

425 Lafayette Street
New York, NY 10003

October 12, 2017

Chairman Ajit Pai
Commissioner Mignon Clyburn
Commissioner Michael O'Rielly
Commissioner Brendan Carr
Commissioner Jessica Rosenworcel
c/o Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: ET Docket No. 14-165 and GN Docket Nos. 12-268 and 14-166 Via Electronic Filing

Dear Chairman Pai, Commissioner Clyburn, Commissioner O'Rielly, Commissioner Carr, Commissioner Rosenworcel, and Ms. Dortch,

I am writing to you on behalf of The Public Theater, which offers over 500 performances, productions, readings, and educational programs each year to an audience of 335,000 students and adults. I write with concern about available spectrum and protection for our wireless microphones and backstage communications devices.

The Public Theater is theater of, by, and for the people. Artist-driven, radically inclusive, and fundamentally democratic, The Public continues the work of its visionary founder Joe Papp as a civic institution engaging, both on-stage and off, with some of the most important ideas and social issues of today. Conceived over 60 years ago as one of the nation's first nonprofit theaters, The Public has long operated on the principles that theater is an essential cultural force and that art and culture belong to everyone.

We strongly support the Commission's proposal to expand Part 74 license eligibility to include persons and organizations that can demonstrate the need for professional, high-quality audio and have the capability of providing it through conscientious use of wireless microphones. We support and endorse the Comments filed in these dockets by The Performing Arts Wireless Microphone Working Group.

Professional performing arts organizations hold thousands of performances each year, and wireless microphones are essential to producing high-quality performances while mitigating

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significant public safety concerns. Professional wireless capability, with successful interference protection, is essential to our sector.

Our Maximum number of Wireless Microphones in use during the Fall 2016 season was **84 Wireless Microphones** comprising both handheld and body-pack transmitters. Our Maximum number of Wireless Microphones in use during the Delacorte 2017 summer season is was **60 Wireless Microphones** comprising both handheld and body-pack transmitters.

Our Average number of Wireless Microphones in use during the Fall 2016 season was **75 Wireless Microphones** comprising both handheld and body-pack transmitters. Our Average number of Wireless Microphones in use during the Delacorte 2017 summer season was **45 Wireless Microphones** comprising both handheld and body-pack transmitters.

Downtown we use a fair bit of Wireless Intercom (Telex/HME) – We used **5 Dual-Channel Intercom Base Stations** comprising **20 Wireless Belt-packs** utilizing a total of **30 Discreet Channels of RF**. We also use a fair bit of In-Ear Monitoring. We had **7 Permanent IEM's** during our Fall 2016 season. Not including artist provided IEM's at Joe's Pub that are becoming more and more popular. In the Delacorte during the 2017 summer season we used **3-Dual Channel Intercom Base Stations** comprising **12 Wireless Belt-packs** utilizing a total of **18 Discreet Channels of RF**. We also had **4 Permanent In-Ear Monitors (IEM)**.

A **typical play** we did Downtown had at **minimum** 4 Wireless Microphones (2x courtesy announce microphones for the Director) and 1 Intercom Base-Station with 4 Belt-Packs comprising 6 Discreet Channels of RF. A **typical musical** we did had at **minimum** 24 Wireless Microphones, 2 Intercom Base-Stations with 8 Belt-Packs comprising 12 Discreet Channels of RF, and 4 In-Ear Monitors (IEM). Every single presentation we do, from the smallest panel discussion to the largest musical uses wireless devices in some form.

Downtown we use partial, if not all, allowable space in Channels 14, 17, 19, 20, 21, 22, 27, 28, 32, 34, 35, 37, 39, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51. In the Delacorte we use partial, if not all, allowable space in Channels 16, 18, 20, 21, 22, 26, 27, 32, 34, 35, 37, 39, 45, 46, 47, 48, 49, 50. This spans the bulk of the legal white space from 400mHz to 900mHz.

All of our microphones are able to tune to more than one frequency – however it is a mixed issue. The main transmitters we use are Sennheiser SK50, SK5012, and SK5212. The SK50 and the SK5012 transmitters have six fixed-frequencies that they are allowed to tune to, they are not user changeable and every time we need to find a new frequency it requires that we send those transmitters in to an authorized RF Engineer to have their internal circuitry re-tuned to a different six frequencies. Oftentimes, we are only able to get about 2 usable frequencies out of them. The other 4 oftentimes overlap neighboring DTV stations or cause intermod with the other packs we use.

When we are lucky enough to have a show Downtown with SK5212's, they have a 24mHz switching bandwidth and we pair them with Sennheiser EM3532 receivers that have a

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36mHz switching bandwidth, down to .005 mHz. In the Delacorte we have two SK5212's which are tunable. We also have 8 Sennheiser 2000 series.

Downtown we rarely utilize RF devices outside of TV bands – we had 1 microphone below the TV bands (in the upper 400mHz range) and we had 8 microphones above the TV bands (in the lower 900mHz range). In the Delacorte we have no devices outside of the TV bands.

Every RF device we use is completely analog, we have no digital wireless. We have beta-tested 2.4GHz digital wireless devices at The Public in past seasons, to ultimate discontent and failure.

We rent all wireless devices in our downtown space. We own a small compliment of wireless microphones for use up in the Delacorte – this system is comprised of 38 wireless microphones, including 24 fixed-frequency SK50 body-pack transmitters, 4 fixed-frequency SK5012 body-pack transmitters, 2 fixed-frequency SKM5000 hand-held transmitters, 2 freely tunable Sennheiser SK5212's, and 6 freely tunable Sennheiser 2000 series body-pack transmitters.

Reasonable life-expectancy of the SK50's, SK5012's, and SK5212's is 10-15 years with yearly service due to their solid metal enclosure and durable build quality. Reasonable life-expectancy on the 2000 series is 5-10 years due to their cheaper plastic housing.

I would urge the Commission to grant a Part 74 license if an applicant can provide certification of:

- A mission statement of providing performing arts to the public;
- A history of professional-quality wireless audio presentations to audiences without interference;
- Technical guidance and frequency coordination by qualified professionals (active in audio engineering who have academic degrees or equivalent professional experience and who are familiar with radio-frequency coordination);
- A commitment to register for protection only the frequencies, times, and locations actually needed; and
- A practice of keeping logs of all wireless microphone uses, including frequencies, for all performances.

We appreciate that the Commission has sought Public Comment on this critical issue. Without access to a reliable spectrum that provides protection from interference, our performances risk being less than professional!

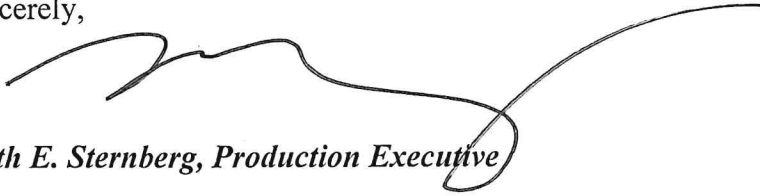
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Sound equipment is expensive. If purchasing new equipment is an outcome, will the FCC be able to provide assurance that the new system will work properly without interference?

A recent study commissioned by New York City Department of Cultural Affairs called, *The Social Well-Being of New York City's Neighborhoods* led by Mark J. Stern and Susan Seifert of the University of Pennsylvania, stated that, "across the board, cultural participation correlates with improved health, personal security and school effectiveness," leading to "greater measurable impact in social well-being." For this reason we respectfully endorse the Commission's proposal to expand Part 74 LPAS rules that will accommodate performing arts organizations and educational institutions that use fewer than 50 wireless microphones.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ruth E. Sternberg', with a long, sweeping horizontal line extending to the right.

Ruth E. Sternberg, Production Executive