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March 29, 2019

Ex Parte

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: *Transforming the 2.5 GHz Band*, WT Docket No. 18-120

Dear Ms. Dortch:

On Wednesday, March 27, 2019, Ophelia Watahomigie-Corliss, Councilmember of the Havasupai Tribe; Mariel Triggs, CEO of MuralNet; Stephanie Weiner, Counsel for Voqal, the North American Catholic Educational Programming Foundation, Inc., and Mobile Beacon; and I held separate meetings with: Travis Litman, Chief of Staff and Senior Legal Advisor, and Jessica Martinez, Special Advisor and Confidential Assistant, to Commissioner Jessica Rosenworcel; Erin McGrath, Wireless Legal Advisor to Commissioner Michael O’Rielly; Bill Davenport, Chief of Staff and Senior Legal Advisor to Commissioner Geoffrey Starks; and the Wireless Telecommunications Bureau’s Deputy Bureau Chief and Chief of Staff Dana Shaffer, Broadband Division Chief Blaise Scinto, Broadband Division Deputy Chief John Schauble, Legal Advisor Jonathan Campbell, Nadja Sodos Wallace, Nancy Zaczek, Christiaan Segura, and Catherine Schroeder.

In these meetings, we described how the Havasupai’s LTE network, built in partnership with MuralNet, has brought—for the first time— high-speed broadband Internet access to Supai, AZ, the most remote community in the continental United States. Today, the Havasupai network relies on access to educational broadband service (EBS) spectrum that is currently provided through the FCC’s grant of special temporary authority.¹

As explained further in the attached document and in the [Havasupai’s previously filed comments](#), temporary access to EBS spectrum has already provided significant educational benefits to this previously unconnected community. The Havasupai are eager to launch additional educational, health, criminal justice and economic programs to meet critical

¹ See Application of the Havasupai Tribe for Special Temporary Authority, ULS File No. 0007981254 (granted Mar. 1, 2018).

community needs—but cannot do so until the FCC takes action on their permanent application for an EBS license, which has been pending since April 24, 2018. Given the persistent and pervasive digital divide throughout Indian Country, the Havasupai also support the tribal priority window proposed in the NPRM, which would give the Havasupai the opportunity to expand their LTE network and, more generally, tribal nations across the country their first opportunity to access EBS spectrum and bring much-needed broadband Internet access to their communities.

Sincerely,




/s/

John Bezdek
Shareholder
Water and Power Law Group

Attachment

Cc: Travis Litman
Jessica Martinez
Erin McGrath
Bill Davenport
Dana Shaffer
Blaise Scinto
John Schauble
Nadja Sodos Wallace
Nancy Zaczek
Christiaan Segura
Catherine Schroeder



The Havasupai's LTE Network	Expanded Needs in Supai, AZ	General Needs in Indian Country
<p>On February 28, 2018, the FCC granted The Havasupai Tribal Council special temporary authorization to use the A Channels over Supai, AZ, the most remote community in the continental United States. Within five days the first high speed Internet connection using the Havasupai's LTE network. A week after that, sixteen user-end devices were installed in the homes and offices. Educators could take online courses so that the the Early Head Start would be in compliance with national standards. K-8 teachers could continue their Master's programs online and finish their higher degrees in special education.</p>  <p>Shawntel, an educator at Head Start, was the first recipient of an user end device.</p>	<p>Education</p> <ul style="list-style-type: none"> • After school, online enrichment activities • Students in boarding school who need a credit recovery program to finish high school • Access to an online charter high school since Supai only has K-8 schools • Continuing education for adults to build skills • Cultural Preservation Programing <p>Economy</p> <ul style="list-style-type: none"> • Participation in the knowledge economy without having to leave one's way of life <p>Healthcare</p> <ul style="list-style-type: none"> • Realtime telemedicine appointments with doctors and nurses • Telecounseling for prescription services and hourly sessions for serious mental illnesses • Emergency communication between Beaver Falls, BIA and Tourist Office <p>Justice and Rehabilitation</p> <ul style="list-style-type: none"> • Live stream for the courthouse arraignments • Probation check-ins  <p>Tower over Supai capable of holding much more LTE equipment</p>	<p>The Havasupai's needs and lack of Internet connectivity is not unusual. According to the FCC, 60% of people on rural tribal lands lack broadband access compared to 30% of people in rural areas. The Havasupai connected themselves with cheap and reliable LTE equipment, an open source LTE distributed core for network management and existing backhaul. If the FCC approved tribal access windows for EBS spectrum, many other tribes could connect themselves like the Havasupai.</p>  <p>Methods of LTE equipment installation.</p>



Dates	By March, 2018 New Equipment Cost: \$15k	By August, 2018 New Equipment Cost: \$8k	Within a Month of Approval New Equipment Cost: \$40k
Backhaul	Havasupai: unrestricted 30Mbps donated by Niles Radio Communications	Havasupai: unrestricted 30Mbps donated by Niles Radio Communications upgradable to 300 Mbps	Havasupai: unrestricted 300Mbps donated by Niles Radio Communications with options to increase capacity
Spectrum License Request	<ul style="list-style-type: none"> • STA for A channels • two contiguous bands of 16.5 MHz (A1, A2, A3) and 4 MHz (A4) • One usable band of 15 MHz 	<ul style="list-style-type: none"> • Permanent license for A channels • two contiguous bands of 16.5 MHz (A1, A2, A3) and 4 MHz (A4) • One usable band of 15 MHz 	<ul style="list-style-type: none"> • Permanent license for A, B, C, D and G channels • One contiguous band of 66 MHz(A1, A2, A3, B1, B2, B3, C1, C2, C3, D1, D2, D3), one contiguous band of 30* MHz (A4, B4, C4, D4, G4), one contiguous band of 16.5 MHz (G1, G2, G3) • Three usable bands of 20 MHz, Two usable bands of 15 MHz
Deployment	<ul style="list-style-type: none"> • One base station • 20 user-end devices serving school and tribal offices, teacher and students' homes 	<ul style="list-style-type: none"> • One active base station and one back-up base station • 16 user-end devices serving school and tribal offices, teacher and students' homes • 23 user-end devices available for checkout by community members for educational purposes • One weather station user-end device 	<ul style="list-style-type: none"> • Five active base stations • 125 user-end devices serving school and tribal offices, teacher and students' homes, checkout by community members, etc. Could cover every structure in Supai to high-speed Internet
Network Performance	<ul style="list-style-type: none"> • Max speeds: 35/6 Mbps line of site, 32/2 Mbps non-line of site • Average speeds: 5-15/1-5 Mbps 	<ul style="list-style-type: none"> • Max speeds: 35/6 Mbps line of site, 32/2 Mbps non-line of site • Average speeds: 5-15/1-5 Mbps 	<ul style="list-style-type: none"> • Predicted average speed with current backhaul: 16/2 Mbps • Predicted average speed with 450 Mbps backhaul: 25/3 Mbps

*typo in original document stating 20 instead of 30 MHz