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RPTS WALKER

DCMN HOFSTAD

USING SPECTRUM TO ADVANCE PUBLIC
SAFETY, PROMOTE BROADBAND, CREATE
JOBS, AND REDUCE THE DEFICIT
TUESDAY, APRIL 12, 2011
House of Representatives,
Subcommittee on Communications
and Technology,
Committee on Energy and Commerce,
Washington, D.C.

The subcommittee met, pursuant to notice, at 1:30 p.m., in Room 2123, Rayburn House Office Building, Hon. Greg Walden [chairman of the subcommittee] presiding.

Present: Representatives Walden, Terry, Shimkus, Blackburn, Bilbray, Bass, Gingrey, Scalise, Latta, Guthrie, Kinzinger, Upton (ex officio), Markey, Matsui, Barrow, Dingell (ex officio), and

Waxman (ex officio).

Staff Present: Ray Baum, Senior Policy Advisor/Director of Coalitions; Michael Beckerman, Deputy Staff Director; Andy Duberstein, Special Assistant to Chairman Upton; Neil Fried, Chief Counsel, C&T; Debbie Keller, Press Secretary; Carly McWilliams, Legislative Clerk; Jeff Mortier, Professional Staff Member; David Redl, Counsel, Telecom; Roger Sherman, Minority Chief Counsel; Shawn Chang, Minority Counsel; Jeff Cohen, Minority Counsel; Sarah Fisher, Minority Policy Analyst; and Pat Delgado, Chief of Staff for Mr. Waxman.

Mr. Walden. We are going to call to order the Subcommittee on Communications and Technology and open our hearing on "Spectrum to Advance Public Safety, Promote Broadband, Create Jobs, and Reduce the Deficit."

We are here this afternoon for a broad overview on how spectrum can help expand broadband availability, advance public safety, help broadcasters further innovate, create jobs, and reduce the deficit. Spectrum is a critical input for broadcast television, wireless voice and broadband services, and public-safety communications. As a former radio broadcaster and licensed ham radio operator, spectrum is a medium with which I am somewhat familiar. These critical uses of spectrum have shaped the way Americans live, work, and stay connected to their families and the world.

None of the services we enjoy today would be possible without the hard work of the FCC and the NTIA, who manage the commercial and governmental spectrum assets of the American people. The FCC's commercial-licensing process has evolved over time from lotteries -- literally ping-pong balls in a machine like a Mega Millions drawing -- to the so-called "beauty contests" of competitive hearings. The FCC has used a number of tools over the years to determine who would receive licenses and for what purposes.

But, in 1993, Congress found a way that not only put spectrum

to better use but raises money for taxpayers in the process. Spurred in part by Nobel Prize-winning work of Dr. Ronald Coase and "A Beautiful Mind"'s Dr. John Nash, the Congress to the bold step of reducing the government's role and letting the market decide through government auctions how spectrum should be allocated for commercial wireless services.

Since the FCC began auctions of spectrum for commercial mobile radio services, they have been a resounding success, producing a vibrantly competitive and innovative wireless industry and generating more than \$50 billion for the Treasury.

In the last major spectrum auction, which covered the spectrum vacated as part of the DTV transition, Congress allocated 24 megahertz of spectrum for public safety, provided \$1 billion for public-safety equipment, and raised nearly \$20 billion through auction of spectrum for commercial wireless services. That auction is largely responsible for the 4G wireless broadband services coming on line today.

Today, we will begin discussing how we will get the next wave of spectrum deployed. There is growing consensus we need between an additional 100 megahertz and 300 megahertz in the short term, say, 5 to 10 years, to meet the exploding consumer and economic demand for wireless broadband. Given the staggering growth in smartphone sales, App Store sales, and demand for streaming video content, it is no surprise that the FCC's National Broadband Plan and the President of the United States are calling for an

additional 500 megahertz of spectrum to be allocated for wireless broadband use in the next 5 years.

There are a variety of options that could be used in combination to start addressing this need. There are bands of spectrum that are already close to ripe for auction. For example, spectrum in the Advanced Wireless Services band is currently clear. If paired with other spectrums, such as some currently held by government users, that spectrum could be auctioned in the near future.

This raises a related issue. The Federal Government is a major tenant on Federal spectrum. There may be opportunities to make government use more efficient, clear some spectrum for commercial purposes, and use some of the auction proceeds to pay for the cost of relocating the government and improving agency communications facilities. The Commercial Spectrum Enhancement Act is designed to do some of that, but that act could potentially, itself, use some enhancing to make the government clearing process smoother.

There is also the 700 megahertz D block, 10 megahertz of spectrum that was designated for commercial use in the DTV transition. This spectrum is separate from the 24 megahertz already cleared for public safety in the DTV legislation based on recommendations of the 9/11 Commission.

Some advocate allocating the D block to public safety, as well. Others say it should be auctioned to meet our growing

commercial wireless needs and that funding, not spectrum, is the key to creating the nationwide interoperable public-safety broadband network that we all seek. Indeed, the auction approach was the central plank of the FCC's National Broadband Plan. That approach enjoyed bipartisan support last Congress in this committee, and I look forward to examining this issue again.

While we are on the topic of D block, I want to thank Senator Gorton and Deputy Chief Dowd for being here today. I think I can speak for all of us when I say we thank you for your commitment to public safety and look forward to a vibrant discussion of the communications needs of America's first responders.

Another potential tool is incentive auctions, in which current FCC licensees can volunteer to relinquish some or all of their spectrum in exchange for a portion of auction proceeds. This can present a win-win-win situation for participating licensees, auction bidders, and the U.S. Treasury.

While broadcast television spectrum holds great potential as a candidate for voluntary incentive auctions, it is by no means the only option. There are many other spectrum licensees who may be willing to participate in incentive auctions. So I look forward to a robust discussion of how incentive auctions could be applied to licensees of all sorts as an economic tool to maximize the value of spectrum to existing licensees, potential bidders, and the Treasury.

While there have been a lot of discussions about innovation

in the wireless communications space, innovation is not limited to that industry alone. America's broadcasters continue to work to bring innovative services to over-the-air television viewers. But the broadcasting rules in Title III of the Communications Act are a relic to an era that could not have imagined the technological changes that we have seen in the communications sector.

Could incentive auction legislation help provide capital for broadcasters to explore new-generation services such as mobile DTV and broadband-like broadcast services? Could that legislation help strip regulatory obstacles that are hindering broadcasters' continuing efforts to innovate and bring novel services to the U.S. TV airwaves? Innovation should be encouraged to flourish in every part of the spectrum marketplace.

So I thank all of our witnesses for their participation today, and I look forward to their testimony.

With that, I would now recognize the ranking member of the full committee, Mr. Waxman, for an opening statement.

[The prepared statement of Mr. Walden follows:]

***** COMMITTEE INSERT *****

Mr. Waxman. Thank you very much, Mr. Chairman.

From the start of this Congress, we have had a contentious, partisan divide over efforts to overturn the FCC's open Internet order. This kind of partisanship is unusual for this subcommittee, so I look forward to returning to bipartisan efforts to address the numerous communications and technology issues that require our urgent attention.

Spectrum policy is a good place to start. Smart spectrum policy can help improve public safety, promote broadband, create jobs, and reduce the deficit. These aren't easy goals to achieve because the spectrum policy issues are complicated, but if we work together, I believe we can succeed.

One essential task is to provide public safety with a nationwide interoperable broadband network. There are different views on the best way forward. Some want the FCC to auction the D block to a wireless provider and encourage collaboration between the winning bidder and public safety. The FCC's broadband plan recommended this approach, and in the last Congress, bipartisan staff circulated a discussion draft that proposed to implement a number of the FCC's recommendations.

Others want Congress to reallocate the D block to public safety. This approach is favored by public-safety leaders and President Obama and has bipartisan support in the House and the Senate. Both approaches have promise.

With the 10th anniversary of 9/11 fast approaching, we need to settle on a path forward and work cooperatively together to ensure that public safety has what it needs to deploy an interoperable broadband network nationally. And I will work with my colleagues in the House and in the Senate to find the best solution.

Second, we need to determine the best way to implement incentive auctions. I believe incentive auctions are an innovative proposal for using underutilized spectrum to advance public safety, promote broadband, and create jobs.

As noted by 112 economists who wrote to the President in support of incentive auctions last week, quote, "Incentive auctions can facilitate the repurposing of spectrum from inefficient uses to more valuable uses while minimizing transaction costs incurred. Giving the FCC the authority to implement incentive auctions, with flexibility to design appropriate rules, would increase social welfare," end quote.

I recognize some are concerned about whether we can ensure that voluntary actually means voluntary. I am confident we can find a way to avoid unfairly disadvantaging broadcasters in this process, and I appreciate the broadcasters' willingness to work with us to figure this out.

And, finally, we need to examine Federal uses of spectrum resources. The administration deserves credit for directing NTIA and FCC to identify and make available 500 megahertz of spectrum

over the next 10 years.

I am glad we are having this important hearing so we can begin our work on these important issues. I look forward to what our witnesses will have to say.

And I want to yield the balance of my time to Mr. Barrow.

[The prepared statement of Mr. Waxman follows:]

***** INSERT 1-1 *****

Mr. Barrow. I thank the gentleman for yielding.

Today, we begin the important conversation of how best to use spectrum to serve our national interests. Wireless technologies relying on spectrum have become essential to economic growth. And because of the growth in demand for spectrum, we face a spectrum crunch in the next decade. We have to find ways to free up spectrum to meet that demand.

I look forward to discussing incentive auctions with today's panel and how these auctions can be used to free up spectrum and reduce our national debt.

I have introduced a bill, H.R. 911, that authorizes a comprehensive spectrum inventory on how spectrum is being used and gives financial incentives for licensees who relinquish spectrum they are not making good use of.

I understand the FCC is making progress on a spectrum inventory, and I commend them for their efforts.

I look forward to working with my colleagues on this committee to address our spectrum goals.

And I thank the ranking member for yielding me time.

With that, I yield back to Mr. Waxman the balance of my time.

[The prepared statement of Mr. Barrow follows:]

***** COMMITTEE INSERT *****

Mr. Waxman. I yield back my time.

Mr. Walden. The gentleman yields back his time.

Now I would recognize the chairman of the full committee, the gentleman from Michigan, Mr. Upton.

The Chairman. Thank you, Mr. Chairman.

As the title of this hearing indicates, spectrum policy can help meet several of our committee's goals: promoting broadband, advancing the communications needs of our public-safety officials, creating jobs, and also reducing the Federal deficit. Today, we begin that discussion to maximize our spectrum resources.

One thing that we will consider is the spectrum allocated in the Federal Government and whether those spectrum bands can be better allocated at both the government and commercial sectors. There is already legislation designed to help relocate government users and provide them with better communications resources to be paid for with auction proceeds from spectrum that they clear. And there may also be ways to make that legislation work better.

There is the 700 megahertz D block, 10 megahertz of spectrum that Congress specifically allocated for commercial use in the DTV legislation. That legislation also gave the public safety a completely separate 24 megahertz block of spectrum to create an interoperable broadband network. And an amendment that I offered added a billion dollars for the purchase of interoperable equipment. For a number of reasons, the D block remains

unauctioned and unused today.

The question now is how best to create the interoperable broadband communications network recommended by the 9/11 Commission. Today, we will discuss auctioning the D block as required by current law and as this committee and the FCC favored last Congress, on a bipartisan basis, as compared to recent proposals for reallocating the spectrum to public safety. I look forward to that discussion.

We are also going to discuss incentive auctions as a way to present a win-win-win for existing licensees, potential licensees, and the U.S. Treasury. Such auctions would allow the FCC to share the proceeds from the auction of spectrum that current licensees voluntarily return.

The work we begin today on spectrum issues can help us extend the reach of broadband, meet the needs of public safety, create jobs, reduce the deficit, and allow the economics of the spectrum market to permit innovation to flourish across all spectrum-based services.

I thank our witnesses, the members of this committee, and, particularly, my good old friend, Slade Gorton. I know we had lots of battles in years past in his days in the Senate.

I yield to the vice chair of the subcommittee, Lee Terry.

[The prepared statement of Mr. Upton follows:]

***** COMMITTEE INSERT *****

Mr. Terry. Thank you, Full Committee Chair and Mr. Walden.

I welcome our witnesses and thank you for testifying and your answers later. It will help us develop a well-balanced spectrum policy.

Any spectrum policy that this committee establishes will play a critical role in bringing interoperable broadband communications to public safety, advancing our exponentially growing appetite for wireless broadband, and, most importantly, reducing our deficit.

I look forward to hearing our witnesses flesh out what the true definition of "voluntary" means. I also look forward to learning more about repacking and some of the concerns associated with relocation.

I also welcome testimony from our witnesses today on the details pertaining to an interoperable public-safety network. Is more spectrum really needed or are efficiencies needed? Should proceeds from an auction be used to help construct a nationwide network or does public safety currently have what it needs to go interoperable?

Those are many questions. I look forward to receiving answers.

I thank the distinguished chairman and yield back my time.

[The prepared statement of Mr. Terry follows:]

***** COMMITTEE INSERT *****

Mr. Walden. The gentleman yields back his time.

I now recognize the gentleman from Massachusetts, Mr. Markey, for 5 minutes.

Mr. Markey. I thank the chairman.

I ask unanimous consent to enter into the record a letter from 112 economists in support of the incentives auction authority for the FCC.

Mr. Walden. Without objection.

[The letter follows:]

***** COMMITTEE INSERT *****

Mr. Markey. I thank you.

We have moved very quickly from the day when the chairman of AT&T, in 1981, thought 1 million people would have cell phones by the year 2000 to the day where we have spectrum being at the core of the debate that we have in our country for economic growth and for public safety.

In 1993, I was the chair of the subcommittee. We were able to move over 200 megahertz of spectrum, which created the third, fourth, fifth, and sixth cell phone licenses. The first two were analog and charged 50 cents a minute. If you had a brick that you were carrying around, something the size of a brick, you were using it. But, by 1996, we all had a cell phone in our pocket because the four new companies all went digital, dropped their prices to under 10 cents a minute, and that is the year you all put cell phones in your pocket for the first time.

And we are very proud of that on this committee, and it just changed everything. Although, let me be honest with you: The two incumbents, whose names are well-known, weren't happy with that decision.

We have the same kind of choices that we have to make today. And I think the Obama administration's national wireless initiative to make available high-speed wireless services to at least 98 percent of Americans is a tremendously important undertaking. It will spur innovation, create nationwide

interoperable wireless services for public safety, while reducing the national deficit by approximately \$10 billion.

Spectrum is the oxygen of the wireless ecosystem, so we have to find more spectrum. We have to manage that which we have better, but we also have to find more because of all of the tremendous opportunities which it presents.

And we have to free up TV white space spectrum to enable new technologies like Super Wi-Fi and make new innovative Super Wi-Fi devices available soon. But the broadcasters should do that on a voluntary basis. We have to have a formula here which ensures that that happens.

But at the end of the day, public safety has to be at the core of this. There were two planes that were hijacked in Boston with 150 people from my district and the surrounding districts that flew into the World Trade Center. There was a communications failure on that day. We have to make sure that our public-safety first responders never face another day like they did on 9/11. We have to make sure they have the spectrum they need in order to respond.

I served on the Homeland Security Committee for 6 years working on this issue because I saw what happened and I saw what the casualties were in my own life and in the lives of tens of thousands, millions of others. So we have to be able to accomplish this, to take care of public safety while ensuring that we see the economic growth that we want.

And for the remaining 2 minutes, I yield to the gentlelady from California, Ms. Matsui.

[The prepared statement of Mr. Markey follows:]

***** COMMITTEE INSERT *****

Ms. Matsui. Thank you, Mr. Markey, for yielding to me.

I would also like to thank the witnesses for joining us today.

There are approximately 270 million wireless subscribers in the United States, and that number is growing. President Obama recently identified the need for increased spectrum in the market. The FCC has said our Nation will soon face a spectrum crisis. There are some estimates that, by 2014, the demand for spectrum will exceed supply.

It is our job to remain focused on getting the spectrum out there, and we should move as quickly as possible. The FCC should have the flexibility to structure and conduct incentive auctions that will truly maximize the economic and social value of the spectrum.

On the issue of public safety, we must provide public safety with interoperable capabilities they need and deserve to protect our Nation during challenging times. As we approach the 10th anniversary of the tragic events of September 11th, it is not acceptable that our Nation does not have a public-safety communications system with a nationwide level of interoperability in place.

While we will debate the merits of how to fund and construct a nationwide public-safety system, we can all agree that we must find a path that provides the funding required to build an

interoperable system that fulfills the needs and security of our public-safety goals. We must also do so in a fiscally responsible manner. It will not be easy, but we must get there.

I also believe that spectrum should be preserved for the advancement of technologies, including smart grid and health IT capabilities.

I thank you very much for being here.

And I yield back the balance of my time to Mr. Markey, who may want to use 12 seconds.

[The prepared statement of Ms. Matsui follows:]

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Mr. Markey. And that would just be to say that we welcome you, Senator Gorton.

As you all know, he wound up on the west coast, but Gorton's of Gloucester is where it originated. So we still have, I think, a lot of things in common that we can work on. And thank you for your service to our country.

Mr. Walden. And, with that, I welcome Senator Gorton and your testimony. Thank you for coming today. We appreciate your service on the 9/11 Commission and in the United States Senate, and we look forward to your counsel. Please go ahead.

STATEMENTS OF THE HON. SLADE GORTON, FORMER U.S. SENATOR, MEMBER OF THE 9/11 COMMISSION; DEPUTY CHIEF CHARLES DOWD, COMMANDING OFFICER, COMMUNICATIONS DIVISION, NEW YORK POLICE DEPARTMENT; COLEMAN D. BAZELON, PRINCIPAL, THE BRATTLE GROUP; MARY N. DILLON, PRESIDENT AND CHIEF EXECUTIVE OFFICER, U.S. CELLULAR; ROBERT GOOD, CHIEF ENGINEER, WGAL-TV; JULIAS P. KNAPP, CHIEF, OFFICE OF ENGINEERING AND TECHNOLOGY, FEDERAL COMMUNICATIONS COMMISSION; PETER PITSCH, EXECUTIVE DIRECTOR OF COMMUNICATIONS POLICY AND ASSOCIATE GENERAL COUNSEL, INTEL CORPORATION

STATEMENT OF THE HON. SLADE GORTON

Mr. Gorton. Mr. Chairman, one minor annoyance of being on your side of the dais for some 18 years was to listen to people read testimony that I had already read and that added very little to the debate. So I will spare you that and hope that you have or will read my written testimony and simply make a handful of points.

And the first of those points is that the nature of this debate has changed profoundly, I believe, just in the course of the last few months. You all are more aware than I am -- and I am plenty aware -- of the debates that have taken place in this House and the Senate over the course of the last 3 or 4 weeks and continue and, you know, the blood, sweat, and tears that has gone

into a continuing appropriation designed to save some \$38 billion.

Well, Mr. Chairman, the demand that the D block be turned over for free to public safety would automatically reduce that saving by roughly 10 percent, just the gift of the spectrum itself. To provide the amount of money that local governments think that they need actually to exploit that would take the whole -- very likely take that whole \$38 billion and would require a continuing subsidy.

Mr. Chairman, I submit to you, even from this side of the table, that is not going to happen. You are not in this Congress, or I think for several Congresses to come, going to start a major new Federal program of subsidization, you know, for this particular purpose. I just don't believe that that is in the cards. That is the first point I want to make.

The second is that the auction of the D block itself will not only bring money into the Treasury, which you can use for one or two things -- as I looked through the testimony here, you know, some talk about reducing the deficit, some talk about using that money to help subsidize the public-safety mission. Obviously, it can't be used for both. But the overall economic impacts of that auction will be far greater in the investment that the private sector will make in using the D block spectrum itself. That will be a major investment in better communications in the country. It will meet at least some of the demand, which is huge.

Congressman Markey, I think, talked about that, you know,

thousand cell phones. Even 2 or 3 years ago, we could not have imagined the demand for private spectrum that exists in the country today. It will provide better communications for the people of the United States. It will provide jobs. It will provide tax receipts, of course. And the money almost certainly will be better used than it would be if it went through various government agencies for technologies that are often outmoded by the time the governmental process gets them contracted for.

But that does bring us to the other very real need, and that is the need for public-safety agencies and entities. Several of you have mentioned the fact that the 9/11 Commission, on which I served, as one of its recommendations, recommended additional spectrum for public-safety entities. That is true.

And a year after the 9/11 Commission was formally dissolved, we got back together again and had the gall, I guess, to give the Congress a report card on how well it had done. I may say that Congress probably adopted more of our commission's recommendations than any other such commission in my lifetime. Nevertheless, at that point, after the first round in 2004, Congress got an F on that score, on new spectrum. But on the second round of 9/11 legislation, that grade went up to a C. Now, that may not be a great grade by any stretch of the imagination, but we were hard graders, and there weren't many elements that got C grades from us at all.

So the recommendation that the 9/11 Commission made for

additional spectrum has essentially been carried out by Congress. That doesn't settle the question completely by any stretch of the imagination, but it allows me to be here testifying, as I am, for a much more dynamic solution. And that solution is to go forward with those auctions and allow it primarily, but not exclusively, to the Federal Communications Commission to see to it that that auction and those private sales benefit our public-safety agencies as well.

And, on that score, without going into the technicalities, I am convinced that they not only can do it but that it will provide additional spectrum and additional equipment for public-safety entities across the country much more rapidly than will the dead-end street of a huge new Federal program, which, very bluntly, Congress is not going to fund in any event.

[The prepared statement of Mr. Gorton follows:]

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Mr. Walden. Senator, thank you very much for your testimony, both prepared and your oral. Thank you very much.

We are going to go now to Deputy Chief Charles Dowd, commanding officer, Communications Division, New York Police Department.

Deputy Chief Dowd, thank you for being with us. Thanks for your service to the people of New York and to America. And on 9/11, we were all New Yorkers. And I welcome your testimony today.

STATEMENT OF DEPUTY CHIEF CHARLES DOWD

Mr. Dowd. Thank you, Mr. Chairman, Congressman Markey. It is a pleasure to be here again.

Unlike the Senator, who is far more experienced at this, I am going to read my testimony.

Again, thank you for the opportunity to testify today. Let me begin by expressing gratitude to Representatives Peter King and Bennie Thompson for their bipartisan effort that has resulted in the introduction of H.R. 607, the "Broadband for First Responders Act of 2011," and, as well, to Senator Jay Rockefeller introducing Senate bill, S. 28, the "Public Safety and Wireless Innovation Act."

Due to their efforts and the cosponsors on both bills, we are

closer than ever to providing our Nation's first responders with a tool they desperately need: a nationwide, mission-critical broadband network dedicated to public safety. We are also grateful for the President's support on this vital issue. However, we are missing one essential element to accomplishing this goal. We need the support of the members of this subcommittee to get this legislation passed.

I come to Washington today not only on behalf of the New York City Police Department but as the representative of every public-safety organization and agency in the country and the over 32,000 law enforcement, fire, and emergency medical chiefs whose agencies and lifesaving operations will benefit enormously from this technology. We consider it essential to the future of our mission. The need to reallocate the D block spectrum to public safety is a view shared by agencies large and small, urban and rural, across the country.

Like virtually all public-safety organizations, the New York City Police Department relies principally on two-way voice radios to communicate. This technology is extremely limited. It cannot exchange electronic data or video. We have made some progress in radio interoperability since the 9/11 attacks, but disparate spectrum and aging technologies prevent first responders from attaining truly nationwide, seamless, interoperable communications. Broadband on 700 band spectrum would allow us to be seamlessly interoperable on all levels: local, State, and,

very importantly to this issue, Federal.

Police Commissioner Ray Kelly recently testified that a 16-year-old teenager has more communications capability on a smartphone than a police officer or firefighter with their portable radio. I hope the members of this subcommittee consider that fact and agree that this situation cannot continue. Inaction on D block's reallocation risks not only the public's safety but also the lives of those whose job it is to protect them.

Two weeks ago, the co-chairs of the President's 9/11 Commission, Governor Tom Kean and Congressman Lee Hamilton, testified before Congress about first-responder needs. Their testimony in part was, and I quote, "The inability of first responders to communicate with each other was a critical failure on 9/11 that led to needless loss of life. We support the immediate reallocation of the D block spectrum to public safety. We must not approach these urgent matters at a leisurely pace. We don't know when the next attack or disaster will strike. Further delay is intolerable."

A number of recent studies, some of which I would like to submit for the record -- there are four of them -- have proven the need for public safety to have a 20 megahertz block of spectrum for a broadband network. New York City issued a white paper based on throughput analysis of its current NYCWiN network that identified the need for more than 10 megahertz. A report commissioned by the Government of Canada for public safety

indicated spectrum need would exceed 20 megahertz in the long term. A study by the Phoenix Center in Washington found that assigning the D block to public safety provides at least \$3.4 billion more in social benefits as opposed to an auction. And, lastly, several papers by Mr. Andrew Seybold, a nationally recognized expert, concluded that 10 megahertz is not enough.

[The studies follow:]

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Mr. Dowd. For some time now, we in public safety have stated we want to be as spectrally efficient as possible. We know that the flexibility of broadband technology allows for potential use of the network by other governmental agencies, public utilities, as well as public-private partnerships that could bring broadband technology to the public in underserved rural areas.

The efficiencies of such a network would dramatically reduce operating costs for local and State governments, while maintaining the public-safety mission-critical nature of the network. We have agreed to use commercial technology that will allow us to take advantage of the economies of scale.

We are also prepared to work with the FCC to study the feasibility of returning currently held public-safety spectrum if sufficient broadband spectrum is allocated to us. We understand the current fiscal realities, but the need for the network, coupled with the cost savings, means we simply cannot afford not to build it.

Some have made the argument that reallocation is not necessary because public-safety communications can use commercial networks. You should know that every major public-safety organization in the country has explicitly rejected this option as unworkable. Our experience with commercial networks and especially the failures that sometimes occur, like on 9/11 and during Hurricane Katrina, tell us these networks are definitely

not interchangeable with dedicated public-safety networks. There are fundamental differences in the architecture that go to the heart of public-safety communications. Simply put, commercial networks are not designed for the crisis demand that first responders will inevitably put on them.

A dedicated public-safety network would enable the NYPD to fully leverage the powerful technology that we use in the NYPD's Real Time Crime Center. This state-of-the-art facility is a massive database containing billions of public and classified records. We have made these databases searchable with the latest smartware. Twenty-four hours a day, detectives call from investigations in the field, looking to follow up on various leads they have obtained: a partial license plate, a seemingly untraceable cell number, a nickname, or even a tattoo. They conduct instant searches, sometimes that would previously take us days.

Now we are looking to put this technology in the hands of thousands of officers on patrol. An officer operating in this network could be sent highly detailed information about a location to which he or she is responding, even before those officers arrive. They will be able to know who resides there, whether or not the police have been there before and why, if any of the occupants has an outstanding warrant, prior arrest, an order of protection, or a firearms license. They will be able to take electronic fingerprints at the scene and compare those records

instantaneously with State and city records.

There are other examples here, but, in the interest of time, I am going to skip ahead and just say, right now these capabilities simply don't exist, and they don't exist because we need Congress to reallocate the D block and provide the necessary funding to public safety to build this hardened mission-critical network.

With the 10th anniversary of 9/11 rapidly approaching, we urge the Congress in the strongest possible terms to pass the above legislation and send it expeditiously to the President for his signature. The City of New York Police Department looks forward to the day when public-safety users can share a nationwide network that supports voice, video, and data on an integrated wireless network. For the sake of the security of cities and towns all across the country, we sincerely hope we see that day before a new attack or disaster.

Thank you for the opportunity. I will answer any questions that you may have.

[The prepared statement of Mr. Dowd follows:]

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Mr. Walden. Thank you very much, Chief.

Now I would like to welcome for his testimony Dr. Coleman D. Bazelon with The Brattle Group.

We welcome you, and thank you for being here today.

STATEMENT OF COLEMAN D. BAZELON

Mr. Bazelon. Thank you, Chairman Walden, Congressman Markey, members of the committee. It is an honor to speak here today.

This committee is considering an important issue of spectrum policy that will have profound impacts on the development of wireless broadband. I am sure everyone is familiar with the projections of demand for wireless broadband, including forecasts of wireless data demand virtually doubling every year for the next few years. Industry capacity will struggle to keep up.

Rising demand will be met, in part, by rapidly building out spectrum acquired at auction --

Mr. Walden. Doctor, could I just ask you to move that microphone a little bit closer? We are having a little trouble hearing. Thank you.

Mr. Bazelon. Is that better?

Mr. Walden. Much better.

Mr. Bazelon. Thank you.

Carriers will also use other techniques to increase effective

capacity, such as Wi-Fi offloading, off-peak transmission and on-device storage, and innovative pricing schemes aimed at reducing peak usage.

Nevertheless, if future demand for wireless broadband services is to be met and those services are to remain affordable, it is clear that new allocations of spectrum will be needed. Absent those additional allocations, much of the potential benefits of mobile broadband to consumers and the economy will be lost.

Exactly how much more radio spectrum is needed for wireless broadband is uncertain. Given the uncertainty, policymakers should apply a principle of spectrum reallocation. Based on current allocations, if a higher-valued use exists, spectrum should be reallocated from the lower-valued use to the higher-valued use.

Our economy benefits when resources are moved to higher-valued uses. Other bands of spectrum should be examined with this principle of spectrum reallocation in mind. As long as there are financial gains and additional consumer welfare to be had from reallocating more spectrum, further reallocation should take place.

This principle of spectrum reallocation has been applied to the television band twice before. First, the initial cellular allocations were from the upper reaches of the UHF band originally allocated to TV broadcasters. Then, as a result of the digital

television transition, the 700 megahertz band was reallocated to wireless broadband and public-safety uses.

Or perhaps I should say, the principle of spectrum reallocation has almost been applied twice to the TV band. The D block remains unassigned. There seems to be three options: assign the D block to public safety, auction it for wireless broadband uses with public-safety obligations, or auction it without public-safety obligations.

I have testified before and reiterate today my belief that auctioning the D block unencumbered with any public-safety obligations would be best. Last summer, I told this committee that I estimated a well-structured auction of the D block would raise between \$3 billion and \$4 billion, and I believe that to still be true.

The loss in value from public-safety obligations on private licensees or the relatively small amount of cost savings to public safety from an additional 10 megahertz of spectrum suggests that an unencumbered auction would put the D block to its highest-valued uses.

There is an option to apply the principle of spectrum reallocation to the TV bands again through the use of incentive auctions. One of the key advantages of incentive auctions is that they are designed with the principle of spectrum reallocation in mind. That is, by design, they will not reallocate spectrum from a higher-valued use to a lower-valued use.

My colleague, Charles Jackson, and I are working on a detailed analysis of what an incentive auction of the television bands might produce. This research was sponsored by the High Tech Spectrum Coalition, but today I am testifying on my own behalf. I want to provide the committee with a few highlights of our preliminary findings.

An incentive auction could clear 120 megahertz of spectrum that could be reallocated to wireless broadband uses. Broadcasters that do not participate in the auction or whose bids are not accepted in the auction will not have any diminution in their service areas. At a minimum, 4 full-powered broadcasters would remain in every top-30 market, serving the same households they do today, although probably more than 4 existing stations would continue broadcasting by moving to VHF channels, co-broadcasting with other broadcasters, or adjusting their service areas.

Payments to broadcasters in the incentive auction would probably not be more than about \$15 billion and likely would be much less. Expected revenues from auctioning 120 megahertz of spectrum would likely exceed \$35 billion. So an incentive auction would be expected to raise at least \$20 billion for deficit reduction or for other priorities Congress may have, such as funding a public-safety network.

Finally, in closing, I would like to remind the committee that the real beneficiaries of spectrum reallocations are

consumers. Broader access to higher-bandwidth wireless networks at lower cost is the real benefit of applying the principle of spectrum reallocation. The benefits to consumers are generally estimated to be 10 to 20 times auction receipts. Consequently, the cost of inaction in reallocating these valuable spectrum bands is very high.

Thank you very much.

[The prepared statement of Mr. Bazelon follows:]

***** INSERT 1-5 *****

Mr. Walden. Thank you for your testimony.

We will now turn to Ms. Mary N. Dillon, the president and chief executive officer of U.S. Cellular.

We are delighted to have you here before the subcommittee this afternoon. Thank you, and look forward to your testimony.

STATEMENT OF MARY N. DILLON

Ms. Dillon. Thank you, Chairman Walden, Congressman Markey, and the rest of the committee. It is a pleasure to be here today.

You know, as you know, throughout its very brief history, the wireless industry has provided consumers and businesses with an ever-evolving array of innovations -- first, of course, voice communications, and now broadband. In fact, wireless has become an essential service for most Americans today. The growth in demand for mobile services in recent years has been absolutely dramatic, and it really shows no signs of abating. We must ensure that wireless networks are able to continue to meet America's growing needs for access to information and communication.

Today's hearing on spectrum raises several important issues currently facing the wireless industry, and they also have broader implications for the Nation's economy and safety. And those issues are: first, the critical need for additional spectrum to meet growing consumer demand for mobile services; secondly, the

need to provide an interoperable, nationwide public-safety communications network; and, third, the need for rules that maximize the efficient use of that spectrum going forward.

Of these topics, the most important is the increasing demand for mobile services and the need to make more spectrum available. There is widespread agreement among carriers, the high-tech industry, the FCC that we are, in fact, facing a severe spectrum shortage in the next few years.

My written testimony contains additional facts, but it is very intuitive and I think we can all appreciate how increasing consumer demand for high-tech devices and the services they provide are placing enormous strain on networks and, in turn, creating critical need for more spectrum.

For example, smartphones and tablets are the fastest-growing segments of wireless, and they drive 24 and 122 times more data usage than traditional handsets alone, respectively. So it is really no wonder that data traffic has tripled in 2010 for the third year in a row.

You know, there is also widespread public support for freeing additional spectrum for mobile uses, as demonstrated in a recent nationwide survey that we conducted where we saw that nearly 60 percent of Americans support making more spectrum available to wireless carriers.

As the leader of a company that consistently gains awards for our high-quality network and our overall consumer satisfaction, I

am very concerned about the consequences to consumers of severe network congestion, where video would freeze and calls would drop and surfing the Web could become very slow. In addition, potential innovation in areas such as health care and education would suffer as well.

So, remember, of course, it will take years following the passage of legislation before auctions are complete, spectrum is cleared, and services are deployed. So that is why time is of the essence and why Congress really should act now. So what should you do?

First, the most efficient way to meet this rise in demand is to give the FCC the authority to conduct incentive auctions for whatever underutilized broadcaster spectrum exists. And the most effective way to maximize the value of is licensed spectrum is to structure auctions in small blocks rather than in large mega regions or national slots so that U.S. Cellular and other small carriers, in fact as many companies as possible, have a fair opportunity to bid and to be successful. More participants will mean more money for the Treasury and more competition in the marketplace.

Second, we must determine how to provide public-safety agencies with a network that meets their needs. And we believe there are three policy principles that should govern that decision. First, a national, interoperable broadband network should be deployed quickly. Second, there should be an

opportunity to expand competitive broadband services and also serve the needs of public safety. And, third, the first two policy considerations must ensure that there is an efficient use of the spectrum as well as taxpayer dollars.

Now, U.S. Cellular has previously supported the concept of a regional public-private partnership model and the FCC's broadband plan to recommend a commercial auction of the D block. So, while we do see ways where the transfer of spectrum to public safety might work, we continue to believe that an arrangement where commercial operators conduct and operate the network at their expense and then work in partnership with regional public-safety agencies to ensure it meets their needs represents a unique and fiscally sound solution.

And, third, we need to update the rules that govern the use of spectrum with regard to interoperability and ubiquitous availability of mobile services. In order to maximize consumer benefits, auctions should be structured to guarantee that services deployed over newly available spectrum are capable of being used with maximum efficiency. Legislation should mandate that carriers be required to deploy network services that are interoperable across the industry. For example, wireless carriers should not be able to deploy 4G handsets that only work in a limited subset of the 700 megahertz spectrum, as is happening today. Without interoperability, consumers and public safety will not be able to seamlessly travel and have access to the data services that they

need on other networks or take their devices to other carriers if they should choose to switch.

And, lastly, I would ask that any consideration of broadband deployment not lose sight of the needs of people living in rural communities, who deserve access to the same kind of mobile voice and data communications that consumers in urban areas enjoy. While it is not the central focus of this hearing, as you consider reforming USF, remember there are still rural areas today where calls drop, access is very limited, and dead zones are quite common in the community.

So thank you very much.

[The prepared statement of Ms. Dillon follows:]

***** INSERT 1-6 *****

Mr. Walden. Thank you for your testimony.

We are going to go now to Mr. Bob Good, who is the chief engineer of WGAL-TV in Lancaster, Pennsylvania.

Mr. Good, thank you for being here. We look forward to your testimony.

STATEMENT OF ROBERT GOOD

Mr. Good. Good afternoon, Chairman Walden, Congressman Markey, and members of the subcommittee.

My name is Bob Good, and I am assistant general manager, director of operations, and chief engineer of WGAL-TV in Lancaster, Pennsylvania. I am testifying on behalf of Hearst Television, Incorporated, which owns and operates 29 television stations across the country, including WGAL-TV.

Less than 2 years ago, during the DTV transition, billions were spent upgrading facilities, purchasing converter boxes for viewers, educating viewers of the impending switch. In the process, the FCC repacked the television band and local broadcasters gave back 108 megahertz of spectrum, freeing up space for public safety and new commercial wireless services. From over-the-air HD signals to new multicast channels, broadcasters across the Nation are providing a more diverse and richer viewing experience.

Free over-the-air local broadcast television is not only the Nation's most watched and trusted platform for local news, virtually every local station, including mine, works hand-in-hand with first responders to provide public-safety information in time of local emergencies.

Local broadcast television is relied upon by 99 percent of the American people. In fact, some 43 million Americans depend exclusively on free over-the-air broadcasts as their only source of television. Many of these viewers are impoverished, elderly, live in rural areas, and/or are members of an ethnic minority. These are our viewers and your constituents, and it is essential that Congress not leave them behind in the consideration of spectrum reallocation.

I am an engineer, and I am here to offer an overview of WGAL-TV's transition experience and a real-world perspective on some of the technical issues that would accompany another repacking of existing broadcast spectrum.

The FCC staff and wireless industry propose to remove 20 of the current 37 channels in the UHF broadcast band. This would be a reduction of more than 50 percent of existing UHF broadcast channels. The consequences of that proposal, if implemented, would be staggering. The relocation of channels is not a simple matter of flipping a switch. The substitution of one channel in one market will create a domino effect across the entire country. One channel change in Chicago, for example, would require a

channel change in Kalamazoo, which would require changes in Lansing, and in turn affecting Detroit, and so on and so forth.

The Lancaster market is bounded by five other television markets, including Philadelphia and D.C. After the repacking following the DTV transition, our station was initially authorized to transmit at a low power level to protect other stations from interference. That created significant gaps in our over-the-air coverage, and many of our longstanding viewers lost WGAL. Even some cable systems, with their tall towers and high-gain antennas, lost over-the-air access to our signal. That prevented them from retransmitting our station to their subscribers.

Within days of the transition, we received thousands of viewer complaints, and we still do. Today, we still haven't reached a point where our station's coverage replicates our pre-DTV service area. We are not sure, frankly, if it ever will.

We have petitioned the FCC for several power increases, and we have plans to install six new translator stations at a collective cost of at least another \$1.5 million. That is on top of the \$2.5 million we already spent on the DTV transition. Local viewers have also incurred additional costs by having to buy new home antennas to receive our VHF digital signal.

Unfortunately, this new repacking proposal has the potential to be more difficult. This time around, any repacking process would start with fewer alternative channels to assign to stations and the likelihood of greater interference for more closely packed

channels. Also, due to the FCC's white spaces decision, we will have to contend with thousands of new unlicensed devices that have been authorized to operate in television bands.

Additionally, during the DTV transition, we had the luxury of operating two channels simultaneously, one analog and one digital. This time broadcasters would have to make a flash cut, because additional channel capacity no longer exists. That means that the viewers will not have adequate time to prepare for another repacking. The level of service disruption to your constituents could be unprecedented.

Broadcasters take their public stewardship commitment seriously, and we look forward to expanding and enhancing the important service our industry provides to you and your constituents. We will continue to work with the committee to strike an appropriate balance in achieving the Nation's overall communications policy goals.

Thank you. I will be happy to answer any questions you might have.

[The statement of Mr. Good follows:]

***** INSERT 1-7 *****

Mr. Walden. Thank you, Mr. Good. We appreciate your being here today.

Now we would like to go to Mr. Julius Knapp, the chief, Office of Engineering and Technology at the Federal Communications Commission.

We welcome you here and look forward to your testimony, sir.

STATEMENT OF JULIUS P. KNAPP

Mr. Knapp. Thank you. Good afternoon, Chairman Walden, Congressman Markey, and members of the subcommittee. I appreciate the opportunity to speak to you today.

Mobile broadband holds great promise for economic growth, for creating jobs, for improvements to our quality of life, and for our global competitiveness. However, the explosion in demand for mobile broadband services is putting a strain on the limited supply of spectrum available for mobile broadband.

As you have heard, today's smartphones consume 24 times as much data as traditional cell phones, and the recently introduced tablets consume about 120 times more spectrum. Analysts have projected that there will be a 35 to 60 times increase in mobile broadband traffic over the next 5 years.

All we need to do to verify these projections firsthand is look in the palm of our hands at our wireless devices and how we

use them. We check our e-mails, monitor the news and weather, get directions, watch sporting events and other programs that stream live to our phones.

Only a fraction of wireless users have these capabilities today, but the number is rapidly increasing. My little 3-year-old granddaughter doesn't yet know how to spell but she sure knows how to work the iPhone.

While we must continue to drive efficient use of spectrum, improvements in efficiency are not going to be enough. We will be facing a spectrum crunch in which demand for spectrum will exceed the supply by the year 2014 unless we promptly take action to make more spectrum available.

To address these challenges and seize the opportunities of mobile, the FCC is moving forward aggressively with a comprehensive mobile broadband agenda. Over the past year, the Commission has taken actions to open up additional spectrum for wireless broadband, including opening up spectrum in the 2.3 gigahertz band for mobile use and providing greater flexibility to offer terrestrial service in the mobile satellite spectrum. We have also freed TV white spaces spectrum, the most significant amount of unlicensed spectrum that we have made available in 25 years, to enable new technologies like Super Wi-Fi.

For more than a year, the Commission has conducted and we have now completed a baseline spectrum inventory. We have developed two tools, LicenseView and the Spectrum Dashboard, that

are online and provide unprecedented transparency into the use of spectrum.

Our baseline spectrum inventory, together with our extensive prior work on spectrum, has allowed us to determine that the best opportunities for providing access to suitable spectrum for wireless broadband services lie in the TV broadcast bands and the mobile satellite service bands.

Nearly 20 years ago, Congress authorized and the FCC implemented a breakthrough, market-driven policy to better allocate this scarce resource: spectrum auctions. The idea was the right one at the right time, and, since 1993, spectrum auctions have not only raised more than \$50 billion for the Treasury but have also generated hundreds of billions of dollars in private investment and productivity gains and enabled new competition that has dramatically lowered prices for consumers and accelerated the pace of innovation, which, in turn, has helped grow our economy.

Voluntary incentive auctions are the next tool for bringing market-based mechanisms to bear on spectrum allocation. Under this proposal, Congress would grant the FCC the authority to run two-sided, voluntary spectrum auctions in which current licensees would voluntarily contribute spectrum and would, in return, receive a portion of the proceeds from the auction.

Last week, 112 of the Nation's leading economists from across the ideological spectrum released a letter they had signed

endorsing incentive auctions. The economists who signed this letter include Nobel and Nemmers Prize winners, former members of both Republican and Democratic administrations, and FCC chief economists who served under chairmen of both parties.

We recognize that some are concerned that voluntary incentive auctions will come at the expense of TV broadcasting. To the contrary, we believe that voluntary incentive auctions can be conducted in a manner that encourages a healthy and robust broadcasting industry.

While realignment of broadcast stations will be necessary to ensure efficient use of the spectrum freed up from an incentive auction, our proposal seeks to limit the number of stations that would need to switch frequencies as part of the realignment process. For those that do, we would work to limit any loss of service to over-the-air television viewers and would fully reimburse the broadcasters for any costs associated with relocating.

No stations would be required to move from the UHF band to the VHF band unless they freely chose to do so in exchange for a share of the auction proceeds. And, finally, because digital technology allows stations to use virtual channel numbers, even if a station's actual channel number changes through realignment, it can continue to have the former channel number display on television screens and set-top boxes.

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DCMN ROSEN

[2:30 p.m.]

Mr. Knapp. In closing, let me suggest that voluntary incentive auctions are the right idea at the right time. I thank you for your attention.

Mr. Walden. Mr. Knapp, thank you. Thank you for your good work and thank you for testifying today.

[The prepared statement of Mr. Knapp follows:]

***** INSERT 2-1 *****

Mr. Walden. Now we would like to go to Peter K. Pitsch, the executive director of Communications Policy and associate general counsel of Intel. Welcome.

STATEMENT OF PETER PITSCH

Mr. Pitsch. Thank you. Good afternoon, Chairman Walden, Congressman Markey, members of the subcommittee. It is a pleasure to testify before this committee on this issue of whether or not to grant legislative authority to the FCC to conduct incentive auctions.

Intel strongly supports passage of such legislation this year. Intel, along with Alcatel-Lucent, Apple, Cisco, Ericsson, Nokia, Qualcomm and Research In Motion, formed the high tech spectrum coalition to advocate specifically for passage of this legislation.

Today I want to make three points. First, the U.S. is facing a severe mobile broadband spectrum shortfall. Second, voluntary incentive auctions would help address this problem. Third, incentive auctions can prudently be implemented on the broadcasting spectrum now.

First, as many already noted, including Julius Knapp, longtime friend, United States faces a severe global broadband spectrum shortage. In the interest of time, suffice it to say I

strongly concur, would only add that it is important to recognize that the FCC's command and control administrative process for reallocating spectrum does not work well. Furthermore, the low hanging spectrum band suitable for mobile use already have been reallocated.

Incentive auctions can break this logjam which brings me to my second point: Voluntary incentive auctions would help address our Nation's spectrum shortfall in a way that is beneficial to incumbents and to new users, to taxpayers and society. The voluntary nature of the process would ensure that incumbents who choose to sell and mobile broadband operators who choose to buy spectrum both would be better off. Also, taxpayers will benefit because incentive auctions, by reducing transactions problems and the holdout problems, can produce valuable cleared spectrum.

Much of the revenue raised from the spectrum would go to the U.S. Treasury. For instance my fellow panelist, Coleman Bazelon and his colleague, Chuck Jackson, in an analysis underway for the high tech spectrum coalition estimate that those benefits might well exceed \$20 billion. But most importantly, and the reason why I am here today, is that the gains, the long-term gains to consumers and society for lower prices, more minutes, less congestion were valuable services dwarf the gains to the broadband operators, the broadcasters or the taxpayers. Economists Hazlett and Munoz estimate conservatively that the benefits to consumers would be on the order of 10 times the private gains and the

taxpayers effects. The net gains to consumers could easily be in the hundreds of billions of dollars.

Lastly, the U.S. policy leadership in this sector could create a global competitive advantage, fostering American jobs and innovation. Conversely, if our broadband networks become more congested, if prices go up, then the creation of innovative services will be stymied and American workers and consumers will be denied valuable jobs and services.

Finally to, my third big point, incentive auctions can be used prudently to reallocate TV spectrum, a full 120 megahertz of TV broadcasting spectrum now.

In the interest of time, I will just summarize a few points, but hopefully in the Q&A session, we can get into the objections that have been made. My contention is that they are either wrong or misplaced. Over-the-air broadcasting will remain available. Broadcasters whose channels are repacked could, should, and would be fully compensated. They would be kept whole. I would add, however, that the repacking process was never intended to be, itself, made voluntary, and that if we were to make the repacking process voluntary we would give holdout power to the broadcasters who are on these clear bands of contiguous spectrum. Either they wouldn't exercise their holdout power collectively and we wouldn't get the spectrum, or there would be virtually no money leftover for the taxpayer.

So in sum, Intel strongly urges the members of this

subcommittee and Congress to act this year to give the FCC broad authority to conduct voluntary incentive auctions. Such legislation represents one of the most important opportunities to free up much needed additional spectrum for mobile broadband. The benefits to U.S. consumers, taxpayer and American society would be enormous. Thank you.

[The prepared statement of Mr. Pitsch follows:]

***** INSERT 2-2 *****

Mr. Walden. Mr. Pitsch, thank you. We appreciate the testimony of all of our witnesses today. We will move into our questions, and as you can see, we have a good turnout of our members and look forward to your answers.

Mr. Pitsch, let me go right back to you, because you suggest we should auction or give the FCC authority to do an auction right away. Do you support, then, the FCC following through on the auction authority they have today on the D Block?

Mr. Pitsch. Chairman Walden, Intel doesn't have a position on --

Mr. Walden. Why?

Mr. Pitsch. -- public safety.

Mr. Walden. Just wondered. Never mind, you don't have to answer that. Dr. Bazelon, let me go to you. The question I have, your testimony and your evaluation of the value of the auction, one of the issues that has come up in recent days -- and I hear from everybody on every side of all these issues, let me assure you, and that is a good thing -- is that with the potential proposed merger of AT&T and T-Mobile that you might not have as many entrants into an auction. Do you find that plausible, possible and just knowing that merger -- do you see that as having an affect on the value of an auction?

Mr. Bazelon. So let me begin by saying that I am here representing my own views solely. The broad spectrum value is

long-term supply and demand forces in this industry. And I don't believe that the pending merger changes any of those fundamental demands for spectrum were supply of spectrum. So I don't suspect that it will have any long-term effect on the value of spectrum.

Mr. Walden. All right, thank you.

Deputy Chief Dowd, Congress now allocated 24 megahertz of spectrum for public safety use in the DTV legislation 6 years ago, which I supported. In your testimony, you say that 2-way voice is, and I quote, "an extremely limited service that fails to meet the modern needs of public safety," correct?

Mr. Dowd. Yes.

Mr. Walden. And so, I am curious then, why do you think public safety community, including NYPD, chose to use more than half of the allocated spectrum to expand that very legacy voice service?

Mr. Dowd. Well, the issue there is that, you know, that was done a number of years ago, when the potential of broadband and its ability to transform how public safety does its business had not yet been fully realized. So there were a couple of things going on there. Number 1, you had a mandate from the FCC for folks to narrowband their radio systems and that they had dedicated that spectrum for that purpose.

Mr. Walden. All right.

Mr. Dowd. The issue there is that you have over 30 States that are building out on that spectrum because a lot of them, kind

of like led into this and were end of life on their existing systems and therefore, needed to build out on that spectrum. You know, if we had a preference -- if voice on broadband were ready for public safety prime time, we would prefer to put that spectrum into a broadband capability. But the reality is, it is out and it is necessary right now for narrowband.

Mr. Walden. So when the technology comes in the full view and availability, do you see then a migration over to voice on --

Mr. Dowd. Yeah, our --

Mr. Walden. That would free up a lot of spectrum, probably half of what you are using today.

Mr. Dowd. Well, it has the potential to free up a lot of spectrum in other areas too. And that is one of our main arguments for the D Block is that if you had sufficient spectrum to do all of your communications capability, voice data, video, all of those things in broadband, then that would potentially, in the long term, free up spectrum that public safety has now to return to the FCC and also potentially to free up that 700 narrowband spectrum, again, the long term. But the problem with trying to use that spectrum now for broadband purposes is simply the fact that it is necessary for narrowband.

Mr. Walden. Well, and obviously we are not going to get anything down in the very short term here, so when we get it done, we want to get it done right for the long-term and make sure we only invest in this correctly and appropriately going forward and

efficiently.

Senator Gorton, maybe I can turn to you, and Chief Dowd, you may want to comment on this. Because we have heard public safety wants to run its own networks, there is no -- I don't think have you any argument with that context. However, in my own State of Oregon, the Oregon wireless interoperability networks ballooned in costs to over \$150 million and failed to meet its benchmarks.

We know in San Francisco Bay Web is currently under investigation for apparently some alleged improprieties. So we are trying to figure out how we make sure we have an interoperable network that you can rely on, your men and women can rely on, and taxpayers can rely on. So maybe, Senator Gorton, what safeguards are in place to ensure public safety gets that capacity in the time of crisis? And could public safety benefit from a public private partnership as recommended by some?

Mr. Gorton. The answer to that question is overwhelmingly in the affirmative, Mr. Chairman. It would probably happen quicker, and almost certainly happen at less expense, your experience in Oregon is, by no means, unique. On a related but independent matter, remember how much money the FBI has spent on computerization, billions and billions of dollars wasted because the holdover metal structure for contracting for these things is so slow that the technology is well beyond them by the time that they have implemented a certain system, and I think that Chief Dowd's answer to your last question illustrates that. By the time

they get something up and operating, something else is better that is out there.

I just have to come back to my principal point, however. Unless you feel that there is an extra 25 to \$50 billion out there somewhere, not only to reallocate the spectrum, but to help governments that don't have any money to do it themselves, to do it through a Federal subsidy. And unless you feel that that is worth giving up at least an equal private investment in spectrum that can be used right now with all its jobs, this is an almost irrelevant argument. I don't think that money is there. I don't think your appropriations committees are going to come up that at any time in the immediate future, so a public-private partnership is going to be best for both side sides of the --

Mr. Walden. I am a minute and 40 over my time. So I will yield now and to turn to the gentleman from Massachusetts, Mr. Markey.

Mr. Markey. Thank you, Mr. Chairman, very much. Mr. Knapp, how much of a spectrum that we need do you think we can garner just from a more efficient use of the spectrum that we already have?

Mr. Knapp. We are going to need to continue to apply efficient techniques.

Mr. Markey. A significant percentage?

Mr. Knapp. A fair percentage, it is hard to put a number on it.

Mr. Markey. More than 10 percent?

Mr. Knapp. More than 10 percent, it is an ongoing process.

Mr. Markey. More than 10 percent, less than 50 percent.

Mr. Knapp. Ten percent, less than 50 percent, probably somewhere in there.

Mr. Markey. Okay, good. And so we can get a big chunk of this problem solved just by ensuring that there is more efficient use of the spectrum. And as you have to work under the Communications Act of 1934, you have certain public interest principals you have to abide by, huh?

Mr. Knapp. Of course.

Mr. Markey. -- in putting this together. And a lot of that goes to public safety, but also ensuring that there is spectrum out there so that we have further economic growth in our country as well?

Mr. Knapp. Of course.

Mr. Markey. That is your job, your division that you are responsible for?

Mr. Knapp. With others, yes.

Mr. Markey. Thank you. Now, Mr. Good, you seem to be saying that the broadcasters can go along, as long as it is voluntary, and as long as there is no interference. And if we can meet those two criteria, and you are going to be very tough as an engineer in ensuring that those criteria are met that the broadcasters are open-minded in the reallocation of spectrum if

they are compensated and interference is not created for other stations that are along that same perspective, is that correct?

Mr. Good. Well, yes, voluntary but as long as the broadcasters are held harmless.

Mr. Markey. That is what I am saying. And by "held harmless," you mean that they are compensated and that --

Mr. Good. Coverage areas are the same and they are back exactly where they were as far as coverage and the quantity of viewers they can get their signal.

Mr. Markey. And you think that can worked out as long as everyone is open-minded and engineers of common sense and goodwill from all sides are able to get together and agree upon those principles?

Mr. Good. That tends to bring us to repacking.

Mr. Markey. Yes.

Mr. Good. And I am not confident that we can achieve that type of coverage in that scenario.

Mr. Markey. Now, obviously, the broadcasters are a big part of our safety response capacity, because people turn to radio, people turn to television to get their information, so we want to make sure that those local broadcasters are there.

So, Chief, if we come over to you, in terms of the approach which the public safety community is bringing to these issues, just so it can be reduced down to a simple kind of set of principals that you are bringing here to the process. The public

safety community wants a specifically allocated part of this spectrum just getting over to the public safety community so that they can make sure that there is a specifically dedicated network construction that has voice, video, data so that what happened on 9/11 does not reoccur; is that correct?

Mr. Dowd. That is correct.

Mr. Markey. And is there a way in your mind of reconciling that goal with other interests that other people who testified here today have in terms of the economic goals that are also here and testifying and of interest to the country as well?

Mr. Dowd. Well, certainly. In our view, in public safety, we have gone to great lengths over the last couple of years to consolidate on this issue. And let me point out that that is probably a historic consolidation of public safety support this. Here on the right, you see a chart that I brought, it indicates two organizations, the Public Safety Alliance on the right, which represents every public safety organization and many other governmental agencies that support our position. And on the left is what is referred to as the Connect Public Safety Now Coalition. The good and distinguished Senator represents them here today according to his written testimony. I have to point out though, however, that there is no one in public safety that supports that position.

Mr. Markey. I see.

Mr. Dowd. As far as the flexibility and reconciling these

issues, you know, we can certainly do that. We are looking to do public private partnerships, but we don't want to put the cart in front of the horse. We want to make sure that public safety gets the mission critical --

Mr. Markey. My time is going to run out. Are you having conversations with the group that Senator Gorton represents, are there any conversations going on? Chief, answer that and --

Mr. Dowd. Well, there is not too many people to have conversation with.

Mr. Markey. Ah.

Mr. Dowd. You know, there are a couple of major commercial entities that are a part of that. But again, to stress it, you know, listen, the Senator is a man of high integrity and I know that his position is a sincere one. But quite frankly, we question the credentials of this coalition.

Mr. Markey. Senator, you deserve an opportunity to respond to your question.

Mr. Gorton. Well, of course, if your position is that you want to get something free and get it subsidized, you are all going to join in on that, it is an easy position to take. Give it to us and then give us all the money that is necessary to carry it out. That doesn't answer the question, and of course, they would prefer that to any kind of public private partnership.

The question is, are you going to give it away? Are you going to come up with a huge new Federal program? Are you going

to subsidize it? I don't think you are. And I think once you announce a position like that, I imagine that the work back and forth, the consultations between the private sector that wants to buy this spectrum and the public spectrum will be constructive and will be successful.

Mr. Markey. I just want to say, Chief, on a bipartisan basis, I just want to say that public safety is our highest priority throughout this entire process, I hope you know that.

Mr. Dowd. If I may comment on that, and again, having heard testimony and questions before this committee before the characterization that public safety wants something for free, I mean, why do we want it? We want it because we know we need it to protect the people of this country. So I am puzzled as to what the expectation is should public safety pay for the spectrum? Because if public safety pays for it, guess where the money comes from? From the taxpayers, so I don't understand the logic of that comment.

Mr. Markey. Thank you for your service, sir.

Mr. Walden. Move on to Mr. Terry for 5 minutes.

Mr. Terry. Thank you, Mr. Chairman. Staying somewhat on that theme. One of the accusations is not the right term, but information is that not all of the spectrum currently assigned public safety is even being used now. So Senator Gorton and Deputy Chief Dowd, once again, thank you for your service and your willingness to come down here. We should have an office for you.

And Mr. Knapp, if you could answer or retort or put into perspective that statement that public safety isn't using all of the spectrum that they are assigned now. Senator, are you aware if there is squatting occurring now on public safety spectrum?

Mr. Gorton. I can't claim to be an expert on that subject. I don't believe it is, but I don't believe it is because they are squatting, I believe it is almost certainly because they don't have the money to do it.

Mr. Terry. Chief?

Mr. Dowd. I am not sure what spectrum you are referring to. But again, in my prepared comments, one of the things that we are saying to you, and we would love the opportunity -- we know there are a lot of new members on this committee and this is a new issue for them, and there are a lot of things they have to address, but we want to engage you in detail on this.

One of the things public safety is suggesting is that if we get enough spectrum in this new and future technology to do all our capabilities within that spectrum, within that broadband capability, that there will be opportunities to return other spectrums, like the spectrum that the NYPD uses now, UHFT band for land mobile radio system. Over time, if we have the capability to do everything in the broadband network that would be fully interoperable, which we can't on UFT band, then certainly, why wouldn't we want to return that spectrum? And your question as to what spectrum we may be squatting on, I am not sure what spectrum

you are referring to.

Mr. Terry. All right. Mr. Knapp, can you clarify?

Mr. Knapp. Sure. Public safety operates in multiple different frequency bands.

Mr. Terry. 800.

Mr. Knapp. Yeah, part of what is where we are with the interoperability issue. I would venture that the spectrum is generally used by public safety. The one band that comes into focus is 700, and the narrow band channels we know are not used everywhere in the country and we have initiated a public notice to try to gather more information to get a better handle on how much it is being used.

Mr. Terry. Thank you.

Then Senator Gorton, going back to you and your testimony, and Mr. Markey has already helped frame this, but you talk about a public and private partnership that technology is available to assure that public safety communications can have priority access on commercial 700 megahertz network. Didn't we try that once and there were no bidders?

Mr. Gorton. I think your FCC witness is better able to answer that. But the answer to that question is yes. There were no bidders when those requirements were so onerous as to not worth it, that did not make it worth it to bid. However since then, we have financed the study by the chief technology -- former chief technology office of -- office of Motorola, who I do believe has

come up with a system under which the spectrum would be valuable to the private sector and would have an automatic override in case of public service -- public safety necessity. We don't --

Mr. Terry. I don't, Senator. I want to interrupt, so I can get Ms. Dillon, because she is part of this discussion too.

Is there technology today that would incent you or other wireless carriers to bid on this knowing that, at some point, public safety can come in and say we want it?

Ms. Dillon. Yeah, well, we have proposed that on a regional basis, a public partnership private model works. And potentially, it is one of the reasons that it didn't work in the last auction, it was on a nationwide basis. So for us, we believe that carriers of our size and smaller, there is two reasons why we believe this sort of --

Mr. Terry. So if we break it down into regions or smaller --

Ms. Dillon. Yeah. And we have incentive to then work on a region-wide basis. If we were granted a license today in western Iowa, our priority would be to build that out, and certainly we would work with public safety to meet their needs as well.

Mr. Walden. I might just put this in perspective, some data I had seen. Public safety has 97 megahertz of spectrum allocated to it with about 2 million users. And by comparison, although they are different missions, Verizon has 115 megahertz of spectrum with 91 million users. So it really gets down to, in terms of spectrum, there is a wide variation on who uses what and for what

purpose.

I would turn now, I believe Mr. Barrow was here when the gavel fell, but Mr. Dingell is also here. I don't know how you all want to --

Mr. Barrow. Mr. Dingell has been kind enough to allow me to go first, but I would like to defer my turn, but not waive my time to questions to Ms. Matsui as the presiding ranking member, if that is okay with the Chairman.

Mr. Walden. I am happy if you all are happy, that is all we are here for.

Ms. Matsui. Thank you, Mr. Barrow, and thank you, Mr. Walden. We all know that the cost of constructing a nationwide public safety system will be substantial. This question is to Senator Gorton, and also the Chief. Aside from whether the deeplog is reallocated to public safety and added to the public safety existing 700 megahertz broadband spectrum, how do we ensure that the speech front spectrum is built out in the most efficient manner achieving interoperability while keeping the prices within reach given the Federal and State budget crisis?

Mr. Gorton. Well, I think you can assure that best by an auction system in which those users who think that the spectrum is worth most are willing to bid most, and have such conditions on them that allow their use in emergencies by the public sector. I think history indicates a formal straight-out allocation set by Congress or by someone else is not likely to result in that degree

of efficiency. The chairman referred to the fact that we began the incentive auctions, or auctions, back in the 1990s, I was on the Senate Commerce Committee at the time.

Ms. Matsui. Right.

Mr. Gorton. I think the history of dealing with spectrum in that fashion has proved itself time and time again.

Ms. Matsui. I know the Chief differs. Chief?

Mr. Dowd. Well, again, you know, as I said in my prepared comments, I made the statement that public safety based on its years of experience in dealing with commercial networks, knows that we cannot rely on public networks as a backup during mission critical and critical times. We know that those systems fail. So the notion or the suggestion that we would use those networks at those points is just an unworkable model. And the other problem is, that there would be an expectation that we would have to pay it for that service, and when we say "pay," that is the taxpayers that has to pay.

Ms. Matsui. That is right. Now, it is my understanding that public safety has an assigned spectrum and provided with Federal funding before to achieve interoperability. I know there is been some successes but we still haven't achieved full interoperability especially on a Nationwide basis. What needs to be different this time so that we don't repeat history, Chief?

Mr. Dowd. Again, the issue there is why we are not interoperable is that a long history of issuing public safety

spectrum in a patchwork fashion. So on a nationwide basis, you have public safety all over the spectrum map, so to speak. The only way you are going to fix that successfully is if you dedicate enough spectrum in the new technology so that we can be seamlessly interoperable across the country, and also give us the flexibility to utilize that spectrum for other purposes in government, public utilities and potentially, in public private partnerships. We have no objection to that.

Ms. Matsui. I see the Senator is disagreeing, but I have a follow-up question to that, go ahead, a quick comment there.

Mr. Gorton. Ms. Matsui, are you going to pay for it? The Chief says, well, gosh, if we have to buy it, the taxpayers have to pay for it. Well, you represent the taxpayers too, all of those taxpayers. The real question is, how much are the taxpayers going to pay, less if there is huge private investment in it, clearly very much less. And who is going to provide a more efficient use, almost certainly, history shows the private sector will do so.

Ms. Matsui. Okay. All right, I have an additional question here. How do you envision a plan for how the development and deployment of public safety broadband network would be managed, would there be a Federal entity to oversee it? Who should possess ultimate responsibility and accountability for ensuring achieving of nationwide interoperability, Chief?

Mr. Dowd. Yes, the answer is that there would have to be

some sort of entity created by the Federal Government to have oversight of this effort in order to coordinate it, to ensure interoperability and consistency in the use of the spectrum and other issues that have to be addressed. That being said, each regional area, each locality has its own unique public safety concerns, and the network of networks would have to have the flexibility so public safety could do their job locally while still being interoperable with everybody else.

Ms. Matsui. Senator, would you think there would be another entity here?

Mr. Gorton. I think the Chief made my case. Works for another Federal agency. If you think that is a good idea, go do it.

Ms. Matsui. I want Ms. Dillon to get involved.

Mr. Dowd. I apologize. I didn't suggest that there should be another Federal entity. I suggested that there should be an entity created to oversee this.

Ms. Matsui. Okay. Ms. Dillon, do you have any additional thoughts about that?

Ms. Dillon. The question?

Ms. Matsui. About whether there should be another entity, a Federal entity to oversee it or any other entity?

Ms. Dillon. I think there are probably lots of options, the PSSP, it could be on a statewide or a Federal basis, but we do believe that the notion of working on a local basis on the 700

megahertz spectrum with compatible technology around the country, but manage and operate on a local basis would make sense.

Ms. Matsui. I see my time is gone, thank you.

Mr. Walden. Thank you, Ms. Matsui. We will go now to Mr. Shimkus for 5 minutes.

Mr. Shimkus. Thank you, Mr. Chairman. I knew that the spectrum is a big broad area, but I knew it would come down to D Block and additional 10 megahertz. And I will try to move away from that for a few minutes too, but it is something I have dealt with because I authored the first 911 Wireline bill, I chair the E-911 caucus, now the Nextgen Communication caucus. And I have been very involved in the use of new technology to help first-line responders. I am a little bit -- no one wants to have this fight, Chief. We all want to get there.

You mentioned in Hurricane Katrina. Didn't the public safety network fail, and it was a commercial wireless that was able to help the communications?

Mr. Dowd. The fact that it may have failed doesn't justify the --

Mr. Shimkus. No, I am just making a point. And I think also we have broadcasters here, wasn't the public broadcasters during Katrina who helped get back on the air to help inform the public, wasn't that correct, Mr. Good?

Mr. Good. The Hearst Company has a station in New Orleans, and that is WDSU, and that station was on the air through the

event and a great expense and effort to do, but it was there and present.

Mr. Shimkus. And that is really, even when we go to the broadcasters, which is also very important debate that we have, and their spectrum is their responsibility to be able to provide real-time information. With all the new gadgets, it is still amazing that more people are getting information over the radio band on their car -- instead of satellite, instead of all this stuff. They are still getting more information from free over the air, which we forget about a lot of times, and their public safety responsibilities.

Senator Gorton and Chief Dowd, Mr. Knapp, how are the public safety waivers progressing and what can we learn from these waivers that help us on these broader questions? You know what I am referring to is the original 10 megahertz that you all have.

Mr. Gorton. I am going to have to defer that answer to someone else.

Mr. Shimkus. Well, maybe Chief can help us out, Chief?

Mr. Dowd. Well, I can only speak for New York City, and quite frankly, we are engaged with a number of vendors to do pilot projects on that spectrum in order to understand better --

Mr. Shimkus. So how long have you had this block?

Mr. Dowd. Since they were granted, that was last year sometime. Was it June?

Mr. Shimkus. So nothing other than Research, nothing has

moved forward yet?

Mr. Dowd. Well, no. Other than, again, planning.

Mr. Shimkus. I know that takes a long time. It is bureaucracy, it is government. Mr. Knapp.

Mr. Knapp. The waivers you are talking about, I think, were granted in May of 2010, it takes a bit of time to get them up and running. I can provide for the record an update to the status of all of those.

Mr. Shimkus. Thank you. And going back to, Ms. Dillon mentioned a regional approach. Those of us in rural, small town America are kind of worried that if this goes to the public safety folks, that regional small town, poor areas will get left out because it will focus around the major metropolitan areas. Now that is important if you are from the major metropolitan area. But Senator Gorton, can you talk to me, and Chief Dowd and Ms. Dillon, on the regional aspect? Would a regional approach solve some of my concerns?

Ms. Dillon. That is our contention that certainly there is room for a lot of players to play here in terms of both providing for public safety, maximum efficient use of available spectrum, which is not going to be solved simply by engineering alone. There was a question asked earlier, if it was only engineering, we wouldn't need to look to spend more money on spectrum. But we do believe that there are many ways we can look at smaller regional areas and make sure that all parts of the country are considered.

And we believe that if it went only on a national basis that it would, in fact, be the urban areas built out first, which makes sense from an economy of scale perspective.

Mr. Shimkus. And I want to finish up. So Chief, do you have anything on the regional approach? I only have 12 seconds.

Mr. Dowd. Okay.

Mr. Shimkus. Well, let me go to Mr. Knapp. Just so we just talk about the spectrum as a whole. If the FCC is correct, and mobile demand is poised out to its capacity in the future, what are the consequences for consumers?

Mr. Knapp. Dropped calls, slow data rates, services that don't work very well. And as the carriers are likely to respond, with setting higher prices for consumptions, consumer prices go up.

Mr. Shimkus. Thank you. Typical economics 101 supply and demand, I would say, right?

Mr. Knapp. Correct.

Mr. Shimkus. Thank you. Thank you, Mr. Chairman.

Mr. Walden. Thank you, Mr. Shimkus. I want to add on to your notion of everybody being involved in Hurricane Katrina. Don't forget the ham radio operators, too.

Mr. Shimkus. Who, who?

Mr. Walden. The amateur radio operators.

Let's go now Mr. Dingell from Michigan, the esteemed former chairman of the committee for 5 minutes.

Mr. Dingell. I thank you, Mr. Chairman, and I thank my good friend from Georgia for your kindness to me.

Mr. Knapp, these questions to you, I would appreciate a yes or no answer. And it may be that at some future time you want to come back with some further answers with regard to this and we will see when that comes. Mr. Knapp, I believe you were involved in drafting the spectrum provisions to the national broadband plan, yes or no?

Mr. Knapp. Yes.

Mr. Dingell. Mr. Knapp, it has been reported that those who drafted the proposal contained in the NPB failed to take into account the channel reservations of the Canadians which we are bound to honor by treaty. Were the Canadian channel reservations taken into account in the proposals that I have mentioned, yes or no?

Mr. Knapp. No, and the report acknowledges that.

Mr. Dingell. That is going to cause some problems, isn't it?

Mr. Knapp. And as we have done further work, we are doing just that, we are taking into account the Canadians and we are talking to the Canadians.

Mr. Dingell. Now, Mr. Knapp, let's turn to a market with which I am familiar, namely Detroit. Detroit is the tenth largest market in the country, it has 14 stations licensed in the Detroit DMA, is that your understanding?

Mr. Knapp. That is correct.

Mr. Dingell. Now, Mr. Knapp, the MBP recommends relocating 120 megahertz from the broadcast television to the wireless broadband access. I understand that if the Canadian channel reservations that were taken into account, there would not be any available channels for any of Detroit's 14 stations; is that correct?

Mr. Knapp. No, I don't believe that will be correct.

Mr. Dingell. I am sorry?

Mr. Knapp. No. I don't believe that will be correct.

Mr. Dingell. It is not correct, okay. We will come back to that because I think it merits further consideration. Put it another way, if less than 120 megahertz were reallocated and even one Detroit station were to be relocated, would there be a channel available for that station, yes or no?

Mr. Knapp. I would just preface that we will have to go through the process, but yes, we are confident that there will be.

Mr. Dingell. I am hearing two answers. On one hand, I am hearing you tell me that it is not correct, that there would be no channels available to the 14 Detroit stations. And then I am hearing some doubt in your remark. What is the truth of this matter? Why is it that -- why is it I am hearing these things, and why is it you can't give me firm, full assurances that you have taken already into consideration with regard to my city the availability of channels? What is the answer to that?

Mr. Knapp. Because the repacking will depend on which

stations decide to participate in the incentive auction and we don't know which those will be.

Mr. Dingell. So that information is not, at this time, available to us, we are forced to speculate what will be the consequences of that, is that right?

Mr. Knapp. Of course, it will depend on which stations participate.

Mr. Dingell. I must assume we have two borders, the Canadian border and Mexican border. I must assume that the Canadian channels are going to create, a, perhaps, a common problems stretching all the way from the Maine coast through Vermont, Rochester, Buffalo and onto Detroit stretching and then on west to where the Senator comes from, am I right?

Mr. Knapp. Those areas would be taken into account in the repacking and negotiations with Canada.

Mr. Dingell. Do we have assurances that that is so or is that just your pious hope and expectation?

Mr. Knapp. I believe that we can do that. We won't know until we have completed --

Mr. Dingell. So we don't know.

Now, Mr. Knapp, finally on a related note, you state in your written testimony no stations would be required to move from the UHF band to the VHF band unless they freely chose to do so in exchange for a share of the auction proceeds. Does the Commissioner believe that the broadcaster would receive a portion

a voluntary incentive auctions proceeds only if the broadcaster agrees to move from the UHF band to the VHF band, yes or no?

Mr. Knapp. Only if they -- yes.

Mr. Dingell. So.

Mr. Knapp. If they stayed where they were, there would be no change.

Mr. Dingell. It looks to me here a little like we are buying a pig in the poke, where the Commissions come up here and they are going to do all the wonderful things and we don't know exactly what they are going to do.

Now just one last question: Do you have statutory authority to do this, do you have to have statutory authority?

Mr. Knapp. We would need statutory authority for incentive auctions.

Mr. Dingell. So when are we going to get the precise character of what it is you are doing so that we can know what it is that we are voting for or against?

Mr. Knapp. What we are seeking is the authority to conduct the incentive auctions, it would be voluntary. Once we conducted the auction and saw who was going to participate and worked with the stakeholders, that is when we would know the final plan.

Mr. Dingell. Am I to assume that this same problem is going to plague us on the Mexican border?

Mr. Knapp. We also will need to negotiate with Mexico.

Mr. Dingell. You have comforted me, but little. Thank you

for your kindness?

Mr. Walden. And you are not the first witness to achieve that high praise.

Mr. Knapp. Thank you.

Mr. Walden. We go now to Mr. Latta for 5 minutes.

Mr. Latta. Well, I thank the chairman and I thank our witnesses for being here today, it is very, very important subject, and as you can tell from the questions from the members.

Ms. Dillon, if I could kind of go back to what Mr. Terry and also Mr. Shimkus were talking about again, talking about the small, the auctioning in the small area of blocks, and also providing for other smaller, not mega-region type folks to be buying into the spectrum. Could you define what a smaller carrier would be?

Ms. Dillon. What a smaller carrier could be?

Mr. Latta. Right.

Ms. Dillon. I would suppose anybody who is operating on a less than national basis, like ourselves and there is many others that are smaller than us. And so back to the question of auctions, in fact, you know, I think history would show that when the auction -- when the spectrum is auctioned on a less than national basis, more money can be raised. There are more participants in the room. So there was a question earlier about AT&T and T-Mobile, if that deal goes through it underscores even more so the opportunity and the need to have less than national

swaths here for the auction because there will, in fact, be more bidders in the room and more bidding means -- raises the prices and more money for the Treasury.

Mr. Latta. Let me at least follow up on that if I may. Again, if you are a smaller carrier, will you be able to come to the table with as much money?

Ms. Dillon. Well, it is all relative. We are not going to buy on a national basis because it is not relevant for our business but we have spectrum before and we would be interested in bidding on more, and I am sure other carriers would as well. It is really the life blood of our business. And we see the need for spectrum in spite of a tremendous amount of efforts around engineering and innovation, which we are really proud of as an industry. There is a need for more spectrum as well. So for any carrier to continue to compete, we need more spectrum.

Mr. Latta. Thank you. You know, Mr. Good, if I could go back and ask you a question with the incentive auctions being approved, what cost would you anticipate the broadcasters would incur?

Mr. Good. That is a question that is totally unknown at this point. I can't answer that. I would have to have a crystal ball. I can tell that you our company doesn't plan to take advantage of that.

Mr. Latta. Okay. Thank you. And Mr. Pitsch, how would you see that by freeing up additional spectrum how that helped

manufacturing in America because, you know, I come from a manufacturing area of the country, and how would you see that spectrum freeing up helping manufacturing?

Mr. Pitsch. Well, as Mr. Knapp has pointed out, given the burgeoning demand for mobile data, if we don't get more capacity, more spectrum, prices are going to have to go up, congestion will increase, new services won't be available. So I would contend, and I think the members of our coalition will contend that if we get the type of spectrum freed up that the FCC, the administration, lots of folks have recognized as needed, then we are going to enable new services and create jobs, it is going to be mean lower prices and this important part of our information infrastructure is going to be more robust.

So I can't give you a precise number, frankly, I am fairly distrustful of these fancy-dancy econometric models. But I think the basic insight of Congressman Shimkus is fairly right, is economics 101. If we get more capacity, we are going to have lower prices, less congestion, more minutes and that is going to be good for American consumers and workers.

Mr. Latta. Could you define new services?

Mr. Pitsch. Well, I think many of the video rich applications that consumers are using on Smartphones, the tens of thousands of apps could be considered new services. The -- I think, we are only limited by the fertility of the imagination of the American people here. If we can -- if we look at all of the

trends from my company in the silicon area, the semiconductor area, to compression technologies, and storage technologies, and the digital technologies, the 4G technologies in the wireless area, if we marry all of those improvements, there is an enormous opportunity for growth and innovation.

Mr. Latta. Thank you. Mr. Chairman, I yield back.

Mr. Walden. We turn now to the gentleman, Mr. Barrow.

Mr. Barrow. I thank the Chairman. Ms. Dillon touched on some of the practical considerations and in actually conducting a voluntary incentive auction regime, so I want to explore that just a little bit.

You know old Aesop, that old fable spinner told a bunch of fables. One of them he titled the Fable of the Dog in the Manger. This is the story of the dog that made his bed in a manger of hay. He couldn't eat the hay, but he would snap and snarl at animals that could whenever they would come by. And the moral of the fable is folks often begrudge others what they can't use themselves or won't use themselves. That is a negative characteristic of human nature in some folks. I think it could actually describe a practical real world problem if folks end up, through no motive of their own, begrudging folks what they can't use. And so you can imagine lots of license holders with enough money to get a license, but not enough money to be able to develop it. You can find folks scattered to hell and gone who have got licenses all over the place, but the buyers and sellers aren't

together. It seems to me that bringing folks together who have the spectrum but would rather have the money, together with folks who have the money would rather have the spectrum is something we can all agree on, and it is something we would all want to get behind some way or another.

But Ms. Dillon touched on some of the practical considerations in talking about that you can't do this on a dime, creating this marketplace and market opportunity is going to entail some consideration and some practical consideration. So Ms. Dillon, based on your experience at U.S. Cellular, have you all ever acquired any of your licenses in an auction format?

Ms. Dillon. Have we all -- I am sorry --

Mr. Barrow. Have you acquired any of your licensing authority as the result of an auction format? Have you gotten any of what you have to use through the auction process.

Ms. Dillon. Yes, we have.

Mr. Barrow. How long, based on your experience, if have you had any idea, how long did it take between the time that the spectrum was identified as being available on the one hand, and the time of the resulting auction on the other, how much --

Ms. Dillon. Honestly, I would probably need to get back to you with our specific experience, because our last auction, or purchase to spectrum predated my time at U.S. Cellular, but it is my understanding that it is not a fast process. The process of making it available, conducting an auction, clearly spectrum and

then deploying services is probably a multi-month, multi-year process.

Mr. Barrow. I imaging the next phase, the time we actually buy the spectrum and of course auction you can actually deploy services is going to take a far greater period of time. Based on your experience, what kind of time are we talking about there? Because we talked earlier in testimony about the fact the crunch times coming in 2014 which is right around the corner. Generally speaking, give us some idea of how long it would take between the time someone acquires a broadband spectrum through an auction an the time they can actually deploy services over what they bought?

Ms. Dillon. Yeah, it is my understanding that is probably a multi month, 18-month to 2-years process. But I would like to come back with specific examples from our experience. I think more importantly the point is and that is why there is urgency, the spectrum crunch is on us now, and there is engineers around this industry very hard at work driving efficiencies, deploying LTE fourth generation networks to drive more efficiency, and to handle the demand, but we believe that the need is now to start that process because it is time consuming.

Mr. Barrow. Thank you, Ma'am. We have got some dogs out there sitting on a bed of hay and they want to sell it to the other animals. We ought to encourage that as much as we possibly can. Thank you very much, and I yield back the balance of my time.

Mr. Walden. Thank you, Mr. Barrow. At the price of hay -- well, anyway. We are going to go to Mr. Bass now for 5 minutes.

Mr. Bass. Thank you, Mr. Chairman. Senator Gorton, welcome back, fellow Dartmouth alumnus. This is my first hearing on spectrum policy. When I left the Congress 4 years ago, we were completing the debate on DTV, whole new set of issues. Now we heard about the imperative that we move forward on this; we reviewed, I think, adequately, the debate that exists between public safety and the rest of the telecommunications economy.

Senator, can you expand a little bit on your testimony regarding the timing advantages of public private partnership resulting in public safety having access to the 700 megahertz spectrum now?

Mr. Gorton. Well, I think all of history has shown that the private sector has actually built out the spectrum that it received much more rapidly than the public sector has done. The chairman that started this hearing, what, I think four goals of the hearing: Reducing the deficit, increasing investment, adding needed spectrum, jobs and public safety. The only way, the only possible way of reaching all of those goals with what is at issue here is to go through a public auction procedure. The capital to exploit that will be available, no one is going to bid on it unless they are going to use it, and use it fairly properly. And that I think inevitably is going to lead to a public private partnership because the public safety community will then want

that to happen.

I am convinced that, in fact, it will happen. If, on the other hand, this is, the spectrum is given away, it isn't going to be used until the money is available from the taxpayers at one point or another, in multi billions of dollars to do so. And in this economic situation, that is going to take a long, long time.

Mr. Bass. I think you testified as to the cost. You thought the cost might be something in the vicinity of \$50 billion, can you elaborate on that?

Mr. Gorton. That would be the upper end of the estimates we have, but first, you lose the 3 or \$4 billion from not having the auctions, and again, that is going to cost somewhere between 25 and \$50 billion, or maybe more, to build it out. And bluntly, that is all going to be taxpayers money. If it is bid for, the money comes in and goes against the deficit, and the buildout is private sector.

Mr. Bass. Mr. Pitsch basically defined his ideas giving the FCC authority to conduct voluntary incentive auctions as quickly as possible. We know that Chief Dowd, what his position is. Do others of you have different variations on this issue as to what the appropriate legislative remedy is, or course of action is for the issue before us, the spectrum? Anybody have any further comments? If not, it looks like we have got it nailed. I will yield back to the chairman.

Mr. Walden. Okay, I guess we are ready to go to a vote. I

now recognize the gentlewoman from Tennessee, Ms. Blackburn, for 5.

Mrs. Blackburn. Thank you, Mr. Chairman, and I thank all of you for your patience. I think it is so evident here today that there is such a demand and a request for spectrum. I had someone in my offers earlier today for a meeting, and we were talking a little bit about the spectrum as you would well imagine, and the need for it and the need for broadband expansion because of the estimation that within the next few years, we are going to have not a billion, but a trillion devices that are going to be connected to the broadband.

And when you look at all of the help IT, just take my district there in Nashville and Memphis, and up to the Kentucky line. Look at that swath, I would like to say it is a creative community, lot of entrepreneurs, a lot of people that are inventing and innovating. And you look at the auto engineering, and you look at the digital music labels and distribution systems and the entertainment distribution systems and you look at the health infomatics and health IT components and all that we are doing. It is no wonder that pretty soon you are going to hit that trillion number. That means we are going have to have more access; you certainly can see how this debate is going to tee up and everybody wants a little bit more room on the spectrum.

Mr. Bazelon, I want to come to you and talk a little bit about the mobile DTV. Last year about this time, in May, we will

forever be known as the May floods in Tennessee. And 47 of our counties ended up as federally-declared disaster areas. Well, WSMV in Nashville broadcast in mobile DTV, and we had a lot of constituents that kept up with what was happening through those floods through that format. And let's just say if there were to be spectrum relocation and some of this was to be relocated so that companies like Cellular South or Ms. Dillon's U.S. Cellular could get on there and access some of that spectrum. Would my constituents in Tennessee have difficulty pulling in that mobile DTV band?

RPTS WALKER

DCMN ROSEN

[3:30 p.m.]

Mr. Bazon. It would be impossible to say the specifics of what would happen in your district.

Mrs. Blackburn. What would your estimation, your best guess?

Mr. Bazon. I think the answer to your question is that there will be more available bandwidth to your constituents from having reallocated television spectrum. You are quite right that on the other side of the mobile television broadcasting, there may or may not be less of that, depending on what the choices the broadcasters in your district make are, but the clear point is that any value they place on that service, any value that is placed on that service can be compensated for in an auction. And as my principle spectrum reallocation suggests that the spectrum shouldn't be reallocated if it is, in fact, more valuable for that service, and the auction is there to help discover the answer to that question.

Mrs. Blackburn. Okay. Mr. Good.

Mr. Good. Well, my company is involved in mobile TV, and it certainly has the ability to provide a lot of public service, as you described. People can see what is happening. And I just question, you know, we talk about mobile wide band. Why can't television be considered part of the solution rather than a

problem that has to be set aside? It can provide that service, and it still continues to provide the public service to --

Mrs. Blackburn. Let me interrupt you. I did have a question for you because when we hear a lot about relocating spectrum, and you know, saying, well, it could weaken this or it could weaken our coverage for that, and you have a TV station there.

Let me ask you this: As you transferred your signal from analog over into the DTV and going into the DTV transition, did any of your viewers ever have trouble pulling your signal down? Was there a problem with them doing it? And what percentage of yours can no longer receive your broadcast today, or has there been any diminishment of your market area?

Mr. Good. The conversion from analog to digital has been a very difficult situation for my station, sure. We initially went from channel 8 analog to channel 58 digital. That channel was out of bands. So eventually, it ended the process. Bands are repacked. We have to go back to channel 8, went back to channel 8 digital. In the meantime, because of the repacking, other stations have been dropped in close to us. We operate on channel 8. There was another channel 8 dropped in in Brunswick, New Jersey. Channel 9 was dropped into Bethlehem, Pennsylvania. All those things impact on the power levels you are able to broadcast with.

We went from 110 kilowatts to 5.4 in the digital world. We have gone back to the FCC through consultants and attorneys and

have gradually worked up in steps to 32.2 kilowatts. That still falls short. We still have complaints from viewers. We had thousands of complaints initially. We still get complaints. We have one cable system that despite their best efforts --

Mrs. Blackburn. But you are using the mobile DTV?

Mr. Good. At that point, we were not.

Mrs. Blackburn. Okay. But you are now?

Mr. Good. There are stations within my company that are.

Mrs. Blackburn. Mr. Pitsch, did you have something you want to add? I am over my time and I need to yield back.

Mr. Walden. Go ahead.

Mr. Pitsch. Thank you. Just very briefly to make two points.

It is important to separate the vacating sharing process from the repacking process, and the decision to vacate or share or move to a VHF band, that is only going to occur if the parties to the transaction both agree that the new use is going to be higher value. That is what it means because it is voluntary.

I think Mr. Good is quite correct to be concerned about repacking costs. I think we have to address those. I think Congress should make clear that they are kept whole, but just very briefly, the new spectrum would likely be worth \$35 billion. The money to the Treasury would likely be \$20 billion. Even if we doubled our own estimate and met the numbers in Mr. Good's testimony, we are talking \$2 billion. So I think this problem, if

it is put in the proper context, shouldn't cause or derail this important reform.

Mrs. Blackburn. Thank you. I yield back, Mr. Chairman. Thank you for your courtesy.

Mr. Walden. Indeed, and before I go to Mr. Scalise, I am going to ask unanimous consent to put in the record a statement of the National Association of Broadcasters. I believe it has been cleared with the minority. Without objection, so ordered.

And now, I would turn to the gentleman from Louisiana, Mr. Scalise, for 5 minutes.

Mr. Scalise. Thank you, Mr. Chairman. Appreciate the first of what I guess would be a few hearings on this important issue.

I know right after Hurricane Katrina, we experienced with Chief Dowd, I know you and some of your colleagues experienced in New York after September 11, and that was that you literally had first responders cut off from the ability to communicate. I know it was said by some that we went from the Jetsons to the Flintstones in a matter of moments, where literally you could not communicate, towers were knocked down, power was off, and it literally sent us back, it seemed like, to the stone ages in terms of communication and being able to get that vital information sent from local responders on the ground to others, and I know personally when I would go into the city in those first few days after trying to deal with issues, that is how I learned to text message because you couldn't use your cell phone but yet a text

message could get through. And I think I burnt out a couple of phones just trying to get text messages to people because that was the only way you could get communications, and obviously, that is not a situation that we should have to deal with.

And 4 years after September 11, we were still in that position, and here yet another 6 years later, we are still, it seems like, in that position. And so I think that challenge we face, as the FCC faces, is how we finally build an interoperable network.

I want to ask -- I know you addressed some of this earlier in your questions, but as we look at the cost of building that out, the spectrum that would be used to build that out, as you look at the money that would be generated from an incentive auction to supply some of that money, have you addressed that yet of how those could play hand-in-hand, Chief Dowd?

Mr. Dowd. Sir, let me be clear. You know, some of the numbers that are being thrown around here today are grossly overinflated. Those are estimates of how much it would cost if you were building a public safety network from the ground up. That is not the case. We already have existing infrastructure that can be leveraged. There are other infrastructure that can be leveraged. We have talked about public and private partnerships, public utilities. So the cost is more likely going to be in the \$10 billion range rather than, you know, the idea of \$25- or \$50 billion. It is simply not going to be that expensive.

So, again, looking at how we move forward in this, clearly what has become evident from many independent studies that have been done is that 10 megahertz of spectrum is simply not going to be enough for public safety. You know, I have four studies right here, and of course, I would like to enter them for the record if that is permissible.

Mr. Walden. Absolutely. With your testimony, without objection.

[The information follows:]

***** COMMITTEE INSERT *****

Mr. Dowd. That indicates that 10 megahertz of spectrum for public safety is simply not enough. So, as we move forward on this effort, again, we want to engage in the maximum flexibility to leverage the network, the public safety network, in order to ensure that we are as efficient as possible while still being able to accomplish the primary mission, which is mission-critical public safety capability. But that doesn't mean we don't want to use that network or allow for, for example, with smaller cellular companies around the country to make partnerships with public safety in those regions where it is appropriate to utilize that spectrum.

The problem here is, again, you know, we understand the fiscal realities of this, but the fact of the matter is we simply cannot, in today's environment and the threats that this country faces, not have enough spectrum to do the job. It is like suggesting that the Navy, when they are building an aircraft carrier because of a lack of funding should sell half the steel from the buildout of the aircraft carrier so that it can be funded.

You simply to need to have the resources you need to have, and the finite resource here is spectrum, and again, I point to the studies. These are real studies, real evidence of the use of public safety in broadband that indicate that 10 megahertz of spectrum is simply not going to be enough to do the job.

Mr. Scalise. Thank you. Mr. Knapp, I don't know if you want to respond to that as well as -- just really quickly if you can respond because my clock is running here. I am almost out. Do you want to --

Mr. Knapp. Well, it is more than just the technical problem, and most of the disagreements about exactly how much spectrum is going to be needed centered on projections of the use and concerns about when there is an emergency and there is a crisis, that is when the demand blooms.

Mr. Scalise. The broadcasters and the wireless carriers are saying that they are using their spectrum efficiently. I don't know if you want to comment on whether one technology is more efficient than the other or just address that.

Mr. Knapp. Well, the different technologies have different applications, and we like to think we are driving all of them to efficiency.

On the wireless side, there has been tremendous advances through cellularization, smaller and smaller cells. At the cellular show, I saw a number of vendors that are introducing even more efficient techniques. So this is something we at the Commission are continuing to encourage and drive.

Mr. Scalise. And final question, when you talked to -- I am not sure what your process has been, but if you do, as you go forward with a voluntary incentive auction, the assumption would be that there would be willing participants who would volunteer to

participate in that auction, and Mr. Good has said he wouldn't want to be involved in something like that. But have you talked to other stations? How do y'all poll to determine what kind of interest there would be to see if you could generate the \$35 billion or so that have been discussed?

Mr. Knapp. It clearly would be voluntary. The chief of our media bureau, Bill Lake and his staff, have been talking to literally hundreds of broadcasters. They conducted seminars, Webinars, about it where we have had about 500 different participants so we know there is interest.

Mr. Scalise. So they have expressed interest? Some have expressed interest?

Mr. Knapp. Absolutely. At the end of the day, it will be up to them individually once they see the plan and what they might get in return for them to make those decisions.

Mr. Scalise. Thank you, Mr. Chairman. I yield back.

Mr. Walden. I thank the gentlemen for his questions. I want to thank each of the witnesses for your testimony today and for your very candid and forthright answers to our questions. Our record will remain open for 10 days if other members of the subcommittee who either were here today or could not be here today have questions, they could submit to you. I would appreciate your responses in writing to that.

We will have additional hearings on this issue. We want to make sure that our brave men and women who protect us and defend

us have the equipment they need and a communication systems that works wherever they are in our country. We want to make sure the taxpayers are protected as well, and so we have a lot of issues we are going to flesh out here. That is why we are going to have several hearings. I want to make sure members of the subcommittee have every opportunity to get their questions answered and learn as much as they can about a very complex issue.

We hope to only go through this once in terms of allocating this spectrum, and so we want to make sure we get it right. And so we are going to take our time. We are going to do that. We will have additional hearings. We will announce that schedule along the way here, probably not today.

And with that, I again thank you all for participating, and with that, the hearing is adjourned.

[Whereupon, at 3:40 p.m., the subcommittee was adjourned.]