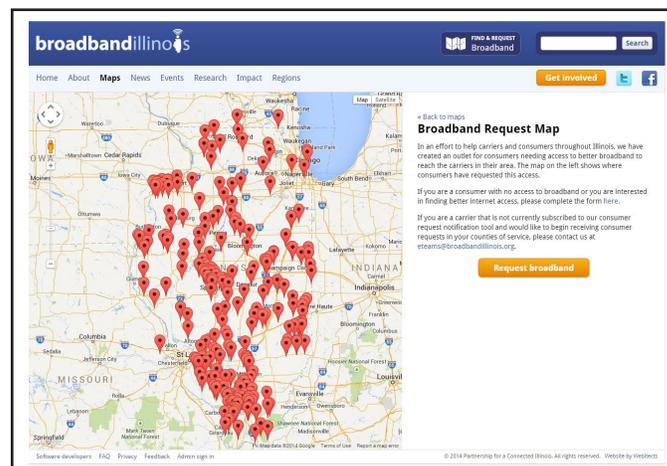
An example of PCI data analysis.

OUTCOME 4: "Find" and "Request" Broadband Tools

The "Find" and "Request" broadband tools at www.broadbandillinois.org are used about 10,000 times per year. PCI's data helps users get service and providers find customers. The "Find" broadband tool helps users learn about availability, speeds and community centers near them. The "Request" broadband tool permits a user who desires service to send an alert to all broadband providers who have service in that county. Providers are then able to identify clusters of demand and work out economic methods to reach new customers.



"Find" Broadband Map



"Request" Broadband Map

FACTOID

PCI's "Find" and "Request" broadband tools are used over 10,000 times per year.

OUTCOME 5: Website www.broadbandillinois.org

PCI's website is the "go to" place for broadband information.

The website includes:

- **Maps** – The website provides one-stop access to these broadband maps:
 - State
 - County
 - Carrier
- **Information** – The website provides information on "all things broadband" to include:
 - News
 - Events
 - Research
 - Funding Sources



PCI's website contains maps and information and is the "go to" place for "all things broadband."

VISIT PCI'S WEBSITE at www.broadbandillinois.org

FACTOID

PCI's website had 35,000 unique visitors in 2014 who viewed 150,000 pages.

OUTCOME 6: \$305 Million Investment in Illinois Broadband Opportunity Partnership (IBOP)

Illinois competed for, won and successfully implemented over \$305 million for ten IBOP projects. The ten projects included: seven infrastructure projects, one public computing center, one broadband adoption program and one digital learning program for senior citizens. The success of the ARRA stimulus is reflected in the summary outcomes of the ten IBOP projects listed below.

With over \$305 million of new broadband infrastructure and programs in place, Illinois is now ranked 27th in the nation relative to high-speed Internet availability. There are very few spaces left – even in rural areas – where some level of broadband is not available.

Ten IBOP Projects	
Name	Total Investment (in Millions)
Illinois Century Network	\$ 96.0
Northern Illinois University iFiber	68.5
Clearwave Communications	53.9
Urbana-Champaign Big Broadband (UC2B)	29.2
DeKalb Advancement of Technology Authority (DATA)	14.4
City of Chicago Public Computing Centers	11.5
City of Chicago Sustainable Broadband Adoption	8.8
Convergence	8.8
Shawnee Communications	8.6
Connected Living Digital Literacy Training for Senior Citizens	5.9
Total	\$305.6

Source: Illinois Broadband Opportunity Partnership (IBOP) Report to the Governor, October, 2014

Federal, State and Other Investments (in Millions)	
Federal	\$207.1
State	58.3
Other	40.2
Total	\$305.6

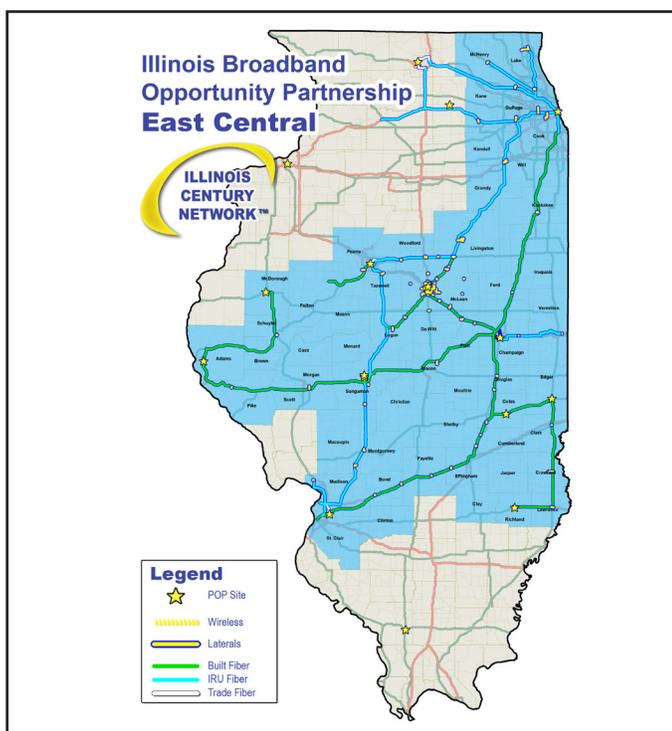
Project Results	
New Broadband Subscribers Connected	36,878
Miles of Conduit Buried	2,396
Miles of Fiber Blown	3,593
Community Anchor Institutions Connected	1,342
Public Computer Workstations Created	2,494
Computers Distributed	4,295
Outreach Training Participants	25,650
Direct Jobs Created at Peak	1,052

OUTCOME 7: \$96 Million Upgrade to Illinois Century Network (ICN)

The Illinois Century Network added 1,800 miles of fiber optic cable, increased its available speeds and connected over 400 community anchor institutions as the result of a \$96 million ARRA investment with other state and private funding. ICN connects schools, colleges, universities, healthcare, public safety and government institutions throughout the state.



In July of 2014, Governor Pat Quinn announced \$96 million in ICN upgrades.



ICN's Network Coverage Map

OUTCOME 8: Jobs, Economic Output and Sector Development

Broadband infrastructure investment in Illinois sustains 36,000 jobs nationwide. It increases annual output by more than \$2 billion per year. This new broadband infrastructure is a key “tool in the toolbox” of DCEO to help attract 75,000 new jobs over the next five years.

The \$57,800 targeted average wage of these new jobs is 10% higher than the state average. The level of high-speed Internet connectivity in Illinois, which is second in the Midwest after Minnesota, enables:



- **Entrepreneurs and Small Home-Based Businesses** – To engage in e-commerce.
- **Schools and Educational Institutions** – To have online instruction, testing and content.
- **Healthcare Providers** – To use telehealth and telemedicine applications and electronic medical records.
- **Government Agencies** – To provide online services including employment services, motor vehicle transactions and government services at the local, state and federal levels.
- **Public Safety** – To provide fast, efficient and effective responsiveness to citizens for law enforcement and the full range of first responder services needed for a safe and secure state and nation.
- **Rural and Agriculture** – To have access to the same business, government and Internet-based tools and services as citizens who live in more highly populated areas.

OUTCOME 9: Broadband Innovation Projects

In 2012-2013, PCI conducted a statewide broadband innovation competition that mobilized 113 applications and resulted in 14 awards totaling \$500,000. The \$500,000 in awards leveraged an additional \$2 million of contributions by the awardees and resulted in Internet applications in healthcare, economic development, education, libraries and local services.



East Central Illinois Development Corporation



SeniorLink Computer Classes in Belleville



Integrated Therapy Services in Newton



Fishin' Buddies in Chicago



McDonough Telephone Coop. in Macomb/Colchester



Escape Locally website in Southern Illinois



Warren County Virtual Museum in Monmouth



Tri-County Regional Planning Commission in Peoria



Six Mile Regional Library District in Granite City



Carlinville High School Vets Classroom Project



21st Century Youth Project in Chicago



Creating Entrepreneurial Opportunities Classes



Family Christian Health Center in Chicago



PrairieSpark Business Hub at Eastern Illinois University

OUTCOME 10: Broadband Deployment Council (BDC)

Founded in 2005 by then Lieutenant Governor Quinn, the BDC works to improve high-speed Internet availability to citizens and businesses. Comprised of key government officials as well as governor-appointed broadband enthusiasts from around the state, the BDC has played a key role in our state's success in competing for, winning and successfully implementing \$305 million in ARRA broadband infrastructure awards.



Most recently, the BDC, with PCI staff support, is using five work groups to further expand high-speed Internet connectivity:

BDC Work Groups:

- **Public-Private Partnerships** – To stimulate partnerships statewide.
- **Illinois Broadband Plan** – To develop a state broadband plan.
- **Illinois Projects** – To assess broadband infrastructure gaps and suggest strategies to bridge the gaps.
- **Open Issues** – To identify and recommend policy solutions to the General Assembly relative to increasing high-speed Internet availability, adoption and use.
- **Illinois FirstNet** – To coordinate the Illinois state network component of the federal FirstNet initiative to connect all elements of public safety.

“The BDC has been instrumental in moving the State of Illinois into a competitive broadband technology region.”

-Herb Kuryliw,
Network and Technology Architect,
Northern Illinois University

OUTCOME 11: Illinois Gigabit Communities Challenge

Announced in Governor Quinn’s 2012 State of the State Address, the Illinois Gigabit Communities Challenge resulted in 40 applications to connect 1,000 or more end users to gigabit broadband. Four awards totaling \$5.5 million were made with PCI’s assistance.

2012	
\$2.0 million	Gigabit Squared (with Cook County, City of Chicago and the University of Chicago)
\$1.0 million	On-Light Aurora (City of Aurora)
2013	
\$1.5 million	Frontier Communications (with City of Carbondale and Southern Illinois University)
\$1.0 million	City of Evanston

Illinois Gigabit Challenge awards totaled \$5.5 million.



Fiber installation in Carbondale.

Photo by Steve Jahnke

OUTCOME 12: Leadership and Outreach to Regions

About 37% of NTIA’s \$6.5 million five-year grant to PCI was used to fund regional eTeams and capacity building. The outcomes include:

- **Outreach** – Reaching out to 102 counties, ten DCEO regions and 12.8 million citizens.
- **Infrastructure** – Supporting the implementation of \$305 million of new broadband infrastructure.
- **Sectors** – Supporting education, healthcare, public safety, agriculture, rural and under-served populations.
- **Innovation** – Stimulating 113 innovation grant applications that resulted in 14 awards totaling \$500,000.
- **Gigabit Capacity** – Mobilizing 40 Gigabit Challenge grant applications that resulted in four awards totaling \$5.5 million.
- **Digital Divide** – Increasing the number of applications for Digital Divide Grants by 153.



Chicagoland Director Laura Lane leads a panel at the Technology Innovation Summit in Chicago.

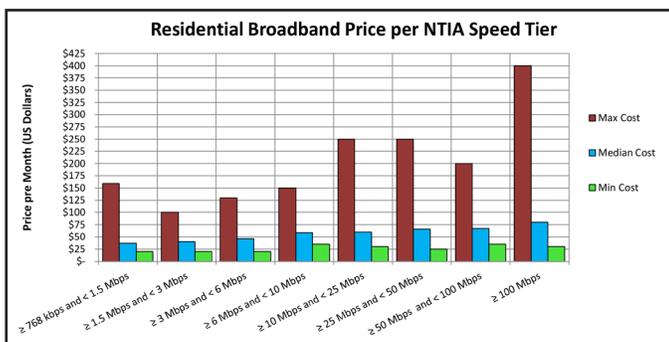
Photo by Antonio Dickey

OUTCOME 13: Research and Reports

PCI has employed the services of some of the best GIS mapping, data and analysis talent in the business.

These consultants have produced studies that advance the understanding of broadband in Illinois:

- **Strategies for Sustainable Broadband Adoption, 2014.**
 - **Insight:** The number of connectors determines the financial sustainability of a network.
- **Broadband Illinois e-Solutions Benchmarking and Pricing Study, 2013**
 - **Insight:** High-speed fiber is optimal for those who can afford it.
 - **Insight:** Pricing and speed are highly variable relative to geographic location.
- **Smart Communities - Chicago Digital Excellence Initiative, 2013**
 - **Insight:** Internet usage rose by 15% in communities where adoption programs were implemented.
- **Broadband Adoption in Illinois, 2012**
 - **Insight:** Smart phones and wireless devices are the best solution for low income citizens.



PCI's research shows that median broadband price is below \$100 per month.

FACTOID

Smart phones and wireless devices are the best solution for low income citizens.

OUTCOME 14: Conferences and Meetings

Conferences and meetings enable broadband players and partners to share information and coordinate action to achieve desired outcomes for the state. PCI has convened or cosponsored a variety of meetings, including:

- **Broadband Communities Summit** – With 400 participants at Tinley Park Convention Center, November, 2013.
- **Broadband Telemedicine Summit** – With 200 participants in St. Louis, May, 2013.
- **East Central Illinois Broadband Summit** – With 100 participants in Mattoon, December, 2013.
- **Western Illinois Broadband Summit** – With 100 Participants in Carthage.
- **Technology Innovation Summit** – With 200 participants in Chicago.
- **Training Sessions** – With local service providers and businesses across the state.
- **Underserved Area Meetings** – With service providers across the state to facilitate economic demand aggregation.



Drew Clark, former PCI Executive Director, speaks at the Broadband Telemedicine Summit.

OUTCOME 15: Adoption, Use and Access to Broadband

While Illinois has 99.75% broadband availability and 70% of households have adopted and are using broadband, 30% of households have not adopted broadband.

FACTOID

30% of households have not adopted broadband.

Factors in Lack of Adoption

- Cost of broadband
- Lack of computer or device
- Digital skills gap
- Education
- Age
- Race or ethnicity
- Perceived need

FCC Pilot Project

In cooperation with service providers and other partners, PCI received funding from the Federal Communications Commission (FCC) for a pilot project to help the neediest one-third of the Illinois population that lacks high-speed Internet access. The project assisted citizens in obtaining access to discounted broadband service, digital literacy training and low-cost devices. The goal was to field-test a new concept for lifeline services for low income residents. This project yielded valuable lessons in the difficulties of shrinking the digital divide for our state's most underserved citizens.

OUTCOME 16: Social Media

PCI has over 1,400 combined social followers on Facebook, Twitter and LinkedIn. Our social media messages are seen daily by thousands thanks to shares and user interactions.



Harvard Law Professor, author and Backchannel contributor Susan Crawford is a PCI social media supporter.



PCI shares news of other broadband enthusiasts and our news is shared by others across Illinois. The Illinois Senate Democrats and the Illinois Senate GOP shared the tweet above.



@brobandillinois



Broadband Illinois (Partnership for a Connected Illinois)



Partnership for a Connected Illinois

The Path Forward

Education



Invest in education technology to include connectivity, training and devices to permit online testing and distance learning.

Low Income



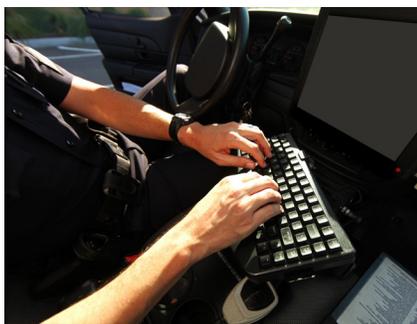
Enable low income families to obtain access to broadband through wireless devices.

Healthcare



Support hospitals, clinics, and service providers with better connectivity to enable telehealth, telemedicine and electronic records.

Public Safety



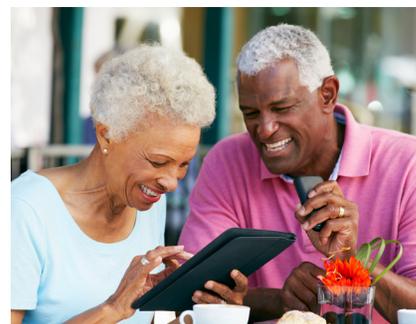
Support the continued development and implementation of Illinois FirstNet for public safety.

Rural



Mobilize rural citizens to use fiber, wireless and satellite technologies by increasing connectivity and training.

Senior Citizens



Support outreach, adoption and use programs to enable citizens to use life-changing applications.

Gigabit Cities



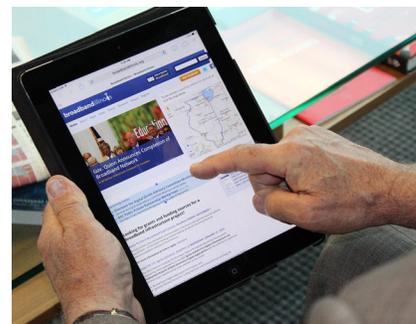
Continue state incentives to cities to help them upgrade to gigabit connectivity for economic competitiveness.

Last Mile Fund



Establish a last mile fund to connect anchor institutions: schools, hospitals, libraries and government buildings.

PCI



Continue to fund PCI as the state's broadband leader.

Broadband Today

OUR EVER-EVOLVING **HIGH-SPEED** BROADBAND INFRASTRUCTURE POWERS OUR PHONES, COMPUTERS, AND TABLETS

Broadband

Internet Access that Refers to High-Speed Internet (At least 4 Mbits/s downstream)

Wireless

Broadband that does **not** require a physical connection to connect to High-Speed Internet

Wireline

Broadband that requires a physical connection to connect to High-Speed Internet



Mobile Broadband

Connects to cell tower on **licensed spectrum** (each carrier has finite amount)



Wifi

Utilizes **unlicensed spectrum** (Router connects to existing high-speed connection)



Fiber

Uses fiber-optic cables made of glass fibers inside an insulated casing



Cable

Uses co-axial cable television infrastructure



Cell Phone Tower Network



Wireless Home Telephone

Uses Cellular Technology

Licensed Spectrum



Cell Phone

3rd or 4th generation cellular data network/Wifi



Tablet

4th generation cellular data network/Wifi



Router



Modem



Laptop



Desktop



VOIP Telephone

Spectrum

Invisible airwaves controlled by the government that carry voice and data signals to and from electronic devices including smartphones, tablets, and other mobile gadgets, as well as television and radio. Demand for more data increases, while spectrum (a finite resource) remains the same, potentially causing a **"spectrum crunch"** in the near future. Spectrum is only used with wireless broadband.



Graphic used with permission of Illinois Technology Partnership

Our Partners



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