

Testimony of

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Mr. Chairman, Ranking Member, and Members of the Committee:

Good morning. I am Tom Sugrue, Chief of the Wireless Telecommunications Bureau at the Federal Communications Commission (FCC). I welcome this opportunity to appear before you today to discuss the important issue of spectrum policy.

I am sure that all of us on this panel and everyone on this Committee recognizes radio spectrum is a critically important resource that is in very high demand. State and local public safety officials rely on wireless technologies to help them respond in emergencies; consumers rely on wireless technologies to keep in touch with family and friends and to improve their overall quality of life; broadcasters provide news and entertainment over the air and are moving to spectrally efficient digital transmission; businesses rely on wireless technologies to communicate with an increasingly mobile workforce; and our national defense agencies rely on wireless technologies to provide security to the country. In short, our nation has become dependent on spectrum-based services, which have brought great benefits in the form of enhanced efficiency, greater security, and an overall improvement in the quality of life of our citizens.

In terms of spectrum needs, though, the wireless revolution is becoming a victim of its own success. The simple truth is that, as our society grows increasingly dependent on wireless technology and services, spectrum demand is stressing the supply, and that has made spectrum management a difficult task for government. This is true even though technology advances are

enabling more efficient use of the radio spectrum. This is true even though the Commission has taken significant steps to provide its licensees with additional flexibility, allowing them to better respond to market demands and changes. This is true even though the Commission has reclaimed underutilized spectrum on numerous occasions. Thus, the overarching challenge of spectrum policy is to ensure the public interest is best served by balancing competing demands for scarce spectrum while striving to promote competition through the deployment of new technologies.

Moreover, the challenge of spectrum management is one of process as well as substance. As the current FCC Wireless Bureau Chief and a former Deputy Administrator of the National Telecommunications and Information Administration (NTIA), I am particularly cognizant of the need for efficient coordination between the two agencies. In addition, U.S. domestic spectrum policies exist within the broader context of international spectrum agreements with other countries around the world and specific operational coordinations, especially with Canada and Mexico.

Spectrum policy is not static. It is difficult to accurately predict spectrum needs not just for today, but for the next generation. Indeed, most users and service providers believe they will continue to need more spectrum in the coming years. Twenty-five years ago, when the Commission first allocated spectrum for cellular telephone services, no one – neither the FCC nor the industry – realized how rapidly this sector would grow. Cell phones were perceived principally as a car phone service and not personalized communications devices that people

would carry with them throughout the day. In a now often told story, a prominent carrier estimated that at most there would be one million cell phone subscribers in the United States by the end of the 20th century. This reportedly was why the carrier agreed to have its cellular licenses go with the Bell Operating companies at the time of divestiture. Well, by the year 2000, there were actually 110 million cell phone subscribers. And to be fair, the FCC did not do much better with its “crystal ball.” The FCC’s allocation of additional spectrum for this market in 1994 – the Personalized Communications Service (PCS) allocation of 120 MHz – was based on a projection of 54 million wireless subscribers by the year 2000. So, even though it only was projecting six years in advance, the Commission’s estimates were still off by 100 percent in anticipating the actual demand for these services. Although technological advances can improve spectrum efficiencies, they are not a panacea and may not offset the increased need for spectrum. The FCC’s recent experience has shown that flexible policies that allow the market to adjust without constant government intervention are essential in the dynamic world of wireless communications.

Though spectrum management can be a demanding undertaking, we have seen the benefits of successful spectrum policies to the American people. For example, when the Commission auctioned that 120 MHz of spectrum for PCS, that action and the build-out of new networks transformed mobile telephony from a tight duopoly to an actively competitive market with multiple providers, and from a luxury for business and high-income users to a mass market service. Prior to the PCS auction in 1995, there were approximately 24 million commercial mobile subscribers. Today, there are over 130 million subscribers and over 80 percent of the

American public lives in counties that have five or more competitors. Moreover, since 1995, the average price per minute for consumers has been cut by about three quarters. Sound spectrum policies that promote flexibility, competition, and innovation clearly contributed to the marketplace success of PCS.

Spectrum policy has been and continues to be one of the core functions of the FCC, and I am now pleased to discuss the FCC's role in this regard and its efforts to manage the spectrum more efficiently.

An important principle underlying the FCC's recent approach to spectrum allocation and assignment on the commercial side is that the market should be the primary determinant in the success or failure of a new technology or service. In that vein, the FCC has made substantial use of the auction authority granted by Congress in 1993 and made mandatory for most services, including commercial broadcasting, in 1997. All FCC licenses are potentially subject to auction except public safety, public broadcasting, and international satellites. As Congress anticipated, our experience has shown that auctions award spectrum to applicants that value it most, are fast and objective, and compensate the public for use of a valuable and scarce resource.

In addition, the Commission has favored flexibility in its licensing rules in order to permit licensees to respond to market demands and changes. In most recent allocations, the Commission generally has limited its technical and operational rules to those necessary to ensure that harmful interference is avoided. In addition, the Commission permits disaggregation and

partitioning so that if a licensee finds that it wishes to transfer some of its spectrum or part of its licensing area, it can do so without relinquishing its entire license. The Commission is currently examining ways to improve opportunities to access spectrum through other mechanisms, including secondary markets.

Though the Commission's initial allocation and assignment process creates the primary market for wireless services, the Commission has recognized the importance of secondary markets as well as the importance of allowing spectrum resources to be used most efficiently. The Commission permits licensees to transfer their licenses to other entities, subject to Commission approval. We process the great bulk of these transactions rapidly, consistent with the needs of a dynamic, competitive market. We also are looking at whether there is a need to stimulate greater use of secondary market transactions to promote the efficient use of spectrum. Also, in several bands, the Commission has authorized the use of "band managers," which are licensees that act as spectrum lessors with market incentives to ensure efficient use of spectrum, especially among private spectrum users.

The Commission also recognizes that it must ensure that the needs of non-commercial users, such as public safety agencies, are met. In this regard, over the last several years, the FCC has taken a number of significant steps to ensure public safety entities have access to sufficient spectrum. For example, the Commission has implemented the Congressional directive to ensure that a portion of the 700 MHz band is used for public safety. The Commission set aside ten percent of the band for public safety interoperability services and, based on input from the public

safety community, adopted rules to promote nationwide interoperability in that band. In addition, the Commission has a proceeding underway to address concerns about interference to public safety in the 800 MHz band. Also, earlier this year, the FCC allocated 50 MHz of spectrum in the 4.9 GHz band for fixed and mobile wireless services and designated the band for use in support of public safety. The Commission recognized that this allocation and designation has the potential to provide public safety users with additional spectrum to support new broadband applications such as high-speed digital technologies and wireless local area networks for incident scene management. The spectrum also can support dispatch operations and vehicular or personal communications.

After spectrum has been allocated and assigned for use, the Commission is committed to ensuring that the spectrum is used efficiently. Periodically, the Commission revisits existing spectrum allocations and reallocates underutilized spectrum, either through relocation of existing operations to different – usually higher – frequency bands, by removing existing services altogether, or by providing incentives for communications facility substitutions – for example, switching from radio operations to fiber optic cable. Through this often complex and controversial process, the Commission has reallocated more than 300 MHz of spectrum. This spectrum is located below 3 GHz – an especially prime area of the radio spectrum that is suitable for a multitude of applications but especially valuable for mobile uses. One good example of the Commission’s spectrum reclamations is when, in our Emerging Technologies proceeding, we reclaimed more than 200 MHz of spectrum from private fixed microwave services and made that spectrum available for new services, including the 120 MHz for licensed PCS that I mentioned

earlier. In addition, we have required some of our licensees to make do with less in order to make room for new and beneficial uses. One such example is when the Commission reduced the allocation of the broadcast auxiliary service (the Commission's term for the service used by those ubiquitous broadcast TV trucks) from 120 MHz to 85 MHz.

In addition, because some users of spectrum, such as public safety and private wireless, do not face the same market-driven opportunity costs to use spectrum efficiently as commercial users face, the Commission has taken additional steps to ensure efficient spectrum use by these users. For example, the Commission has undertaken "refarming," which involves the migration of certain private and public safety users to more spectrally efficient technologies. In some bands, such as 700 MHz public safety bands, the Commission has adopted specific efficiency standards. In addition, the Commission is in the process of conducting its first-ever audit of public safety and business/industrial radio services licensed on frequencies below 512 MHz. This has been an enormous undertaking to verify the construction and operational status of over 400,000 call signs. As a result, over 31,000 licenses have been recovered to date. Licensees who do not respond to FCC letter of inquiry during this audit ultimately risk losing their license.

Even as I enumerate some of the actions that the Commission has already taken to improve utilization of the radio spectrum, we can do better. As Chairman Powell has observed, the Commission's current "command and control" approach to spectrum allocations may be too reactive for the current, Internet-speed market, and often spectrum allocation decisions do not effectively push spectrum to its highest and most efficient use. To address these issues,

Chairman Powell recently created a Spectrum Policy Task Force. Some of the objectives of the task force include studying options for a more market-oriented spectrum allocation policy, examining ways to clearly define spectrum interference and usage rights, reviewing methods of aggressively promoting spectral efficiency, and reserving and protecting access to sufficient spectrum for public safety. The task force has sought public comment on these and other spectrum policy issues, will conduct multiple workshops this summer to facilitate discussion regarding spectrum policies, and will provide a report to Commission by October of this year. Chairman Powell supports systemic reevaluation of spectrum policy as we know it today. Without a doubt, the Commission is struggling to keep pace with market innovations.

The FCC is not the sole manager of the radio spectrum. A significant amount of the spectrum is in bands that are shared with both federal and non-federal users. In these bands we need to coordinate with the Office of the Secretary of the Department of Commerce or, more specifically, NTIA's Interdepartment Radio Advisory Committee (IRAC).

Generally, the IRAC coordination process operates smoothly. Approximately 85,000 items are coordinated annually – these include approximately 5,000 non-government license applications and approximately 80,000 federal government authorizations. In addition, last year, Commission staff coordinated with IRAC on approximately 50 items that were acted on by the full Commission - - these include, among other things, rulemakings and waivers. Almost all of the items addressed in the IRAC process involve issues that are successfully resolved through established coordination procedures among the relevant agencies.

Moreover, there are many instances in which we work cooperatively with NTIA and other executive branch agencies that fall outside of the formal coordination context. Usually these efforts arise in the context of implementing spectrum transfers from federal government to non-federal government users. These efforts are not inconsequential. Despite the fact that particular spectrum may be earmarked for transfer, a lot of issues remain in the details associated with the transfer – issues like timing of the availability of the spectrum, the geographic extent of grandfathered federal operations, interference protection criteria, and reimbursement procedures for federal government operations that may need to be relocated to different frequencies. Indeed, often through these cooperative, interagency efforts we have achieved positive results. For example, originally 50 MHz of spectrum at 4.6 GHz was earmarked for transfer from federal government to non-federal government use. In part, the 4.9 GHz band was substituted for this spectrum as the result of concerns raised by the U.S. Navy about possible interference in frequencies adjacent to the transfer frequencies.

The FCC and NTIA currently are working vigorously through an interagency staff-level effort to examine and develop possible spectrum options for advanced wireless systems, including so-called third generation (3G) wireless services. These systems would support much higher data rates than the current generation of services and hold the promise for enabling services such as connection to the Internet while away from your normal work station or computer. This effort, under NTIA's leadership, is also evaluating the potential for sharing between advanced wireless systems and current spectrum users, including government users, as

well as reviewing possible options for relocation spectrum. There have been numerous staff-level meetings with representatives from executive branch agencies in an effort to have a full and productive dialog about the multitude of technical issues associated with the spectrum identified as potential bands for new uses. There is no doubt that this is a complex problem, but the staff is working hard to bring its recommendations forward to the decision-makers at our respective agencies in the near future.

In addition, we recognize that U.S. domestic spectrum policies exist within the broader context of international spectrum agreements with other countries around the world. For example, the Commission is participating in the State Department-led June 2003 World Radiocommunication Conference (WRC) – a treaty-level forum held by the International Telecommunication Union (ITU) to decide on allocation of spectrum. The Commission began its preparations for the 2003 WRC in December 2000, just six months after the 2000 WRC held in Istanbul, by organizing its industry WRC 2003 Advisory Committee. The Commission has recently completed the ninth meeting of the WRC Advisory Committee and approved proposals for all but a few of the 39 WRC Agenda items. The Commission is working with NTIA and the State Department to reconcile a few outstanding proposals to finalize the U.S. Government positions. The Commission also is participating in the State Department-led process of building international support for the U.S. positions in the year remaining before the WRC-03.

I would like to thank you, Mr. Chairman, for the opportunity to appear before you today. I look forward to working with you and other Members of this Committee on these important

U.S. spectrum management policies. I would be pleased to answer any questions you might have.