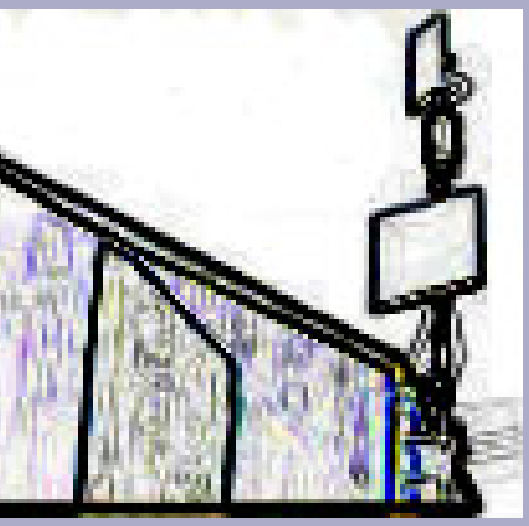
Connected & On the Go

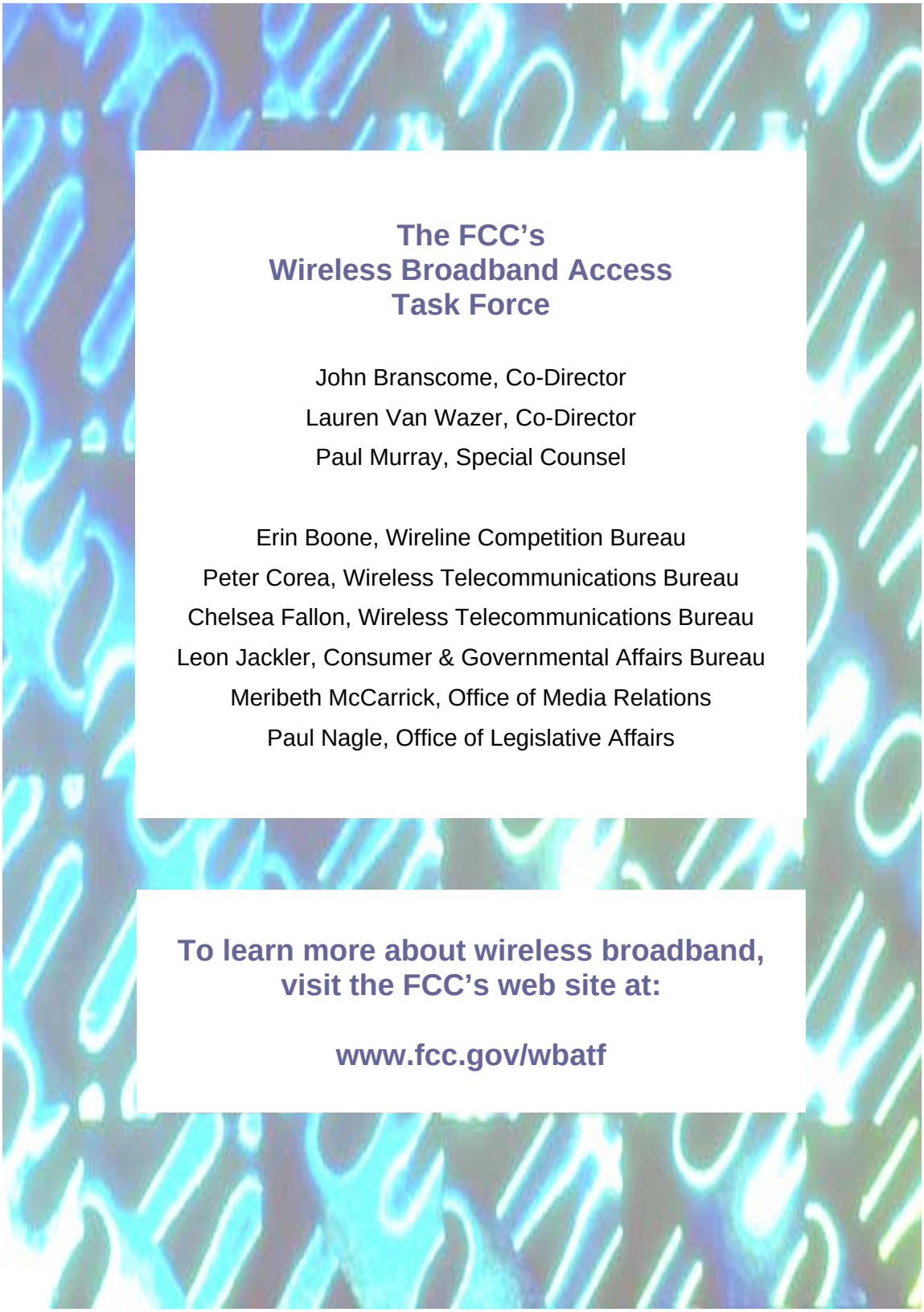
Broadband Goes Wireless

Overview of the Wireless Broadband Access Task Force Report

Federal Communications Commission

February 2005





The FCC's Wireless Broadband Access Task Force

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To learn more about wireless broadband, visit the FCC's web site at:

www.fcc.gov/wbatf

The Dawn of a Communications Revolution

We are at the dawn of a digital communications revolution. Ideas that once resided in the realm of science fiction are now being transformed into the reality of everyday experience.

Wireless technologies are one of the major drivers of this revolution. These networks are largely invisible to consumers, yet powerful enough to transform their lives. Wireless offers consumers a new freedom – the ability to communicate and connect with the world anytime, anywhere.

- Consumers using wireless broadband technologies have the freedom to access the Internet from coffee shops, on moving trains, and in their own backyards.

- Consumers can access the Internet using a single device – to make phone calls, pay bills electronically, and access entertainment and data – all with a seamless high-speed wireless connection. One device now opens up the world.

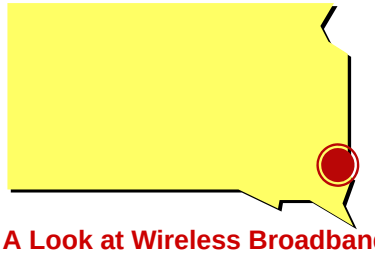
- Using off-the-shelf equipment bought at their local electronics store, Americans now have the power to build their own, in-home wireless broadband networks, operating at speeds that, until recently, were far beyond reach.

- Technological advances in wireless are occurring at a rapid pace. While these technologies are powerful and often complex, they also bring a refreshing simplicity to our lives: laptops with built-in wireless capabilities can automatically locate all of the nearby hotspots, e-mail can be automatically forwarded to a handheld device, and we can now watch streaming video on a mobile phone.

- Communities large and small across the U.S. are getting connected to broadband – gaining access to a wealth of resources and opportunities not previously available.

Wireless broadband technologies are helping to fuel the engines of our economy. Indeed, the impact of wireless technologies is magnified by their ability to be coupled with other communications technologies – including wireline, cable, broadband over power line, and satellite technologies – in ways that enable endless combinations of mixing and matching of technologies to suit the needs of different applications.

The promise of the benefits of wireless broadband is no longer reserved only for the future. The future is now.



A Look at Wireless Broadband in Sioux Falls

Sioux Falls, South Dakota – Sioux Valley Wireless (SVW), a long-established service provider in the Sioux Falls area, is now one of the most active wireless Internet service providers (WISPs) in South Dakota. In 1989, the company began offering multichannel video service over its licensed spectrum in the 2.5 GHz BRS/EBS band. By 1998, it decided to offer two-way, high-speed fixed wireless Internet access. To do so effectively, and to provide coverage not only to Sioux Falls but to surrounding areas as well, SVW combined use of this licensed spectrum with spectrum in the 2.4 GHz band, which permits use of unlicensed devices. SVW's wireless broadband network consists of cell sites deployed on licensed spectrum using three towers in the Sioux Falls area, each with a 35-mile radius, as well as 2.4 GHz license-exempt equipment deployments that include areas not covered by the licensed spectrum. The company offers Internet access speeds of up to 1 Mbps.

MNN Youth Channel reporters conduct a live interview with Chairman Powell via Wi-Fi.

Wi-Fi in the Big Apple

New York, New York – The Manhattan Neighborhood Network (MNN) makes use of Wi-Fi technology in a novel way. MNN provides facilities that allow average citizens to produce their own programs for airing on public access channels in New York City. Members of the community can rent top-quality video cameras and produce and edit their own programs using off-the-shelf equipment. Partnering with WISPs and others throughout the city, MNN can transmit live video to its studio for broadcast. In September 2004, a group of young people who ran the MNN Youth Channel conducted a live interview of Chairman Powell at a local hot spot in New York, and transmitted it wirelessly back to the studio using Wi-Fi technology. Now, any Wi-Fi hot spot in New York can be a studio for MNN. MNN demonstrates all the good that can come from hard work and creativity – it's a genuine American success story using the unlicensed bands.

The Task Force

FCC Chairman Michael K. Powell created the Wireless Broadband Access Task Force (Task Force) in May 2004. The mission of the Task Force – a team of multidisciplinary staff from across several FCC Bureaus and Offices – was to identify and recommend changes in FCC policies that would facilitate the more rapid deployment of wireless broadband services for the benefit of all Americans.

In looking at ways the FCC could help in making wireless broadband technologies available, the Task Force actively sought the experience, expertise, and advice of consumers, state and local governments, industry (such as equipment manufacturers and service providers), and other stakeholders across the nation.

The Task Force sought public comment on wireless broadband issues, organized events to promote wireless broadband, and conducted outreach efforts across the country – in places such as New York City; Jacksonville, Florida; Rapid City, South Dakota; and the Bay Area in California. Through these efforts, the Task Force learned about innovative wireless broadband technologies being used and developed, examined the level of availability of wireless broadband services, and heard the concerns of those involved in the front lines of these developments. The Task Force also established an FCC website devoted to wireless broadband issues – www.fcc.gov/wbatf – in order to provide consumers and industry with useful information regarding wireless broadband services, and to invite further participation by the diverse and dynamic wireless broadband community in relevant FCC proceedings.

The Task Force used the term "broadband" to describe a general set of transmission capabilities and characteristics, such as always-on, high-speed Internet access with a sufficiently robust functionality suitable for evolving, bandwidth-hungry applications.

For purposes of this report, the Task Force limited its review to terrestrial wireless broadband technologies and services. These wireless broadband services are delivered through use of unlicensed (license-exempt) devices or through devices using licensed spectrum, or both. This regulatory distinction may not be apparent to most users – who expect ever-increasingly sophisticated wireless devices to "just work" regardless of technology or spectrum. However, the Task Force's

observations and recommendations to the FCC necessarily reflect these regulatory distinctions. For example, FCC rules permit operation of so-called license-exempt devices without a user license (for example, services using the Wi-Fi standard) as long as the equipment is FCC-certified and operates at low power levels and with emissions limits designed to prevent harmful interference to licensed radio services. License-exempt devices share the same spectrum and must accept any interference that may be received from other devices. In contrast, providers using so-called licensed spectrum (for example, mobile phone providers), once they obtain a license through the FCC's licensing processes, are granted exclusive rights to use specified spectrum within a defined geographic area and are protected from interference from other users. Both types of wireless broadband play an important – and often complementary role – in ensuring American's access to these advanced services.

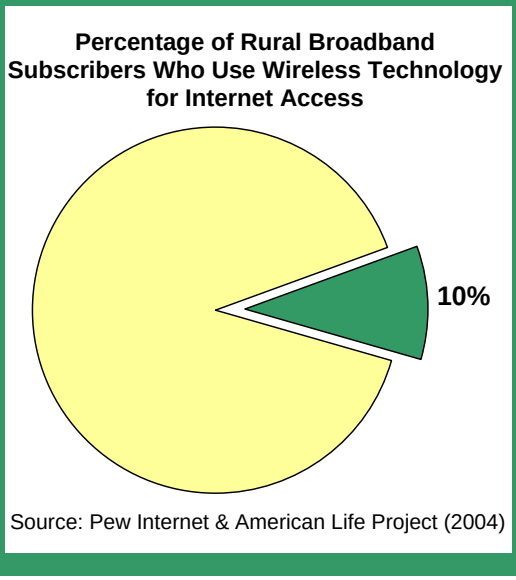
What We Learned

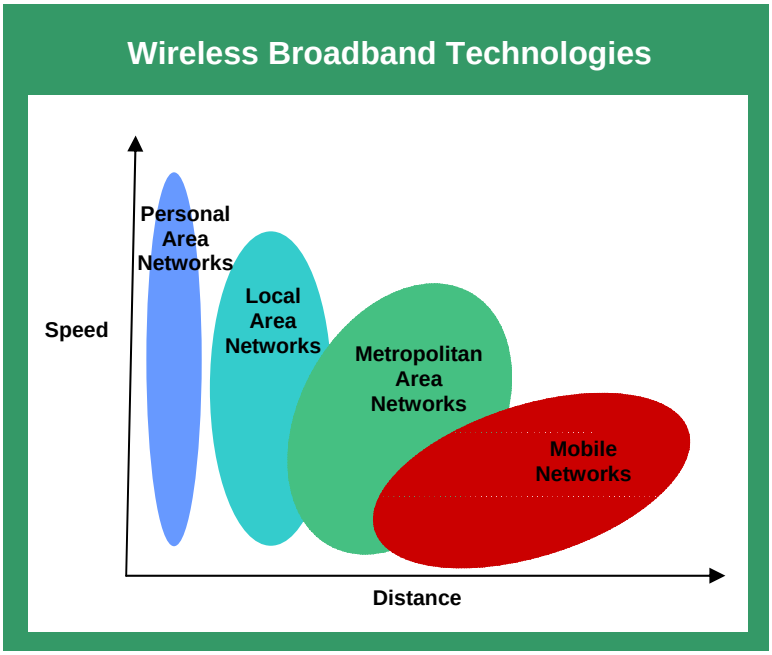
1. Wireless broadband technologies play a unique role in bringing broadband to everyone, everywhere, at any time. Unlike other broadband technologies, wireless broadband gives you "broadband on the go." Its uniqueness lies in its mobility. Either on a free-standing basis, or when combined with other broadband networks, wireless broadband imparts welcomed new freedom to users, providing the kinds of seamless interconnectivity that Americans increasingly seek. In addition, wireless broadband plays a critical role of bringing the benefits of broadband to rural and underserved areas in the country, where it often is the most efficient means of delivering these services.

2. There is a range of innovative wireless broadband technologies available to consumers. Wireless broadband networks can span the length of a room, a building, reach several miles, or even cover the nation. We are witnessing exciting technological advances, and significant growth in both users and uses. Here is an overview of the different types of wireless broadband networks:

Personal Area Networks use license-exempt equipment to send signals short distances – a few feet or yards – between and among mobile devices (*e.g.* mobile telephones, laptops, PDAs, and cameras) and stationary devices (*e.g.* computers, printers, televisions, personal video recorders, and home appliances). These wireless networks not only serve as a desirable replacement for numerous wires and cables in the home, but also provide simple, quick, and seamless interconnectivity among a wide range of devices and the data they hold. Broadband personal network technologies include Bluetooth, ZigBee, and ultra-wideband. Their data transfer speeds range from 300 kbps to 100 Mbps. We expect significant advances in the coming years in these broadband technologies – both in terms of data rates and range of coverage.

Wireless Broadband Increasingly A Solution in Rural Areas

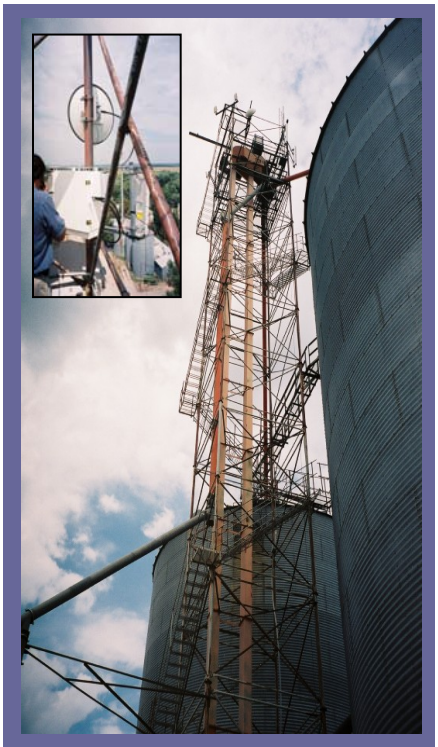




Local area networks have been tremendously successful in expanding broadband access in recent years. The number of WISPs in the U.S. offering "last-mile," fixed, wireless broadband service – often in rural areas – has grown to between 4,000 and 8,000. At the same time, the number of Wi-Fi "hot spots" worldwide has grown significantly and is projected to reach 150,000 by the end of 2005. In addition, several major wireless carriers have begun using Wi-Fi hot spots to complement their mobile cellular services. Significant advances are expected in the IEEE 802.11 family of standards, thus enabling further improvements in the broadband data rates, coverage, and performance.

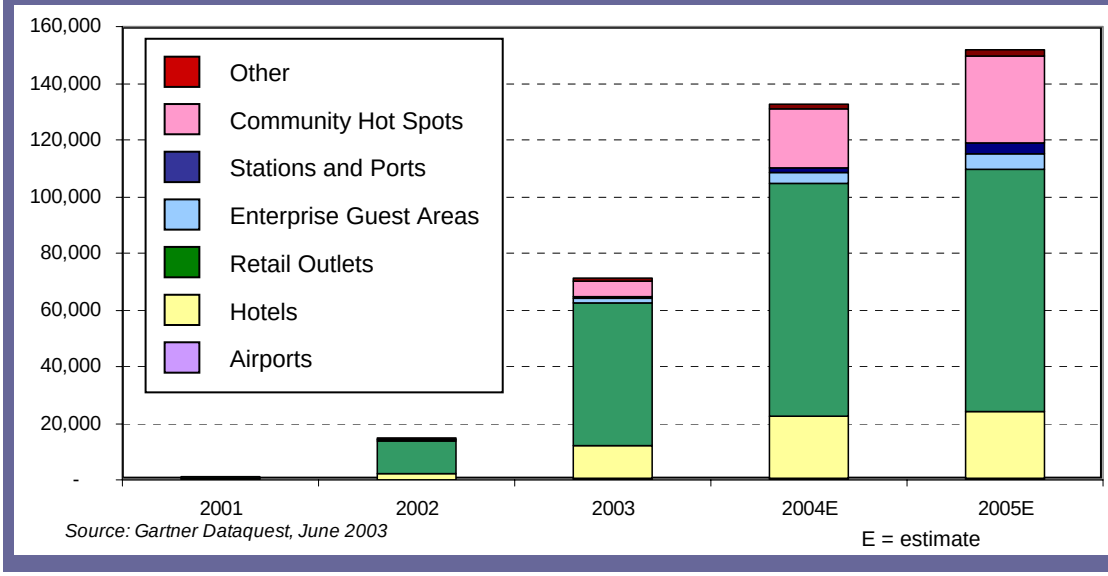
Local Area Networks typically use license-exempt equipment developed under the IEEE 802.11 family of standards, commonly referred to as "Wi-Fi." They can cover a distance of up to 300 feet when the network signal is omni-directional, such as in a Wi-Fi hot spot. Wi-Fi networks can also cover a distance of a few miles when the wireless signal is used as a direct, point-to-point link between two fixed locations (with no obstructions such as trees or buildings in between). These directional networks are commonly used by wireless Internet service providers (WISPs) to bring "last-mile" broadband connections to homes not served by DSL or cable. Local area network speeds range from 11 to 54 Mbps.

Metropolitan Area Networks give consumers portable, "last-mile" wireless broadband access – using devices such as a wireless modem connected to a laptop computer – within cities or towns at shared data rates of up to 75 Mbps. Newly-developed wireless technologies now allow metropolitan network signals to pass through buildings and trees. This development has eliminated the need for a rooftop antenna and has given consumers the freedom and ease of using smaller, off-the-shelf, easy-to-install wireless equipment that they can carry with them to connect to the Internet in other area locations where a network signal is available.



WISP radio transmitter equipment on a grain elevator in Grimes, Iowa.

Wi-Fi Hot Spots Worldwide by Type of Location (2001-2005)

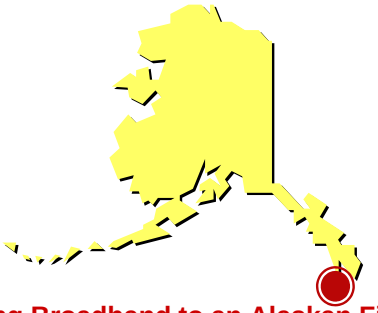


Source: Gartner Dataquest, June 2003

E = estimate

The IEEE has been developing a metropolitan network area technology standard called WiMAX, or 802.16a/d. Because it is an "open" standard, WiMAX will allow network equipment made by different vendors to work together and will drive down cost of equipment production, thereby lowering the cost of devices for consumers. WiMAX can be used in both licensed and unlicensed spectrum. The IEEE is also developing a mobile version of WiMAX, called 802.16e, which will give users a high-speed wireless Internet connection while moving or traveling at high speeds.

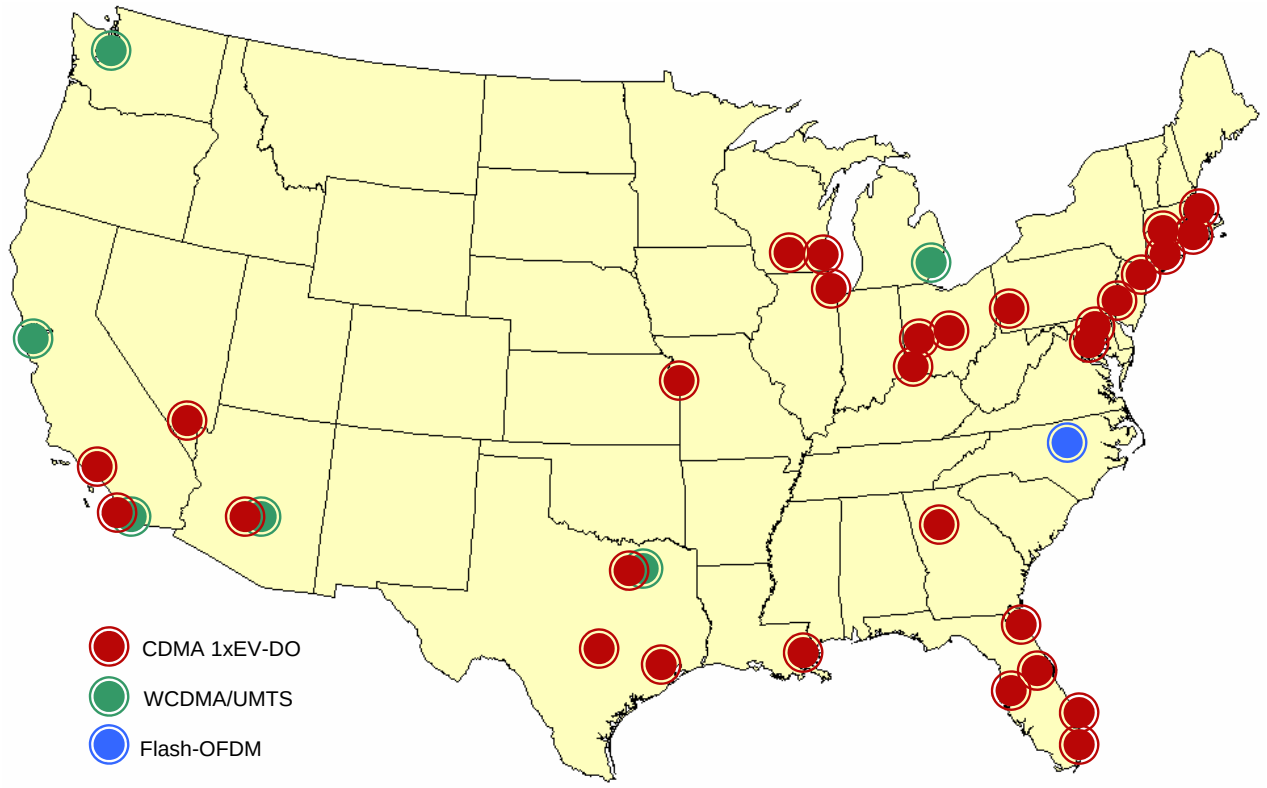
Mobile Networks provide consumers with extensive, fully mobile broadband access, including while walking around or traveling in vehicles at high speeds. Mobile networks generally use licensed spectrum and cover large areas of the country. Over the past sixteen months, wireless carriers have



Bringing Broadband to an Alaskan Fishing Village

Coffman Cove, Alaska – Coffman Cove is a remote fishing village with a population of 240 on Prince of Wales Island, Alaska, where even dial-up Internet access requires a long-distance call. Local leaders were determined to provide its residents with better access to the outside world and give the local economy a boost. While their village's location made wireline broadband access infeasible, local leaders realized that complementary use of satellite and terrestrial wireless could provide the necessary level of service at a reasonable cost. The village established an ISP, to be owned and run by the local citizens. The village contracted with SkyFrames to provide satellite backhaul service, and deployed a wireless hot spot with a radius of 2 miles surrounding the village center, completing the network in less than one week. Now more than half of the residents of Coffman Cove – as well as the local school, library, and local businesses – subscribe to the service, which offers access to the Internet at data rates of up to 1 Mbps. While Coffman Cove still is not served by roads, the villagers now have access to information and entertainment, as well as economic opportunities, previously unimaginable.

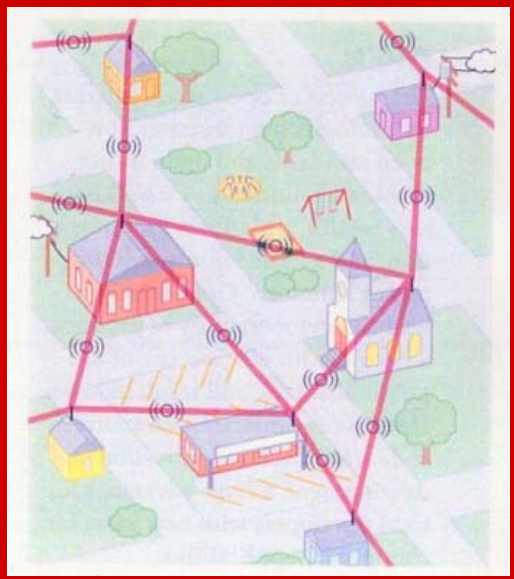
Mobile Broadband Deployment by Technology (January 2005)



begun to deploy mobile broadband technologies, such as CDMA 1xEV-DO and UMTS/WCDMA, as overlays on their existing cellular networks, and many have announced plans to launch or expand these technologies in the near future. Carriers are now providing mobile wireless broadband services to millions of Americans at speeds ranging from 300 kbps to over one Mbps. It is expected that networks using EV-DO technologies, for instance, will be available to 150 million Americans by the end of 2005.

Mesh Networks are an example of some of the additional advances in wireless technology and may enable a more flexible and more efficient expansion of wireless broadband services. Mesh networks are a relatively new and evolving type of network. Unlike the technologies

Mesh Networks



Mesh networks allow multiple points of connection to a wireless network, with no central tower. The network consists of shorter distances between nodes, enabling each antenna to broadcast at lower power and thereby creating less risk for interference.

Video on Mobile Phones

In the ever-increasing variety of new and enhanced mobile services, one recent entrant has been the introduction of video services offered over mobile devices. Subscribers can use so-called smart phones to download and view a range of different channels – from news to sports to soap operas. MobiTV was the first mobile television service launched in the United States. It is currently available to Sprint, Cingular, and Midwest Wireless subscribers and offers programming available with cable television, including the Discovery Channel, CSPAN, and CNBC, and it includes programming customized for mobile subscribers. Verizon Wireless recently launched its mobile streaming video service – VCAST – which is available on phones that use its EV-DO network technology. In addition to traditional programming, Verizon's service also includes short, made-for-mobile episodes – often called "mobisodes" – of existing and new programs, including "24" and several new soap operas. Other planned mobile video programming services also have been announced. In November 2004, Qualcomm announced its MediaFLO service, which will be deployed over a network dedicated exclusively for mobile music and video. Qualcomm's service will include access to between 50-100 channels, including 15 live programs.

described above, in which each "node" (or consumer device) in the network communicates only with a central antenna or base station, each node in a mesh network can also function as an access point and transmit data to all of the other nearby nodes.

3. Wireless broadband technologies improve the quality of consumers' lives. Along with the advances in wireless broadband networks and technologies, described above, come a host of new and exciting uses, or applications, which provide people with more ways to be "more connected" and simplify their communications with work, home, and friends. Some examples include:

- Wi-Fi hot spots;
- personalized mobile access to music and video entertainment;
- public safety applications;
- community networks;
- surveillance applications, such as ensuring building security and improving transportation monitoring;
- mobile applications for commuters, such as on trains and ferries; and
- educational applications, such as creating a "wireless" campus that connects students with school networks.

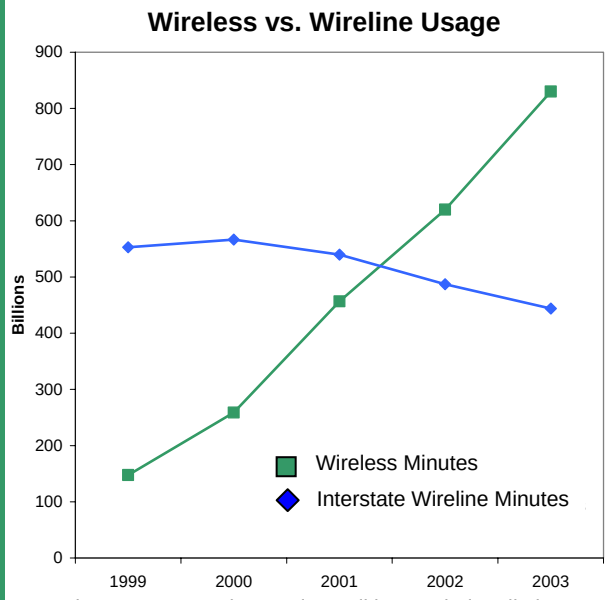
These are but a few of the wireless broadband applications that exist today. Tomorrow promises even greater growth and innovation.

4. Significant growth in the wireless broadband market can be expected. Recent trends demonstrate the tremendous potential of wireless in the delivery of broadband services to Americans. More Americans – approximately 170 million – rely on wireless phones than ever before. In addition, growing numbers of Americans use wireless devices – such as cell phones and Wi-Fi enabled laptops – to connect to the Internet. According to one recent analysis, 41% of all Internet users – or 56 million Americans – use devices that are capable of accessing the Internet wirelessly. The percentage of younger Americans that use such wireless devices is significantly higher, and their demand for mobile communications, as well

Wireless Broadband Supporting Public Safety

There are numerous ways in which the public safety community can use wireless broadband technologies to support their mission-critical work. Here, a police officer with the Pennsylvania State University Police Department uses a laptop computer with a mobile broadband connection to obtain real-time information, such as drivers license records, vehicle registrations, and local crime data.

An Increasingly Wireless World

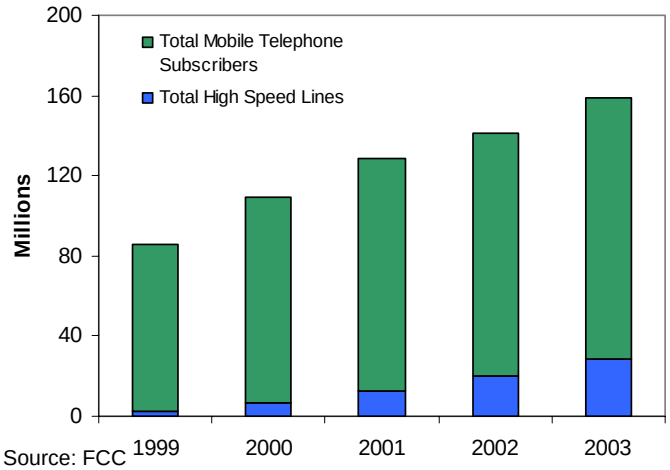


Americans now spend more time talking on their cell phones than their wireline phones. This familiarity with wireless is likely to help drive demand for wireless broadband.

as their comfort and familiarity with these technologies, will serve to further enhance demand.

Future developments will also stimulate significant growth in wireless broadband over both the near and long term. We expect the following trends to drive this growth: greater network deployment, lower equipment costs, new applications such as video and Voice-over-IP (VoIP), new and enhanced device features such as longer battery life, improved pricing plans, and the increasing convergence and integration of wireless broadband with other broadband delivery mechanisms.

Wireless Broadband: Building on the Success of Two High-Growth Industries



Source: FCC

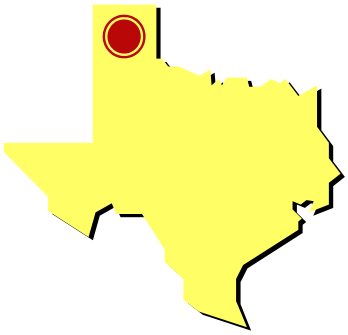
The emerging wireless broadband market will capitalize on the widespread use of mobile phones and the growing demand for broadband connections.

FCC Accomplishments

The FCC's recent wireless broadband policies have fostered continued innovation. These policies have helped to encourage capital investment in wireless broadband and to deliver new and empowering technologies and applications to American consumers.

Providing Spectrum

The FCC has significantly increased the spectrum available for wireless broadband services. In 2003, the FCC made an additional 255 MHz of spectrum available in the 5 GHz band for unlicensed devices and increased by nearly 50 percent the spectrum available for licensed mobile wireless broadband services. In addition, in 2004, the FCC proposed to allow unlicensed wireless devices to operate in the vacant channels of certain television broadcast bands and proposed rule changes governing 50 MHz of spectrum in the 3 GHz band to foster the introduction of new and advanced wireless broadband services. In 2003, the FCC dedicated 50 MHz of spectrum in the 4.9 GHz band suitable for wireless broadband applications in support of public safety services.



Grain Elevators and Wireless Broadband

Amarillo, Texas – AMATechTel of Amarillo, TX is one of the largest regional WISPs in the U.S., serving approximately 4,000 customers across 20,000 square miles in northern Texas. The vast reach of AMATechTel's network is a result of its affiliation with Attebury Grain, a large grain storage company that hired AMATechTel to connect the company's grain elevators to the commodities market via a wireless network. After the project was completed, the two companies joined forces to expand this network, using the top of Attebury's grain elevators as towers, to transmit wireless signals to provide Internet access to surrounding areas. AMATechTel supplies broadband to communities that are not currently served by cable and DSL providers, and have no other means of receiving broadband service. It uses license-exempt spectrum and radio transmitters to provide its service to subscribers such as school systems, universities, hospitals, banks, and public safety agencies throughout the region.

Allowing Choice

When wireless providers have the flexibility to choose which technologies and services to deploy, as well as an innovative means of obtaining access to spectrum, they have the ability and the incentive to deploy the services, features, and functions that Americans desire.

The FCC has made substantial efforts to allow licensees and parties seeking access to spectrum the flexibility to use spectrum for its highest and best purposes. For example, the FCC revised its antenna rules in 2004 to enable deployment of advanced technologies used by unlicensed wireless networks and also proposed changes to promote the use of smart radio technologies to facilitate more flexible, efficient and reliable spectrum use.

In 2003 and 2004, the FCC also established new policies and rules that permit parties seeking access to spectrum to enter into a wide variety of spectrum leasing arrangements which enable them to access – with reduced transaction costs – the amount of licensed wireless spectrum they may need to provide wireless broadband services.

In 2004 the FCC also provided additional flexibility in the 2.5 GHz band, which spans almost 200 MHz of radio spectrum that is ideal for wireless broadband. Licensees and their spectrum lessees in the band will now be able to develop and deploy innovative technologies, including low-power, mobile wireless broadband technologies.

Enabling Continued Network Growth

Sufficient infrastructure, particularly antennas and towers, is critical to ensuring the degree of reliability, higher speeds, and lower latency that are required to provide high-quality broadband services.

The FCC has taken many steps to facilitate the deployment of infrastructure for wireless broadband networks. For example, in 2004 the FCC clarified that consumers can install and place Wi-Fi, mesh, and related license-exempt equipment, in addition to other types of wireless equipment, on their property without restrictions from landlords, home owners' associations, or state and local governments. The FCC also clarified its infrastructure sharing policies to encourage licensees and equipment manufacturers to enter into beneficial infrastructure sharing arrangements. And the FCC adopted measures to facilitate the ability of wireless broadband providers to construct communications towers and other FCC-licensed facilities when it streamlined the

National Historic Preservation Act review process for these facilities.

What We Recommend

To ensure that our nation's regulatory policies concerning wireless broadband do not impede innovation or delay service availability across America, the FCC should be vigilant and proactive in identifying and understanding emerging technologies and in ensuring that existing regulatory policies do not get in the way of these advances. Innovative technologies call for innovative regulatory policies. And the American public benefits most when regulatory policies enable consumers and businesses to fully tap the benefits of emerging wireless technologies.

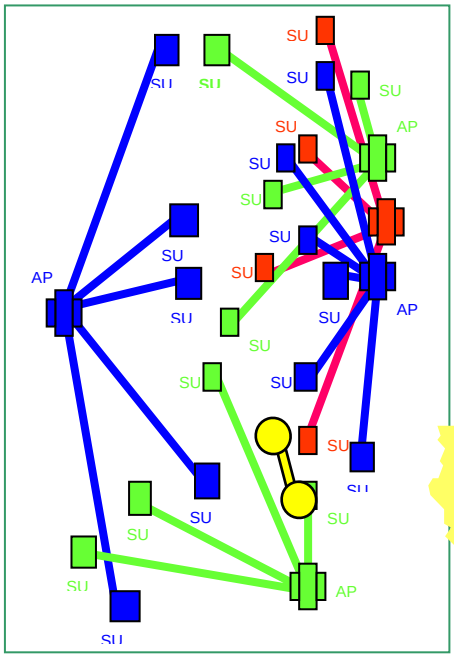
Building upon the FCC's actions to date, the Task Force recommends that the FCC take the following steps to speed the deployment of wireless broadband to American consumers:

License-Exempt Equipment

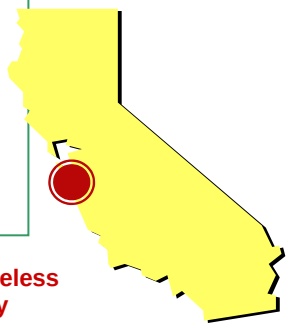
We believe the following recommendations will continue and enhance the success of wireless broadband via license-exempt devices and equipment.

- Promote voluntary frequency coordination efforts by private industry – such as those already successfully deployed in some of the more congested parts of the country – to mitigate potential interference among users of license-exempt spectrum.

- Promote voluntary industry "best practices" (*e.g.*, network planning and design, rule compliance) among unlicensed users.



With private industry initiatives like BANC, wireless broadband providers can work together to avoid interfering with one another and to provide more reliable service to consumers. The different colors in the diagram above represent the separate, and non-interfering, networks of individual WISPs, with the lines depicting the "last mile" wireless links used to serve individual customers.



Private Solution Increases Wireless Broadband Service Quality

San Francisco Bay Area, California – The Broadband Access Network Coordination (BANC) organization provides a model of how WISPs using the license-exempt bands to provide wireless broadband services can work together to avoid interfering with one another and provide higher quality, more reliable service. BANC consists of several WISPs that serve the San Francisco Bay Area and use the 5 GHz license-exempt bands to establish "last mile" fixed wireless connections to their customers. As members of BANC, these WISPs pre-coordinate their network links in order to reduce interference. As an increasing number of WISPs have begun to provide broadband service using the license-exempt bands, interference has become a significant concern, particularly for those WISPs serving densely-populated areas like Northern California. Interference degrades broadband service quality by causing periodic outages and lowering connection speeds.

BANC members frequently exchange information with one another about new links, system tests, and unknown sources of interference via a Yahoo! chat group. BANC also maintains detailed information, using specially-designed software, on where its members have deployed their network links. This system allows members to scan the available spectrum in order to pre-coordinate and register new, non-interfering links before activating them. The BANC system has been adopted in other parts of the country, including Los Angeles and San Diego.

- Consider increasing the transmission power limits in certain bands available for use by unlicensed devices in order to improve their utility for license-exempt WISPs.

- Work closely with license-exempt WISPs to address, on a proactive basis, their needs relating to FCC policies and regulations.

- Consider hosting a WISP forum on an annual or periodic basis to provide additional opportunities for WISPs and consumers to share their views on issues before the FCC.

- Work closely with the wireless broadband industry to ensure that, where necessary, the FCC addresses unlawful intentional violations, such as jamming and power boosting, of the technical rules applicable to unlicensed wireless broadband devices.

Licensed Spectrum

We recommend the following policy changes in order to expand the availability of wireless broadband services offered using in licensed spectrum.

- Improve access to licensed spectrum –
  - Explore innovative ways to put valuable spectrum on the market through further improvements and streamlining of the FCC's spectrum allocation and assignment process.
  - Given that spectrum in the 700 MHz band is ideal for wireless broadband services, expedite the transition of the Digital Television (DTV) spectrum for advanced wireless services and public safety, and facilitate its use during the interim period.
  - When adopting spectrum band plans, consider new flexible configurations – such as allowing pairing of asymmetric bands – that may be particularly conducive to wireless broadband applications.

- Increase the technical and regulatory flexibility of FCC rules applicable to the use of licensed spectrum –
  - Adopt more "flexible use" policies that remove impediments to the use of new and advanced wireless broadband technologies and applications.
  - Consider providing incumbent licensees in restrictive bands with additional flexibility, either by granting significant new flexibility to existing licensees or by using

The coverage area of the Grand Haven network

Town of Grand Haven and Local Provider Work To Give Residents Better Broadband

Grand Haven, Michigan – When the town of Grand Haven determined that it wanted to provide its residents with higher speeds and better broadband coverage than was available, the city found a willing partner in Ottowa Wireless. Ottowa Wireless is a local business that was granted a non-exclusive contract to place access points on city-owned buildings and utility poles. Grand Haven now has Wi-Fi coverage over its entire six square mile downtown area at subscription rates comparable to those in larger markets. Ottowa Wireless has also begun deployment of a VoIP handset to provide voice service throughout the coverage area, bringing a new competitor to the local phone market.

creative market-based auction mechanisms.

- Further facilitate secondary market arrangements that provide wireless broadband service providers with easy access to licensed spectrum, in places and amounts that they need, and enhance opportunities for more efficient and "dynamic" sharing of the same spectrum among different users and uses made increasingly possible by today's and tomorrow's technologies.

- Apply a pro-competitive, innovative framework – one that imposes the fewest regulatory barriers at both the federal and state level – to wireless broadband services to maximize consumer benefits –
  - Consider classifying wireless broadband as an "information service" – consistent with the FCC's determination regarding broadband services offered over cable networks and its tentative conclusion regarding broadband offered over wireline – in order to minimize potential regulatory hurdles at both the federal and state level.
  - Consider examining whether wireless broadband constitutes an "interstate service" so as to minimize potential regulatory hurdles at both the federal and state level.
  - Alternatively, clarify the scope of the deregulatory principles applicable to Commercial Mobile Radio Services (CMRS) – which laid the foundation for rapid deployment of mobile voice and data services over the last decade.
  - Similarly, consider clarifying the scope of state authority in setting "other terms and conditions" relating to wireless broadband services so as to ensure that there is consistent and minimal state regulation of nationwide wireless broadband deployment.

Companies are increasingly combining both wireless and wireline technologies to bring broadband to consumers. In Palatka, FL, a wireless base station on a water tower is used to extend a broadband provider's network to areas where it was not feasible to deploy DSL. The inset shows the wireless broadband modems used by customers.

Converging Networks

The FCC should take a pro-active, forward-looking approach as wireless broadband networks begin to be used in combination with other broadband service networks and services.

- Consider, in ongoing and upcoming proceedings, the impact of the increasingly rapid convergence of wireless broadband with other broadband technologies and services.

- Evaluate, on an ongoing basis, whether it is time to streamline the regulatory treatment that applies to different broadband access technologies and services.

- Look for opportunities to remove outdated rules, and accord an increasingly flexible regulatory environment for service providers, to

facilitate the convergence of wireless broadband and other broadband services and technologies.

Continued Outreach Efforts

We believe the FCC should build upon and improve its existing outreach efforts with the following actions.

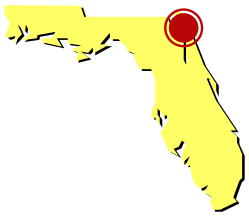
- Continue the effective collaboration with other federal agencies – such as the National Telecommunications and Information Administration (NTIA), USDA's Rural Utilities Service, the Appalachian Regional Commission and Delta Regional Authority, and the Department of Homeland Security – to facilitate the more rapid development of wireless broadband.

- In addition, collaborate more effectively with state and local governmental organizations to promote wireless broadband deployment.

- Build upon and improve the FCC's current outreach efforts with consumers, institutional users, and the industry (including both service providers and equipment providers) –
  - Improve the FCC's analysis of the wireless broadband industry – for inclusion in either the CMRS Competition or Section 706 reports – to help inform the development of FCC policies that eliminate outdated regulatory barriers to the deployment of wireless broadband.
  - Improve outreach to the public and the wireless broadband industry to provide helpful information relating to wireless broadband (including the maintenance of an FCC web page dedicated to wireless broadband issues).

Conclusion

This is an exciting time for wireless broadband. Through technological advances, innovative new applications, and ever-increasing deployment of wireless broadband networks in both urban and rural America, our nation is poised to experience the great freedom and promise enabled by wireless broadband. Building upon the strong foundation that the FCC already has established over the last few years, the Task Force recommends additional steps the FCC could take to further foster wireless broadband and facilitate these exciting developments.



Two Innovative Wireless Broadband Services in Jacksonville

Jacksonville, Florida – Clearwire began offering wireless broadband service in Jacksonville in August 2004. The service is now available to 120,000 homes in the area, covering over 100 square miles, and delivers speeds up to 1.5 Mbps. Users connect to the Internet via a portable, plug-and-play wireless modem device attached to a personal computer or laptop, and can access the service when roaming anywhere within the Jacksonville coverage area. Clearwire's technology relies on licensed spectrum in the 2.5 GHz BRS/EBS band.

In addition, the city of Jacksonville has created a community wireless network that provides Internet access to those who cannot afford it. Through a non-profit organization known as JaxWiz, underprivileged residents of Jacksonville are provided with free computers, training, and broadband wireless Internet connections. JaxWiz began with a partnership among the city government, public agencies, and private companies and donors who were interested in creating a network to offer low-income communities Internet access. Jacksonville Mayor John Peyton describes JaxWiz as a catalyst for literacy and community development.