

# The 2.5GHz Educational Broadband Service (EBS) Spectrum:

The Clearwire Position & Spectrum Acquisition

The FCC “Substantial Service” Deadline

2.5GHz EBS and LTE Release 8

Best Practices Solutions

Summary – May 1 - September 30, 2010

Exploitation of the *past* FCC’s policy and rules encompassing acquisition and subsequent lack of deployment of our regional licensed 2.5GHz Educational Broadband Service (EBS) spectrum should be investigated at the highest level and at the forefront of Congress, Department of Education, Labor, Regional EBS License Holder and Community Anchor Institution agendas as we move forward in defining a National Broadband Plan and reform of our Educational and Workforce systems. This document is written to help educate this constituency on dispositions and actions taken by the past FCC and Clearwire, present the challenges faced by our regional EBS License Holders and Local Education Agencies (LEAs), and to present best-practices solutions in line with economic recovery and sustainability as outlined in ARRA initiatives and programs.

# Table of Contents

Introduction .....	1-2
History of the Educational Broadband Service (EBS) Spectrum .....	3-4
The Clearwire Spectrum Grab .....	4-5
More Evidence of the Clearwire Spectrum Grab – FCC Hearing 06-46 .....	6-7
The FCC’s Position & FCC-08-83A1– A precursor of events to come.....	7-8
Broadband Radio Service (BRS) Auction 86.....	8
The National Educational Broadband Service Association (NEBSA).....	9-12
State & Regional Challenges – Education Reform .....	13
2.5GHz EBS Transition to LTE Release 8 .....	14-15
The Language of the Clearwire Lease - Reserve Capacity, Middle Band Channels & Substantial Service .....	16-17
Public Filing of EBS Spectrum Leases .....	17
700MHz Public Safety & 2.5GHz Educational Broadband Service; A comparison of FCC models.....	18-21
Solutions .....	21-22
APPENDIX A – Substantial Service Requirements.....	23-24

# Introduction:

With the FCC mandated Educational Broadband Service (EBS, 2.5GHz licensed broadband wireless spectrum) substantial service deadline of May 1, 2011 looming there are many issues and questions surrounding Clearwire's plan, this upcoming deadline and what will happen with EBS license holders, their licenses, and where or who this EBS spectrum asset will revert to or whether the spectrum will end up being auctioned off.

Even more imminent on the horizon are education reform models as introduced through the massive \$4.35 billion investment through Race to the Top (R2T) that will surely catapult education, and the resulting new generation of job seekers, as the primary catalyst towards economic opportunity, revitalization and sustainability in the United States.

When it comes to defining and implementing the new regional and state-wide initiatives presenting in R2T models there is the question of developing a concurrent synergistic and dedicated infrastructure used to develop and sustain these programs. And one of the challenges that every state and region faces is identifying readily available regional infrastructure assets.

If regional R2T initiatives, programs and services were to be introduced concurrently and in conjunction with build out of mobile, fixed and nomadic anytime/anywhere regional high speed wireless broadband, using the Educational Broadband Service spectrum, the support and "social capital" generated would be an instant catalyst to bolster community and regional involvement in R2T programs. This would ensure our local education agencies (LEAs), along with students, teachers, parents, administrators, regional employer groups, local governments and all regional constituencies that the core infrastructure, tools, services and applications needed to reform our educational and workforce systems are in place and ready to go.

With that being said the past FCC (Kevin Martin & Co.) has allowed Clearwire to monopolize and gain complete control over the Educational Broadband Service spectrum that has been maintained by our community and regional anchor institutions for the past thirty (30) years. This is evidenced by events and rulings over the past six years culminating in a ruling by the outgoing FCC Administration, on Election Day 2008, of de facto transfer of spectrum leases held by Sprint, Clearwire and their subsidiaries to a new wireless broadband company called CLEAR ("the New Clearwire" monopoly). [Sprint and Clearwire WT Docket No. 08-94 - <http://www.fcc.gov/transaction/sprint-clearwire.html>]

This is in direct contradiction of the true intent and purpose surrounding the original policy and rule changes enacted for transition of the EBS spectrum back in 2005. If Clearwire is allowed to continue on this path to "ownership" of our regional EBS spectrum the resulting consequences will have a direct negative effect on expedited development and reform models encompassing education, jobs creation and ultimately the new FCC's National Broadband Plan.

Also in play is an extremely differentiating wireless technology build out and delivery strategy that provides the United States the opportunity to combine two varying spectral assets into one interoperable nationwide internet and communications network that would benefit all Americans. In no other country is this available thanks mostly in part to the inherent systemic flaws that have existed to this point surrounding a sensible broadband plan for this Country. So we can learn from our lack of performance and mistakes.

The United States is the only Country in the World that can begin build out of ubiquitous wireless internet access and communications using both the FCC licensed 700MHz and 2.5GHz Educational Broadband Service spectrum. This will catapult the U.S. from its current dismal world ranking (14th) in wireless broadband deployment to number one in the World. And through ARRA programs like the \$7.2 billion Broadband Stimulus and \$4.35 billion Race to the Top education reform models, the United States can surely lead all Nations in a sensible path towards economic recovery, reform and sustainability while creating thousands of jobs in the process.

The challenges lay in simple reformation of 2.5GHz EBS spectrum allocation. The current rules and policy surrounding the 2.5GHz EBS have allowed for manipulation as compared to the strait forward auction and transition of the 700MHz spectrum. In 2008, auction of the 700MHz spectrum netted \$19.2 billion for the FCC. They spent millions on educating all Americans on this transition through TV ads, websites, rebates on equipment, etc. so all Americans still had access to “free” TV.

This did not happen with the acquisition of the 2.5GHz Educational Broadband Service spectrum that Clearwire now controls. This spectrum was not auctioned; it was leased from our cash starved community anchor institutions at extremely low lease values based upon misinformation and manipulation of the FCC rules and policy. These leases were not made public and no regional public participation was invited prior to enacting the lease.

This summary will educate Congress and the DOE on the value of the EBS spectrum asset while pointing out some of the inherent flaws surrounding acquisition and use of this asset to date.

## History of the Educational Broadband Service (EBS) Spectrum

Back in 2005 the past FCC (FCC Chair, Telecom Lobbyist Kevin Martin & Co.) changed the rules and policies governing the licensing of the Instructional Television Fixed Service (ITFS) in the 2500-2690 MHz band. It was to become the Educational Broadband Service (EBS) spectrum and transitioned to offer mobile, fixed and nomadic wireless broadband services. Needless to say, this spectrum real estate went from swamp land to ocean front property overnight based upon these policy and rule changes.

Owners (FCC assignees of original ITFS spectrum, now *licensees* of the EBS spectrum) paid nothing for this spectrum. The EBS license holders include state universities and university systems, public community and technical colleges, private universities and colleges, public elementary and secondary school districts, private schools (including Catholic school systems in a number of large metropolitan areas), public television and radio stations, hospitals and hospital associations, and private, non-profit educational entities, all anchor institutions in the communities where we work and live.

To entice Congress to go along with these changes the past FCC summarized the proposed transition with statements like:

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-03-56A4.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-56A4.pdf)

*"By this action, the Commission seeks to promote competition, innovation and investment in wireless broadband services, and to promote educational services. Additionally, the Commission also seeks to foster the development of innovative service offerings to consumers as well as educational, medical and other institutions, simplify the licensing process and delete obsolete and unnecessary regulatory burdens.";*

*"Such systems [will] offer a significant opportunity to provide competition to cable and Digital Subscriber Line (DSL) services in the provision of broadband services in urban and rural areas.";* and

*"The American classrooms are increasingly wired, but access to broadband technologies is still far from ubiquitous. With access to broadband technologies our students and teachers will have more powerful tools with which to learn. ITFS can and should play a role in making broadband more common in our students' educational experience."*

None of this has or will happen. Instead, as a culmination of events and underlying agendas over the past five years, Clearwire now has monopolized rights to this spectrum through extremely undervalued lease agreements with singular cash starved anchor institutions. This represents over 85% of available EBS spectrum in urban, suburban and rural geographical service areas within the United States.

Since 2005, the Company has launched in only thirty small, low lease value markets. In 2009 the Company showed a \$1.1 billion dollar loss of which \$260 million was attributed to "spectrum lease expense".

So how has Clearwire stayed alive? Why is it that the stock continues to hang around that \$6-8 dollar range? What is their plan?

Their plan is quite "Clear" if you perform the proper (and endless) research and diligence.

### The Clearwire Spectrum Grab

Starting in 2005, when Clearwire began approaching unsuspecting EBS spectrum licensees, the progression probably went something like this (very simplistic example) - and remember that Clearwire is dealing with technology deficient, disattached "digital immigrant" non-profit Boards of Trustees (BOTs) who only care about how much money they could conceivably get for an asset they knew nothing about.



**Clearwire:** *We're Clearwire (or now current subsidiary, partner (Sprint)). We want to lease your EBS spectrum.*

**BOTs:** *What's that?*

**Clearwire:** *It's spectrum used for broadband. You own it, we want to lease it.*

**BOTs:** *We don't know. [BOTs now clamoring to check status of license, renewal processes]*

**Clearwire:** *Lease to us, we will take care of everything. You can't do it. It's too expensive and you don't have the technology or the wherewithal to do it.*

**BOTs:** *How much will you pay us?*

**Clearwire:** *Enough to make you look good for your constituency.*

**BOTs:** *Where do we sign...*



*"In many cases Boards of Trustees were unaware that this asset even existed or that they had the rights to it"*

*"It is all about who is offering the most money [Sprint/Nextel or Clearwire] and addressing the immediate needs of cash starved non-profits, their faculty, students, or constituents".*

~Eminent Outside EBS Lease Counsel

This was just the start of the Clearwire spectrum grab because they still don't "own" the spectrum at this point. They have only leased it with the promise of launch of "substantial service" using the respective EBS license holder's spectrum.

So here we are, a year away from the FCC deadline (May 1st, 2011) that states if EBS license holders do not have substantial service launched, using their EBS spectrum for commercial and/or educational use, then the FCC will start revoking Educational Broadband Service licenses.

A spectrum manager from Clearwire states *"We are paying them [EBS license holders] all this money. They are responsible for building out their own substantial service"*. Herein lays the Clearwire spectrum grab.

If EBS license holders were to be responsible for meeting "substantial service" safe harbor requirements then why would EBS license holders lease to Clearwire in the first place? The reason lies with the lease itself and promises to "assist" lessors in meeting safe harbor requirements, specifically through the "Substantial Service; Commencement of Construct" part of the agreement (see *"Language of the Clearwire Lease"*).

Let's drill down a little further and look at a lease in a major market. Florida Atlantic University maintains EBS licenses of which the geographical service area (GSA) covers most of Palm Beach and Broward Counties (Florida) with over 3 million people and 1.4 million households. In April 2008, this EBS license holder signed a lease with Clearwire valued at \$173 million over thirty years. This non-profit State College received \$12,463,613 up front and has received \$474,951 every month to date. Substantial service has not been launched in this market so this EBS license holder is in jeopardy of losing their EBS license.

If we carry these payments out to the May 1<sup>st</sup>, 2011 deadline then Clearwire would have paid this EBS license holder a total of \$17,098,236 in monthly payments, add the \$12,463,613 upfront payment, for a total of \$29,561,849 paid to this EBS license holder as of May 1, 2011. Assume the FCC revokes the EBS license at this point based upon lack of adherence to "substantial service" requirements.

Based upon Clearwire's average rate per user (ARPU) of \$35.60/month they would only need 70,000 subscribers, for twelve months time, to cover the cost of acquiring this spectrum through the "substantial service" spectrum grab. This represents only 2.3 percent of the 3,000,000 population; not even throwing the 1.4 million households into the equation. Relatively speaking, if these EBS licenses are cancelled, they will have picked up this regional bi-county EBS spectrum for very cheap dollars.

So what will happen with this EBS license holder? Who knows... but they had better launch substantive service using the money they are receiving now, or those nice monthly payments will go away. And as an anchor institution in their region and communities, there are going to be many questions to be answered about the money, the service, Clearwire, BOT decisions, etc. if their license is revoked.

## More Evidence of the Clearwire Spectrum Grab – FCC Hearing 06-46

Reference: [http://www.outeach.net/pdf/FCC\\_06-46.pdf](http://www.outeach.net/pdf/FCC_06-46.pdf)

The FCC website has some interesting information related to "substantial service" and the EBS spectrum. In April 2006, a hearing was conducted on modification of the EBS rules/policies. During this hearing Clearwire took some very significant positions (more like opposition), often of which they were the sole representative on proposed changes or modifications to the rules/policies.

These dispositions represent a "CLEAR" viewpoint on the true intentions of Clearwire and are representative of how things are stacking up (lack of use/deployment of Clearwire services using our EBS spectrum) surrounding use of an asset that has been displaced and consumed by corporate greed, convolution and underlying agendas to the point of monopolization and deprivation as to the true intent and use of the asset.

You can download excerpts from the hearing in this summary document at [http://www.outeach.net/pdf/FCC\\_06-46.pdf](http://www.outeach.net/pdf/FCC_06-46.pdf) but here are some of the high (or low) points:

*"Clearwire proposes that licensees should be required to demonstrate substantial service for the first time on the five-year anniversary of the effective date of the new rules, January 10, 2010 (as compared to 5 years after transition, May 1st, 2011) regardless of when they are transitioned to the new band plan or when their licenses are up for renewal. Clearwire also asks that the Commission not give credit for prior, discontinued service. WCA, accompanied by the majority of commenter's, notes that Clearwire is the only party suggesting that licensees have less time to establish substantial service, advocating that all licensees be required to demonstrate substantial service by January 10, 2010. Nextel further points to the fact that Clearwire's hard date of January 10, 2010, would offer BRS/EBS licensees whose transition period ends at the last possible date – October 2009- only three months after that period to establish the requisite level of broadband service. WDBS and other commenter's who oppose Clearwire's proposal noted that "different markets will require different build-out strategies and time frames and such [stringent] requirements [as proposed by Clearwire] would merely hinder business planning." CTN/NIA argue that Clearwire's proposal offers the false prospect that canceling licenses after five years and auctioning them to other potential licensees will somehow result in earlier service to the public, when in reality this would cause substantial build-out delays."*

(cont'd)

*“WCA asserts that Clearwire is incorrect in asserting that a safe harbor based on fixed service links would be inappropriate because BRS and EBS spectrum will not be used to provide backbone support. WCA states that while Clearwire may not be contemplating use of BRS and EBS spectrum to interconnect base stations with each other and with a broader network, other system operators have expressed significant interest in the possibility within a variety of WCA forums and elsewhere. As such, WCA believes that the application to BRS and EBS of the fixed service safe harbor traditionally applied to other Part 27 flexible use services remains appropriate here.”*

*“Clearwire, on the other hand, argues that the substantial service standard should be applied on a per channel group basis, as opposed to system wide. WCA, among others, asserts that Clearwire’s proposal that the Commission require substantial service to be evaluated on a channel group-by-channel group basis is flawed.”*

*“While Clearwire proposes that licensees demonstrate substantial service on a per channel group basis, we believe it is more appropriate to require demonstration of substantial service on a per license basis.”*

## **The FCC’s Position & FCC-08-83A1– A precursor of events to come**

In a phone conversation with an FCC Deputy Chief Broadband Division Wireless Telecommunications Bureau the question of substantial service was posed and in a follow up email the following was presented:

Question: *To be clear, if no substantial service is launched by Clearwire, using EBS licenses leased by Clearwire, prior to the May 1, 2011 deadline, then those licenses would revert to future FCC guidelines surrounding EBS whitespace?*

FCC Response: *If a license is cancelled for failure to meet the May 1, 2011 substantial service deadline, it will become white space. Attached is the notice of proposed rulemaking seeking comment on licensing the EBS white space. Comments in response to that notice are in ECFS under Docket No. 03-66.*

Notice of proposed rulemaking document:

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-08-83A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-83A1.pdf)

Comments: <http://fjallfoss.fcc.gov/ecfs/proceeding/view?name=03-66>

Probably the most intriguing narrative found in the proposed rule making document is found on page 74, section 193 where auction or assigning of the lower band (LBS), middle band (MBS) and upper band (UBS) segments of the EBS are discussed.

*“Other commenter’s recommend that we [FCC] auction the high-power channels in the group separately from the low-power channels in the group. Another alternative would be to license all of the available spectrum in the LBS and UBS as one frequency block and all of the available MBS spectrum as a separate frequency block. We note that in auctioning the BRS spectrum, the Commission auctioned all of the available BRS spectrum in the BTA so that the winning bidder won all of the available BRS channel groups in the BTA. Should we adopt the same policy here and license all of the available channel groups in the geographic area to be licensed? We seek comment on these options.”*

This statement by the FCC surmises everything that has gone wrong to this point surrounding the new EBS rules and policies and also presents the solution to this problem. If EBS licensees were allowed to market and monetize educational applications and services using the middle band segment as a delivery mechanism this would eliminate the need for Clearwire to pay monthly lease payments while providing revenue models to support sustainable adoption of the goals and initiatives borne through reform of our educational system.

Right now the only monetization model for education that is in place is the monthly lease payment from Clearwire to the EBS license holder; and that money, most assuredly extremely undervalued, is being spent on sustaining only day to day operations of the EBS license holder institution that was given this spectrum decades ago.

### **Broadband Radio Service (BRS) Auction 86**

As the BRS is part of the new EBS spectrum the FCC answered its own question posed in the above comment surrounding auction of EBS spectrum. In October 2009 the FCC auctioned 61 BRS licenses in various market BTAs. 42 of the 61 BRS licenses were won by Clearwire totaling \$ 12,285,800.00. The same will happen if any more EBS/BRS spectrum goes to auction.

## The National Educational Broadband Service Association (NEBSA)

Reference: <http://www.nebsa.org>

Billions of dollars have been invested and spent on lease and Clearwire acquisition of the EBS spectrum. The EBS spectrum is now associated with WiMAX; a standard utilized around the world. The EBS spectrum represents a regional asset that all of our community anchor institutions should be aware of and interested in. The EBS spectrum will be transitioned to operate using LTE Release 8 technology and become interoperable with future 700MHz LTE commercial broadband and public safety networks. The EBS spectrum will become an integral part of our new National Broadband Plan. Clearwire has acquired rights to eighty-five plus percent of this asset in the United States.

With all of this in mind, according to the NEBSA:

*"The National EBS Association (NEBSA) is a non-profit corporation renamed from the National ITFS Association in 2007 to bridge the "Present" to the "Future". NEBSA's "Vision" is to accomplish this objective by providing mission critical information and resources for the creation, delivery, installation, implementation and maintenance of Educational Broadband Service (EBS) to all current and prospective EBS licensees.*

*NEBSA's "Goals" are to be the leading advocate for use of the spectrum set aside for education by the FCC, to represent the interests of EBS licensees at the FCC, and to provide an expanded forum for exchange of information and advice on the new technologies, new educational applications, and commercial relationships."*

Now visit the NEBSA website at <http://www.nebsa.org>. The website looks like it was designed and is maintained by a 4th grader with a hodge-podge of broken or misdirected links, a flow that is impossible to navigate and content that is marginal at best with regards to our community EBS spectrum.

In the 'Hot Topics' section is information on an upcoming May 25<sup>th</sup>, 2010 webinar entitled *"MayDay, MayDay, MayDay... What you need to know about "Substantial Service" in preparation for the May 2011 Deadline"*. It costs \$25-50 to participate and when the link is accessed it takes you to information about the NEBSA convention that already took place in February 2010.

So who is running the show over at the NEBSA?

First there is NEBSA Board Member Bruce Braciszewski. Mr. Bracisewski is also Executive Director of the Classroom of the Future Foundation (CFF) whose mission statement is *“to advance public education throughout San Diego County by inspiring business leaders and educators to enhance learning technologies and innovative practices that can measurably improve academic achievement.”*

He has also been:

- Director, Communications, San Diego County Office of Education (1987-1993)
- Director on Special Assignment, Planning & Research, San Diego City Schools (1992)
- Director, Center for Community Education, San Diego County Office of Education (1975-1987)
- Project Director (half-time), California Community Education Project, Policy Analysis Office, California State Department of Education, Sacramento (1978-1980)
- Adjunct Faculty, University of Redlands, Faculty Advisor for M.A. Students in Education, San Diego (1975-1979)

There are a total of 41 Educational Broadband Service (EBS) licenses covering San Diego County. All of these EBS licensees are responsible for meeting educational substantial service guidelines and/or services by May 2011 or they will lose their licenses. Based upon the mission statement of the NEBSA, not to mention the mission statement of Classroom of the Future Foundation, one would think that some best practices wireless technology infrastructure models would be emanating from this region using the Educational Broadband Service spectrum since Classroom of the Future operates out of San Diego. These regional EBS license holders are school districts, community colleges, state colleges, educational foundations, and technical universities. So where is the infrastructure that could benefit the thousands of students and teachers within this region... non-existent.

Why hasn't this happened? On the Board of Directors / Advisory Board of Classroom of the Future are two executives from Cox Communications, a VP from AT&T and a VP from Time Warner Cable. As Time Warner has established that they will be selling their "4G RoadRunner" services using Clearwire's leased spectrum, and as Cox and Time Warner both cover San Diego County (split) with their existing TV cable, hard line internet access and VoIP, a quagmire exists because Cox acquired rights to the future 700MHz LTE wireless mobile services while Time Warner would be dependent upon Clearwire's 2.5GHz Educational Broadband Service (EBS) spectrum for delivery of their mobile services. This means that in order for Time Warner to remain competitive within this market Clearwire will have to transition their EBS spectrum holdings from WiMAX to LTE; and there is plenty of evidence that Clearwire will do just that. Search link here:

<http://www.google.com/#q=clearwire%20dump%20wimax&hl=en&source=Int&tbs=qdr:y&sa=X&psj=1&ei=damkTKaCfYKClAe-xLSIDA&ved=0CA8QpwU&fp=d49d7acff954e60e>

This San Diego market represents a perfect example of how the 700MHz and 2.5GHz EBS will become interoperable and necessitate roaming and hand-off agreements between AT&T, Verizon, Cox and Clearwire (Comcast, Time Warner) in order for end-users to have access to just one ubiquitous mobile wireless account from which to access the plethora of bandwidth intensive services and applications we will demand in the future. Please see *2.5GHz EBS Transition to LTE Release 8*

So where does this leave 2.5GHz EBS license holders? As they are responsible for launching substantial service prior to the FCC May 2011 deadline, are they to launch using equipment that will become outdated and needed to be replaced within a year? What about all the customer premise equipment (dongles, modems, etc.) that will need to be changed out? This by itself should be enough for the FCC to eliminate the May 2011 deadline for substantial service in the 2.5GHz EBS arena.

Also on the Board of Directors / Advisors of CFF are two representatives of Sony Corp. Sony just announced a partnership with IPWireless in which Sony and IPWireless have agreed to jointly research and develop wireless technologies for 4G networks and beyond.

[http://www.google.com/#q=sony+ipwireless&hl=en&prmd=s&source=Int&tbs=qdr:m&ei=Md\\_3S-DMD4KdlgfUlqHECg&sa=X&oi=tool&resnum=6&ct=mlink&ved=0CBAQpwU&fp=e566b05060ea9f2e](http://www.google.com/#q=sony+ipwireless&hl=en&prmd=s&source=Int&tbs=qdr:m&ei=Md_3S-DMD4KdlgfUlqHECg&sa=X&oi=tool&resnum=6&ct=mlink&ved=0CBAQpwU&fp=e566b05060ea9f2e)

You know that before a company like Sony inks a deal with a single 4G equipment provider they would have performed extensive due diligence and research. It also speaks volumes as to Sony's commitment to an equipment provider outside of the current Clearwire eco-system.

IPWireless has proven technology operating in both the 700MHz and 2.5GHz EBS spectrum. This represents a great opportunity for San Diego County to bring in some gear and launch both public safety and educational services and applications using the 700MHz and 2.5GHz spectrum, respectively. Mention of public safety is relevant here as IPWireless launched, in cooperation with Northrop Grumman, a public safety network in New York City, using just 10Mhz of the 2.5GHz EBS.

[http://www.google.com/#sclient=psy&hl=en&tbs=qdr%3Ay&q=ipwireless+northrop+grumman&aq=f&aqi=&aql=&oq=ipwireless+northrop+grumman&gs\\_rfai=&psj=1&fp=d49d7acff954e60e](http://www.google.com/#sclient=psy&hl=en&tbs=qdr%3Ay&q=ipwireless+northrop+grumman&aq=f&aqi=&aql=&oq=ipwireless+northrop+grumman&gs_rfai=&psj=1&fp=d49d7acff954e60e)

And now that the FCC has cleared the way for Public Safety Agencies throughout the Country to begin construction of public safety networks using the 700MHz D block it would certainly make sense for regional public/private partnerships to explore concurrent build out of both public safety and educational infrastructure as both will be utilizing the same regional assets (tower locations, fiber, etc.) in constructing their networks. Please see *700MHz Public Safety & 2.5GHz Educational Broadband Service; A comparison of FCC models*.

Another board member of the NEBSA, Bob Finch, runs an EBS consulting firm called Cirpass, LLC. The Cirpass mission statement is as follows:

Reference: <http://cirpass.net/>

*“Cirpass is dedicated to supporting EBS licensees and the education communities they serve. The Cirpass partners have more than 25 years of combined business and technology experience gained from managing the spectrum assets of major telecommunication companies.”*

Back in 2004 Mr. Finch suspended Cirpass activity and joined Nextel as its Vice President, Spectrum Development. He accepted primary responsibility for expanding and improving Nextel's BRS and EBS license and lease assets for a major roll-out of 4G wireless services. Bob's role expanded with the Sprint merger and was completed with the spinoff of Sprint Nextel's WiMAX and 2.5 GHz spectrum assets to Clearwire at the end of 2008.

Starting in 2004 Sprint, Nextel and Clearwire were actively pursuing EBS Boards of Trustees to lease their respective Educational Broadband Service (EBS) spectrum for commercial use. At that time this presented very lucrative revenue opportunities for individuals like Mr. Finch and outside EBS lease counsel and/or their firms. This culminated in a snowball effect amongst EBS Boards of Trustees who in most cases were unaware of this asset and the value of this asset to the community. They were offered what could be considered, in their eyes, a lot of money.

In essence, this would define the role of the NEBSA as an organization whose sole purpose was to support the leasing of the EBS spectrum to a monopoly in the form of the “new” Clearwire, as per the outgoing FCC ruling on Election Day 2008.

<http://www.fcc.gov/transaction/sprint-clearwire.html>

Based upon the misleading statements that were presented to Congress when transition of the old ITFS to EBS was introduced (see *History of the Educational Broadband Service Spectrum*), the resulting events and rulings since this transition, the amount of money that has been vested to this point, and the lack of NEBSA public transparency and awareness surrounding lease of what could be considered an extremely valuable regional or community asset should represent every reason for Congress to examine, investigate and scrutinize the transition of the Educational Broadband Service spectrum and invite public comment on future models with regards to how this asset can be best utilized and monetized for the benefit of regional education reform as introduced through the ARRA, Race to the Top and other education reform goals and initiatives.

## State & Regional Challenges – Education Reform

In the video below (link provided), Race to the Top Director Joanne Weiss talks about the challenges our States face in identifying assets, developing and replicating models using these assets, and how important Local Education Agency (LEA) support is in changing their practices while sustaining programs and initiatives borne from Race to the Top. She goes on to talk about the challenges in scaling reform beyond the "islands of excellence" that we see at the individual school or district level and how these individual point solutions get stalled by the systemic inertia that is built into our current education system.

At the very core of these challenges is utilization of the FCC licensed Educational Broadband Service (EBS) spectrum as a delivery mechanism to support the many educational services and applications that will become a part of the daily lives of students, teachers, parents and administrators as we shift to 21st century paradigms... thus the true intent and purpose of the EBS spectrum.

The challenge is that the EBS spectrum is lost in the same "systemic inertia" that is the FCC and traditional "commercial" broadband revenue and operating models of incumbent lessees (Clearwire) that now control this spectrum -- with little or (in most cases) no end-user support in current markets where this EBS spectrum is leased and ready for use. Due to this lack of use, our community anchor institutions are in danger of losing this most valuable community asset within the coming year (May 1, 2011 FCC deadline for educational use). The last thing we would want is for this very valuable remaining community asset to end up on the FCC auction block for the taking. This process would inevitably lead to long delays in use of this asset as this process would take years to transition ownership and finalize, not to mention the fact that the spectrum would be used for commercial use only.

**Therefore, the same reform and transformation (changing of practices) that will take place in our educational system needs to be applied to our inherent community-based Educational Broadband Service (EBS) spectrum assets that most assuredly can drive regional LEA participation and become a dedicated delivery vehicle of 365/24/7 anytime/anywhere access to future educational and workforce system data, components, content, services and applications while providing needed revenue for sustaining of regional R2T programs.**



<http://learningmatters.tv/blog/on-the-newshour/race-to-the-top-bonus-video-joanne-weiss-running-the-race/3795/>

## 2.5GHz EBS Transition to LTE Release 8

As the rules and policy changes to the EBS band greatly affected the value and use (or more appropriately, lack of use) of the EBS spectrum the next transition that will take place is even more interesting.

No doubt that most people were aware of the switch to "Digital TV" back in June 2009. This was directly associated with the freeing up of the 700MHz spectrum for broadband use. \$19.2 billion dollars was generated through the auction of this 700MHz spectrum of which the clear winners were AT&T and Verizon. They plan on using this spectrum to launch services using LTE (long term evolution, how appropriate) release 8 technology standards.

This is good stuff for us end-users when it propagates on a national level. And as this technology is being developed and tested the 2.5GHz EBS will most assuredly migrate away from the current "WiMAX" 802.16n standards to adopt the same release 8 LTE standards. This makes perfect sense as why would anyone want two competing technologies, offering the same content and services, having to provide redundant content delivery systems just to accommodate two different delivery technologies.

This transition is also very necessary to accommodate all the bandwidth intensive content we will demand in the future. This will include mobile, fixed and nomadic access for three-screens digital media, hosted video platforms, video servers, CDN (content delivery networks), publishing platforms, technology platforms for rich media, encoding/transcoding, DRM (Digital Rights Management) and content security, client software, streaming, players, asset management, streaming and delivery platforms, HD-VOD (HD Video on Demand), hybrid set-top boxes, carrier and over-the-top enabled devices, broadcast and streaming, CE device streaming platforms, software platforms for three-screens services, just to mention a few.

So due to this inevitable transition, the EBS spectrum will ultimately increase in value (thus another reason for Clearwire to exploit "substantial service" rules and policy leading to them "owning" the EBS spectrum). The revenue that could be generated from sub-leasing 2.5 GHz spectrum to LTE content providers would be extremely lucrative. The "WiMAX" brand may still hold value in that we, as end-users, would like to know which network we are accessing (2.5GHz or 700MHz) and for what services, but in the end most end-users won't even care... just delivery me my content and bill me using one, ubiquitous account.

This ultimately is what everything is about... content. In the future it will not be how we access the internet or communicate; it will be about what content and communications services we demand. That will represent the bulk of our monthly costs. So it makes perfect sense to allow our regional content providers (schools, governments, employers, etc.) to offer content services, derive revenue from those services, and keep that money flowing within the respective regions using regional assets... namely, a piece (middle band channels) of our regional EBS spectrum.

## 2.5GHz EBS Transition to LTE Release 8 (cont'd)

In defense of Clearwire, the latest news surrounding this transition of the 2.5GHz EBS to LTE could explain many things and also provide EBS license holders with a means to request an extension or even termination of the substantial service deadline.

This potential request comes on the heels of Clearwire announcing that the Company had changed the terms of an agreement it had with Intel, one of its largest investors, which could lead the way for Clearwire to dump WiMAX and switch to LTE.

The quagmire of this whole situation is that if EBS license holders, and for that matter Clearwire, was responsible for building out substantial service and bearing that cost, prior to May 1st, 2011. Why would they do so using technology and equipment that would have to be upgraded and changed out -- especially the customer premise equipment (CPE, dongles, modems, etc.)?

This is perplexing in that most leases proposed that Clearwire would "assist" EBS license holders in building out safe harbor requirements for substantial use and in many cases Clearwire may be in breach of contract surrounding "Substantial Service; Commencement of Construct" terms of the lease based on their desire to switch to LTE.

In essence, the switch to LTE makes total sense based upon the desire to have interoperable networks and content delivery using the licensed 700MHz and 2.5GHz EBS. This switch could also provide Clearwire an excuse as to why they would be in breach of their lease agreements relative to "assisting" EBS license holders in building out substantial service or the "Substantial Service; Commencement of Construct" clause. But where does this leave the asset... the EBS spectrum?

One thing that we do know is that Clearwire would prefer to load all EBS license substantial service surrounding educational use onto the middle band channels of the EBS spectrum (see *Language of the Lease*). So if the FCC starts revoking EBS licenses come May, 2011 and this spectrum goes to auction, then the FCC should consider separate auction of the upper and lower bands for commercial use and the middle band for educational use. They implemented the same type of scenario for the 700MHz (LTE) auction (January 2008) in that they separated out for auction a segment of the available 700MHz (D block) for bid and use for a nationwide public safety network run by a public/private partnership. Perhaps the same should be done for education, through regional public/private partnerships, using the middle band channels of the EBS spectrum. (See *700MHz Public Safety & 2.5GHz Educational Broadband Service; A comparison of FCC models*)

This scenario would enable all qualifying educational service and application providers to bid on regional 2.5GHz geographical service areas and partner with EBS license holders in operation of a regional EBS network using the middle band channels. These services would be in line with and facilitate transformation of educational and workforce systems as presented by DOE R2T initiatives and programs, our States, and regional local education agencies (LEAs). This swath of spectrum would also represent a means towards revenue generation, derived from the spectrum, services and applications, to sustain regional educational and workforce reform models.

This entire scenario still does not alleviate the fact that Clearwire is making a play towards ownership of this spectrum; it does however provide a path to a win-win scenario (see *Solutions*).

## The Language of the Clearwire Lease – Reserve Capacity, Middle Band Channels & Substantial Service

The availability of the EBS spectrum middle band channels represents a clear and definitive infrastructure in the building of regional revenue generating educational and workforce models representative of programs like Race to the Top, STEM (Science, Technology, Engineering, Mathematics) research and programs, and “Green” environmental, entrepreneurship and jobs creation for all of our States and regional service areas. The language of the Clearwire lease states:

- EBS License Holders may use reserve capacity for noncommercial, governmental, administrative, and educational or research purposes to satisfy the minimal educational use requirements pursuant to FCC minimum use requirements. Licensee may lease or permit use of its Reserve Capacity, provided that such capacity is used only for noncommercial [governmental, administrative, educational or research] purposes consistent with Licensee’s educational mission and/or satisfaction of its educational minimum use requirements;
- Clearwire will allow the EBS License Holder, at its sole cost and expense, to make use of the middle band channel(s) for educational operations so long as use does not interfere with their commercial operations;
- **EBS License Holders may request** the use of all or substantially all of the mid-band channels at their own expense;
- **Substantial Service; Commencement of Construct** – No later than [deadline date listed here in lease] Clearwire will construct and maintain facilities as may be necessary to satisfy the FCC Rules in Section 27.14(e) or a successor rule section concerning substantial service (the “Substantial Service Requirements”) for the Channels within the time periods specified therein for renewal of the Licenses.

No lessor has taken advantage of these stipulations simply because they thought that Clearwire would be “taking care of everything”. This is also representative of the lack of attention paid by BOTs, or their assignees, relative to maintaining or even launching service using an asset that has generated significant revenue for their institution since signing a lease with Clearwire.

Do they jeopardize that steady flow of income in return for calling Clearwire out on use of the middle band channels to launch substantial service? Are they to task their existing IT/IS Departments with the workload associated with building out substantial service safe harbor requirements?

Chances are that the same phenomena that presented when they were originally approached about leasing their EBS spectrum will take place as this substantial service deadline approaches.

That is to say that when these BOTs were approached about leasing their EBS spectrum a good number of EBS license holders did not even know that this asset existed, and that they had the rights to it. They then clamored about to check on the status of their EBS license and in most cases it needed to be renewed before they could lease. So in their minds, considerable resources were used to renew these licenses and a collective “whew” filled their chambers when they saw their license was renewed for years to come. Now they can get their money.

The FCC made stipulations during this process that EBS license holders would have time to renew their licenses prior to leasing their spectrum. Clearwire actually fought this in the beginning saying that EBS license holders should not have the rights to renew a license they were not even aware that they had – but this ruling prevailed and EBS license holders were allowed to renew.

The FCC may not be so accommodating when it comes to this substantial service deadline. EBS license holders’ only savior may be the lease itself as the Clearwire lease (or other lessee) may have breached in some way stipulations related to “substantial service” or “assist” clauses. This can only be determined on a case by case basis and the presence of any lease language pertaining to “substantial service” or “Commencement of Construct” commitments related to substantial service.

Just as BOTs were clamoring to check the status of their EBS licenses when first approached about leasing, they will (should) now be looking to their lease and examining any language or clauses related to “substantial service”, FCC Part 27.14, or anything related to “assisting the Licensee” as this deadline approaches. This may represent the only way that these regional or community anchor institutions can keep their licenses as actual construction of a “substantial service safe harbor network” using the 2.5GHz EBS will take some time.

### **Public Filing of EBS Spectrum Leases**

Licensees were not required to file copies of EBS leases because (1) there is no evidence that abusive practices exist in EBS leases, (2) there is a burden associated with filing, and (3) they may contain commercially-sensitive information.

If there is no evidence of abusive practices surrounding the lease of our regional EBS excess capacity then why wouldn’t these leases be made public? Our community anchor institutions are the EBS spectrum owners, they are receiving upfront and monthly payments – what are they doing with the money? Are they protecting what could be considered a very valuable regional or community asset?

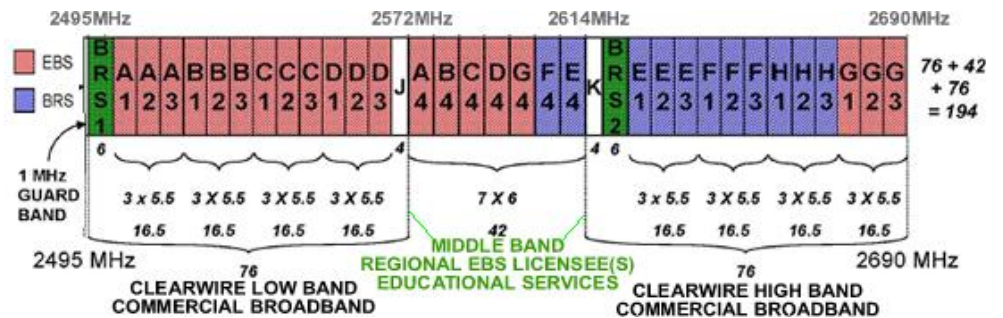
And had these leases been made public our growing “digital native” (younger generation) culture would have surely kept a sharp eye on this asset and BOTs to make sure that it did not revert to a commercial operator or end up on the auction block for the taking.

## 700MHz Public Safety & 2.5GHz Educational Broadband Service; A comparison of FCC models

The FCC is probably unaware that they may have stumbled upon the perfect solution when it comes to defining the final rules and policy surrounding allocation and deployment using the 2.5GHz Educational Broadband Service spectrum; and this model lies in the streamlined processes just recently introduced in build out of our nationwide 700MHz Public Safety network.

As Clearwire and their investors have billions wrapped up in securing use of the Educational Broadband Service spectrum for commercial broadband services it is important not to disrupt the core premise of the acquisition and future operating and revenue models that the past FCC had supported in Clearwire launch of the EBS spectrum.

As defined by the Clearwire lease structure the Company would prefer to load any and all educational services on to the middle band channels of the EBS spectrum. This represents a total of 42MHz of bandwidth that would be available for these services. See diagram below...



A simple re-monetization and spectrum allocation schedule would allow Clearwire to maintain their long term leases in markets where they have leased and launch service *without* the burden of monthly lease payments. Monetization for the regional EBS license holders would be borne from educational content services using the middle band channels in partnership with the likes of Microsoft, Monster, IBM, Pearson or any other qualifying educational service provider meeting assurances of the regions' educational public/private partnership, State DOE, Race to the Top or other governing agency.

As a result, Clearwire would maintain their average rate per user (ARPU) in marketing access to their fixed, nomadic and mobile services to all non-educational users within the defined basic trading area (BTA) while EBS license holders, and their educational service provider partners, would market access to an interoperable fixed, nomadic and mobile network with adjunct educational services to support statewide goals and initiatives.

Assuming that Clearwire would like to eliminate the \$260 million yearly lease expense from their books let's look at how the FCC's 700MHz Public Safety model can be mirrored in the 2.5GHz Educational Broadband Service spectrum arena; but first a brief history of the 700MHz band and auction.

As with the 2.5GHz EBS, the FCC was hoping for a competitive marketplace in the development and deployment of the 700MHz spectrum. It was also the goal of the FCC to receive bids on the 700MHz D Block (Public Safety) auction (January 2008) that would have provided a much needed nationwide public safety network to be implemented during times of a national emergency or terrorist attack. None of this happened.

AT&T and Verizon were the big winners in the 700MHz commercial auction and the Public Safety D Block did not meet the reserve price of \$1.33 billion, so it was still out there. Congress and the FCC have now provided a streamlined process to get this Public Safety Network built and operational.

There was also some controversy surrounding the D Block auction in that Frontline Communications was ready to work with the PSST (Public Safety Spectrum Trust) but all of the sudden ended up closing their doors just weeks before the auction was to take place. This left little time for other companies to pull resources and bid.

Then rumors surfaced that this piece of spectrum would be auctioned as commercial broadband thus firing up the interests, once again, of the incumbent winners in the A,B,C, and E blocks of the 700MHz spectrum.

But the fact still remains that a 'du-opoly' came out of the 700MHz commercial side, very similar to the monopoly that was created when the FCC approved consolidation of most all 2.5 EBS spectrum leases under the new Clearwire.

The FCC may have allowed this du-opoly to be created based solely on their recent decision to allow qualifying state, county and local public safety agencies to apply for NTIA grants and subsequent build out of their own public safety networks. This decision will greatly diminish current bottom lines of both AT&T and Verizon and effect future revenue and operating models of both companies.

Why? Almost every mobile laptop in police patrol cars, ambulances, fire trucks and EMS vehicles uses an "air card" from either AT&T or Verizon. At an average cost of \$50 per month one only needs to do the math to figure out the amount of revenue that will be slowly diminishing from AT&T and Verizon bottom lines as these new public safety networks are launched; which translates to increased consumer costs for future LTE commercial services.

In determining that the FCC has no qualms in greatly altering the future operating and revenue models of behemoth incumbent carriers, and establishing the fact that the FCC has emphasized the importance of a nationwide public safety network in doing so, let's examine how a very similar model would benefit state, county and local educational agencies (LEAs).

**Existing 700MHz Model  
AT&T / Verizon Commercial Services  
10 MHz D Block Public Safety**

**Required LTE**

**Governing Agencies  
PSST, ERIC**

**Regional Public / Private  
Partnerships (required)**

**RFP Process / Funding**

**New 2.5GHz EBS Model  
Clearwire (Comcast, Time Warner) Commercial Services  
42MHz Middle Band Educational Services**

**Required LTE**

**Governing Agencies  
REVAMPED NEBSA,  
State EBS Associations**

**Regional Public / Private  
Partnerships (required)**

**RFP Process / Funding**

As one can see the new 2.5GHz EBS Model is very similar to the model that will be used to build out the nationwide 700MHz Public Safety Network. If we drill down on the aspects of each model we arrive at a solution that presents:

- Considerable costs savings in build out of infrastructure as both networks will be using the same or new regional backhaul assets (towers, fiber, etc.);
- An interoperable 700MHz and 2.5GHz LTE network that can provide bandwidth specific services and applications (Public Safety, Education) as well as redundancy;
- Sub-leasing, hand-off and roaming capabilities between the networks to provide ubiquitous end-user commercial broadband services and applications;
- A sustainable revenue model using the EBS middle band that would provide ongoing residual monies to support all education facilities and agencies within respective regional (expanded) EBS GSAs/BTAs while eliminating monthly Clearwire EBS lease payments (OpEx);

This model goes hand-in-hand with comments submitted to the FCC in response to [FCC-08-83A1](http://fjallfoss.fcc.gov/ecfs/comment/view?id=6015190340) from the American Association of School Administrators (AASA).

Comments from AASA:

<http://fjallfoss.fcc.gov/ecfs/comment/view?id=6015190340>

The twelve educational organizations backing these comments include:

American Association of School Administrators (AASA)  
Association of Educational Service Agencies (AESA)  
Association of School Business Officials (ASBO)  
Consortium for School Networking (CoSN)  
International Society for Technology in Education (ISTE)  
National Association of Independent Schools (NAIS)  
National Association of State Boards of Education (NASBE)  
National Education Association (NEA)  
National Rural Education Association (NREA)  
National School Boards Association (NSBA)  
Organizations Concerned about Rural Education (OCRE)  
Rural School and Community Trust

These organizations are at the very core of educational reform as they represent the teachers, administrators, school boards, school districts and consortia that will be implementing and experiencing firsthand the educational reform goals and initiatives introduced through the DOE.

They state in their comments that:

*“The licensing process needs to reflect the reality that in most instances spectrum will be leased to commercial providers and that the principal benefit of EBS to schools is the opportunity to obtain revenues from such leases. At the same time, the process should be flexible enough to allow educational entities to operate facilities, if they so choose.”*

Therefore, the FCC needs to take a serious look at how they are providing states, counties and local public safety agencies with streamlined processes for applying for, getting funding for and ultimately deploying these public safety networks and apply the same principals and synergies for state, county and local education agencies.

## Solutions

There are clear and definitive steps that can be implemented to assure that:

- EBS license holders can maintain their licenses within their regional geographical service areas and launch regional Education and Workforce Development (ED/WF) development models in line with ED/WF reform; and
- Clearwire can reduce CapEx and OpEx, improve their branding capabilities, and maintain much higher bottom lines compared to what they are realizing right now and in the future.

**Step 1** - The DOE and the FCC need to meet and educate each other on current assessments and needs surrounding ED/WF and EBS spectrum reformation models. This would include the indefinite or permanent lifting or termination of the "substantial service" deadline date of May 1, 2011. This is priority number one.

**Step 2** - Clearwire needs to draft a memorandum of intent to all their lessors that they intend to:

- Stop monthly lease payments to EBS license holders (reduce Clearwire OpEx);
- New lease agreements will be enacted cancelling the "de facto lease transfer" and migrating to a "spectrum management" lease agreement encompassing the same licenses/channels in the "upper" and "lower" band segments covered under the original lease;

## Solutions (cont'd)

- EBS license holders will be allowed to put out to bid the building out of infrastructure, using the middle band channels, and ED/WF services, concurrently, based upon the needs and requirements of the region and any stipulations as set forth by federal and state DOE. EBS license holders will bear all costs associated with middle band segment build out and marketing through available funding resources;
- Regional EBS license holders will be able to market bundled service packages to and receive all revenue from qualifying non-profit educational and workforce development agencies to include students, teachers, student households, administrators, local education agencies (LEAs), libraries, schools, colleges, regional employer groups and governments. The net revenue generated from these services will be managed by a regional public/private partnership to flow back to the EBS license holder as well as the aforementioned beneficiaries and to sustain the reform programs;
- As regional EBS license middle band infrastructure will be deployed and implemented first, the equipment/service provider chosen for build out of the middle band infrastructure will build in provisions for Clearwire equipment associated with chosen tower locations, bandwidth needs, pipes, fiber access, etc. for use in commercial operations and marketing associated with the upper and lower band segments of the EBS license. This would greatly reduce Clearwire CapEx and in most cases Clearwire could contract with the middle band provider to mount Clearwire radios and other necessary field equipment (immediate regional job creation);
- As Clearwire is no longer responsible for monthly lease payments, a percentage of net profits from commercial operations (non-qualifying ED/WF agencies) will flow back to the same regional public/private partnership to sustain/support regional (LEA) programs/initiatives;
- The Clearwire revenue share ceiling would be limited to the difference in revenue generated from ED/WF minus the original monthly lease payment. That is to say that if \$100,000 per month was generated from ED/WF services using the middle band channels, and Clearwire's original lease payment to this EBS license holder was \$70,000/month, then Clearwire would not be required to pay any monthly to that EBS license holder;
- Should any EBS spectrum end up at FCC auction then the upper/lower bands should be auctioned to bid by commercial carriers while the middle band channels would be auctioned to bid only by qualifying ED/WF application and service providers in line with new DOE/FCC guidelines; and
- The FCC and equipment/chip manufacturers should facilitate transition to LTE technology standards as soon as possible.

## APPENDIX A - Substantial Service Requirements

(a) AWS and WCS licensees must make a showing of “substantial service” in their license area within the prescribed license term set forth in § 27.13. “Substantial” service is defined as service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal. Failure by any Licensee to meet this requirement will result in forfeiture of the license and the licensee will be ineligible to regain it.

(b) A renewal applicant involved in a comparative renewal proceeding shall receive a preference, commonly referred to as a renewal expectancy, which is the most important comparative factor to be considered in the proceeding, if its past record for the relevant license period demonstrates that:

- (1) The renewal applicant has provided “substantial” service during its past license term; and
- (2) The renewal applicant has substantially complied with applicable FCC rules, policies and the Communications Act of 1934, as amended.

(c) In order to establish its right to renewal expectancy, a WCS renewal applicant involved in a comparative renewal proceeding must submit a showing explaining why it should receive renewal expectancy. At a minimum, this showing must include:

- (1) A description of its current service in terms of geographic coverage and population served;
- (2) An explanation of its record of expansion, including a timetable of new construction to meet changes in demand for service;
- (3) A description of its investments in its WCS system; and
- (4) Copies of all FCC orders finding the licensee to have violated the Communications Act or any FCC rule or policy; and a list of any pending proceedings that relate to any matter described in this paragraph.

(d) In making its showing of entitlement to renewal expectancy, a renewal applicant may claim credit for any system modification applications that were pending on the date it filed its renewal application. Such credit will not be allowed if the modification application is dismissed or denied.

**(e) BRS and EBS licensees must make a showing of “substantial service” no later than May 1, 2011.** Incumbent BRS licensees must file their “substantial service” showing with their renewal application. “Substantial service” is defined as service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal. Substantial service for BRS and EBS licensees is satisfied if a licensee meets the requirements of paragraph (e)(1) or (e)(2) of this section. **If a licensee has not met the requirements of paragraph (e)(1) or (e)(2) of this section, then demonstration of “substantial service” shall proceed on a case-by-case basis.**

(cont’d)

## APPENDIX A - Substantial Service Requirements (cont'd)

All substantial service determinations will be made on a license-by-license basis. Except for BTA licenses, BRS licensees must file their “substantial service” showing with their renewal applications. Failure by any licensee to meet this requirement will result in forfeiture of the license and the licensee will be ineligible to regain it.

**(1)** A BRS or EBS licensee has provided “substantial service” by:

- (i)** Constructing six permanent links per one million people for licensees providing fixed point-to-point services;
- (ii)** Providing coverage of at least 30 percent of the population of the licensed area for licensees providing mobile services or fixed point-to-multipoint services;
- (iii)** Providing service to “rural areas” (a county (or equivalent) with a population density of 100 persons per square mile or less, based upon the most recently available Census data) and areas with limited access to telecommunications services:
  - (A)** For mobile service, where coverage is provided to at least 75% of the geographic area of at least 30% of the rural areas within its service area; or
  - (B)** For fixed service, where the BRS or EBS licensee has constructed at least one end of a permanent link in at least 30% of the rural areas within its licensed area.
- (iv)** Providing specialized or technologically sophisticated service that does not require a high level of coverage to benefit consumers; or
- (v)** Providing service to niche markets or areas outside the areas served by other licensees.

**(2)** An EBS licensee has provided “substantial service” when:

- (i)** The EBS licensee is using its spectrum (or spectrum to which the EBS licensee’s educational services are shifted) to provide educational services within the EBS licensee’s GSA;
- (ii)** The EBS licensee’s license is actually being used to serve the educational mission of one or more accredited public or private schools, colleges or universities providing formal educational and cultural development to enrolled students; or
- (iii)** The level of service provided by the EBS licensee meets or exceeds the minimum usage requirements specified in § 27.1214.

**(3)** An EBS or BRS licensee may be deemed to provide substantial service through a leasing arrangement if the lessee is providing substantial service under paragraph (e)(1) of this section. The EBS licensee must also be otherwise in compliance with this chapter (including the programming requirements in § 27.1203).