



May 16, 2011

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Room TW-B204
Washington, DC 20554

Received & Inspected
MAY 20 2011
FCC Mail Room

Re: FCC File No. SAT-MOD-201011118-00239

Dear Secretary Dortch:

The National Agricultural Aviation Association (NAAA) would like to share our thoughts with the Federal Communications Commission (FCC) on the conditional waiver granted to LightSquared which would allow them to repurpose the satellite spectrum immediately adjacent to the Global Positioning System (GPS) frequencies. NAAA has serious concerns with the overarching effects these ground-based radio signals could potentially have on our nation's aerial applicators and the millions of users who rely on GPS every day.

The NAAA consists of more than 1,600 members in 46 states. NAAA represents the interests of small business owners and pilots licensed as commercial applicators that use aircraft to enhance food, fiber and bio-fuel production, protect forestry and control health-threatening pests. Pesticides and their timely application play an important role in protecting our food and water supply, public health, natural resources, infrastructure and green spaces. Approximately 18 percent of crop protection products applied in the U.S. are applied by air. Aerial application is often the only, and/or most economic method for timely pesticide application. It permits large and often remote areas to be treated rapidly, thus ensuring timely and efficient service. When the surface water, wet soil conditions, rolling terrain or dense plant foliage prevents the use of other methods of pesticide application, aerial application may be the only remaining method of treatment. Additionally, aerial application is conducive to higher crop yields, as it is non-disruptive to the crop and causes no soil compaction, hence preventing soil runoff. This results in more food and fiber being produced using less land allowing the land to be repurposed for other uses, including habitat preservation for endangered and/or threatened plant, animal and aquatic species; and for preserving vegetative ecosystems important to the sequestration of carbon.

In the more than 30 years since the inception of the first GPS, millions of Americans have come to count on GPS-enabled devices in all walks of their lives—in their cars, on their cell phones and in many other hand-held devices. For aerial applicators, GPS is essential in swath guidance to ensure the most precise and efficacious pesticide application. Ag pilots program the coordinates of the field they are to treat into their GPS in order to locate the field quickly thereby saving time and fuel. Once the field is located, the GPS with an indicator light system guides them as they make their spray passes through a field. In the latest 2011 NAAA survey, 93 percent of ag operators reported they use GPS for swath guidance while applying pesticides by air. In addition, the ag aviation industry is anticipating the use of GPS in the future for mapping hazardous tower obstruction locations in a searchable national database to alert the pilot to the tower's location and prevent a potentially deadly collision with the tower. This type of system is already being utilized in Wyoming, where the state has a tower database or reporting system already in place. Thus, while the Obama Administration's initiative to increase broadband availability for all Americans within the next several years is admirable, implementation of high-speed wireless access may come at the expense of those who actually need and use GPS the most.

NAAA is very concerned about the proposed LightSquared new wireless network that will operate in the frequency band immediately adjacent to the GPS band. The problem arises because this wireless network's signal is so much more powerful than the GPS signal, it will likely interfere with or completely block many GPS receivers, potentially leading to widespread interference for GPS users across the country. This would include, in addition to aerial applicators, federal agencies, state and local governments, first responders, airlines, mariners, civil engineering, construction and surveying, agriculture, and everyday consumers in their cars and on handheld devices. Before introduction of LightSquared's 4G network, it must first be unequivocally substantiated that interference with GPS will not be an issue. Moreover, the responsibility of ensuring interference is not present must rest with LightSquared alone and not the millions of GPS users who will be affected by their actions.

Testing conducted by GPS Manufacturers, Garmin and Trimble, indicate "GPS jamming" will occur within close proximity to the ground-based LightSquared transmitters. According to the report¹, the consumer GPS device tested began to experience jamming at a power level representing a distance of 3.6 miles from the simulated LightSquared transmitter and lost a fix completely at 0.66 miles from the transmitter. Additionally, the Federal Aviation Administration (FAA)-certified aviation receiver began to be jammed at a distance of 13.8 miles and experienced total loss of fix at 5.6 miles from the transmitter. Furthermore, many experts predict LightSquared will affect high-precision GPS users, such as those used in mapping, GIS and navigation, even more than consumer-type GPS receivers. This is as a result of the wider radio frequency band used in high-precision GPS receivers which allows for more jamming

susceptibility. Because the aerial application industry is indeed a prescribed high-precision user NAAA is extremely concerned about the very real possibility of GPS interference.

It is NAAA's position and request to the FCC that the issue of GPS interference must be addressed and remedied before LightSquared can proceed with implementation of its wireless network. The potential for interference with GPS is national in scope and without a clear understanding by stakeholders as to how the proposed network will affect all current GPS users, the issue of expanding broadband availability cannot move forward. As a result, NAAA would ask the FCC to allow sufficient opportunity for public comment on the forthcoming report concerning the LightSquared new wireless network.

NAAA appreciates the FCC's consideration of our reservations with the LightSquared 4G network and asks the FCC to ensure the benefits afforded by LightSquared do not adversely affect current GPS use. We support the Administration's endeavor to offer high-speed Internet access for the majority of Americans, but not at the expense of any and all GPS usage in the U.S., particularly for our nation's aerial applicators that play such a vital role in the safe, affordable and abundant production of food, fiber and bio-fuel for global consumers. NAAA fears LightSquared's network will potentially present more problems than anticipated. We are committed to working with the Federal Communications Commission to ensure GPS users are protected and advancements in the industry are made as well. We look forward to a continuing dialogue on this most important matter of GPS usage in the aerial application industry.

Sincerely,



Andrew D. Moore

Executive Director

¹GPS World (2011, Feb. 1). *Data Shows Disastrous GPS Jamming From FCC-Approved Broadcaster*. Retrieved May 9, 2011, from <http://www.gpsworld.com/gnss-system/news/data-shows-disastrous-gps-jamming-fcc-approved-broadcaster-11029>