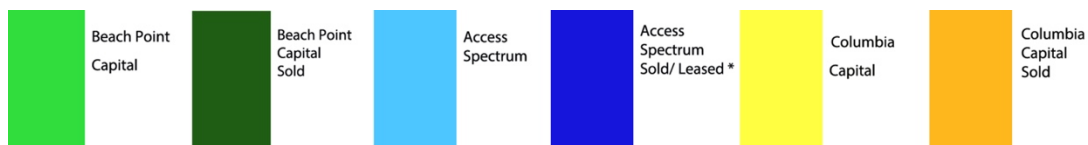
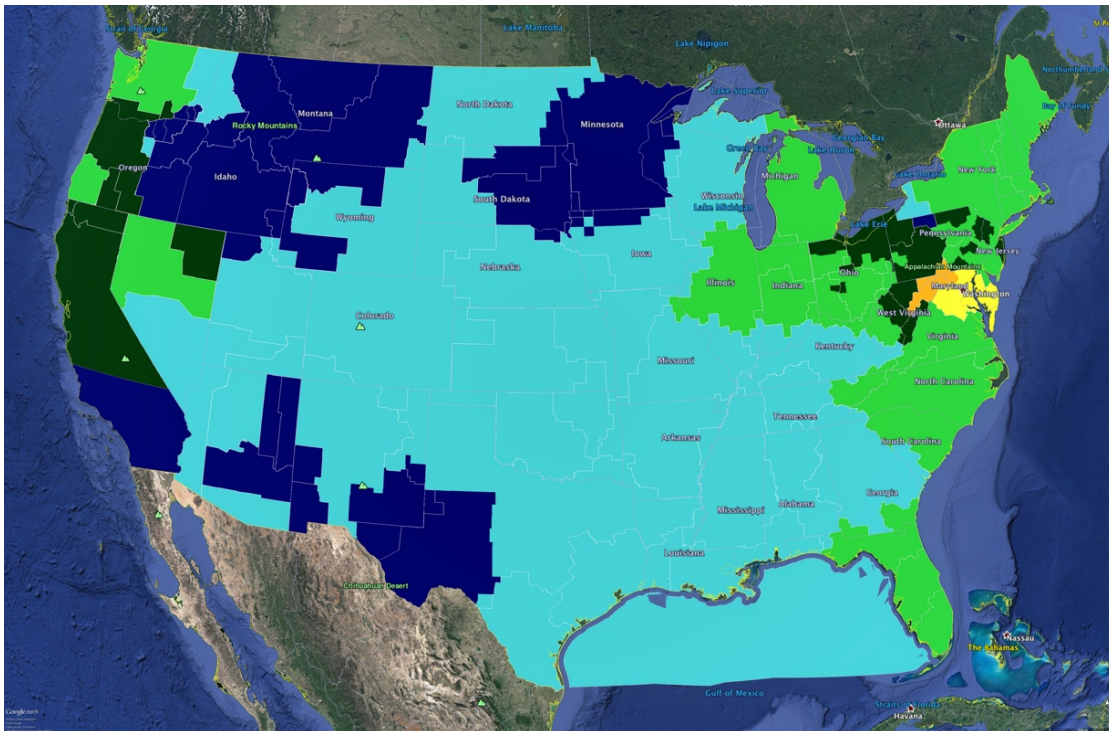


## Wireless Communications in the Upper 700 MHz A Block (757-758 MHz & 787-788 MHz) Band Suitable for Many Utility Applications Available Nearly Nationwide

Select Spectrum represents Beach Point Capital which holds 2 x 1 MHz of **Upper 700 MHz A Block FCC licensed spectrum**. BPC currently holds licenses providing available spectrum coverage to over 140 million U.S. residents. Available BPC spectrum coverage is shown below in light green on the map with sold or leased spectrum being reflected in dark green. The Utilities Telecom Council recommends this spectrum band for critical infrastructure applications, and UTC or Select Spectrum can provide copies of the relevant UTC White Paper.



The map also indicates areas covered by Access Spectrum and Columbia Capital. **All three license holders are working to sell their licenses.** BPC will sell its licenses together or individually and will partition its licenses to match utility operating areas at the county level.

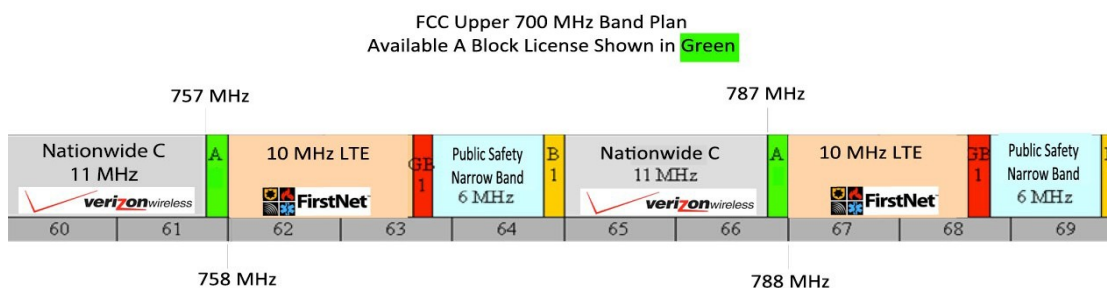
**The A Block spectrum can be used for a broad range of applications including fixed or mobile data, voice or video.** Networks may employ point-to-point, point- multipoint (tall site) and/or cellular structures.

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In total, eight utilities across the nation have acquired Upper 700 MHz A Block spectrum rights. **Great River Energy** of Minnesota is currently using the band for point-multipoint data collection; **Northwestern Energy** has deployed point-to-point links across Montana, North and South Dakota; **Salt River Project** purchased the Phoenix, Arizona license after completing a successful field trial; **Portland General Electric** has acquired spectrum rights to cover its operating areas across Oregon, Washington and California; and **FirstEnergy** has purchased from several licenses stretching from Ohio to New Jersey. Furthermore, BPC has initiated a project for 2018 to construct a network, using all unsold licenses, that will demonstrate the spectrum's excellent propagation and qualities. These utilities, among others that have purchased or are considering acquiring rights in the band, have formed a **Utility Users Group**. The **Electric Power Research Institute**, the WiMAX Forum, UTC and manufacturers are also supporting the development of the **IEEE 802.16s GRIDMAN standard** for equipment using the band, and use of the band is also under consideration for the **3GPP LTE Narrowband IOT standard**.

In addition to utility use, the spectrum is ideal for other critical infrastructure industries, innovative wireless and entertainment companies, machine to machine (Internet of Things) networks and control of unmanned aerial vehicles.

The Upper A Block spectrum is located between 757.0 and 758.0 MHz and between 787.0 and 788.0 MHz and has excellent propagation characteristics.



Maximum downlink power is 1000 Watts ERP at 1000 feet, and maximum uplink power is 30 Watts ERP. Maximum out of band emissions limits of 43 + 10log (P) dB apply to the A Block and the adjacent 11 x 11 MHz Upper 700 MHz C Block where Verizon operates a nearly nationwide 10 MHz paired LTE network. The A Block is similarly protected from interference from the adjacent public safety broadband channels at 758-768 MHz and 788-798 MHz. These frequencies were granted to FirstNet which Congress established to construct a national first responder LTE network. AT&T has been selected as the prime supplier to FirstNet; no construction schedule has been released.

Pt-Multipoint and Pt-Pt Wireless Equipment for this band is made by Full Spectrum [www.fullspectrumnet.com](http://www.fullspectrumnet.com), 4RF [www.4rf.com](http://www.4rf.com), GE MDS [www.gedigitalenergy.com](http://www.gedigitalenergy.com), ConVergence Technologies [www.converge-tech.com](http://www.converge-tech.com), XetaWave [www.xetawave.com](http://www.xetawave.com), ABB <http://www.abb.com/>, MiMOMax [www.mimomax.com](http://www.mimomax.com), Cambium <http://www.cambiumnetworks.com>, PowerTrunk <http://www.powertrunk.com/>, and Tait Communications <https://www.taitradio.com>. Other manufacturers are considering upgrading their existing lines of equipment to make use of this band.

The licenses are valid through July, 2019 when they will be renewed by the FCC for \$290 per license. To be eligible for renewal, license holders must show they meet the FCC's Substantial Service guidelines, which require a limited threshold of use of the licenses be met or exceeded.

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