



In 2017 the Texas State Legislature, under State Bill 1004 (SB 1004), specified that Texas municipalities must allow wireless network providers access to their public right-of-ways (ROW) for wireless installations. These installations are commonly referred to as network nodes, small cells or pico cells. SB 1004 restricted these municipalities from being able to negotiate their own monetary rates for ROW wireless installations by setting the maximum annual rates and associated fees that Texas municipalities can charge for these wireless installations. In addition, SB 1004 also established processes and standards that municipalities must comply with related to ROW wireless installations. Most municipalities have developed design manuals and checklists to give assistance and guidance to wireless providers so that their equipment can be installed timely, efficiently, safely and in an aesthetically pleasing way.

Texas municipalities recognize that SB 1004 does not alleviate them from their fiduciary duty of managing the public ROWs for the health, safety and welfare of the general public. Wireless network providers that are installing next generation wireless facilities in public ROWs are responsible for confirming and ensuring that the general public at ground-level along with utility personnel and contractors working elevated above ground-level are not exposed to excessive RF fields in these public ROW areas due to their wireless operations. SB 1004 does not eliminate the requirement for wireless providers to protect all personnel (including the general public) from exposure to RF fields in excess of the Maximum Permissible Exposure (MPE) Limits. These MPE Limits are federal regulations that have been officially adopted and enforced by the FCC and OSHA since 1997.



Many wireless network providers are adding new technology to their existing transmission sites and to city-owned utility and light poles, communication strands and other unique structures located in municipality ROWs in order to provide the newest and fastest next generation (i.e. 5G) wireless services. While many FCC licensees perform “in-house” RF exposure compliance checks of their transmission sites for budgetary savings, compliance with OSHA and FCC regulations for human exposure cannot be short-changed or overlooked.

Most municipalities wisely have statutes in place which require that all construction drawings submitted for permitting a ROW wireless installation be stamped by a Professional Engineer (PE) with the proper Civil/Mechanical Engineering expertise who is also licensed in the State where the proposed wireless installation

will reside. In addition, the ROW wireless installation design manuals that most municipalities have developed and that they enforce require that the construction drawings and simulation photos (if applicable) depict where on the ROW utility/light poles the human exposure RF warning signs should be installed. However many municipalities lack statutes requiring wireless network providers to also supply PE stamped radio frequency exposure (RFE) studies as part of the permitting submittal. An RFE study would not only analyze the “worst-case” RF field levels that could exist at ground-level taking into account the most stringent General Population MPE Limit but the study would also analyze the RF fields that could exist above ground-level and vertically on the utility/light pole where utility workers and/or contractors may need to work near and/or in the full transmitting aperture of a wireless operating antenna. The results of the RFE safety study would specify where the RF warning signs should be posted on each ROW pole and the study would be stamped by a licensed PE with expertise in Electrical/RF Engineering.

Trott Communications Group, Inc. (Trott) is a 40-year old independent radio frequency (RF) engineering consulting firm based in Irving, Texas. Trott is certified and registered by the Texas Board of Professional Engineers, certified as a woman-owned business enterprise (WBE), certified as a Small Business Enterprise (SBE), and certified as a State of Texas Historically Underutilized Business (HUB).

As a professional RF engineering and consulting firm with licensed Professional Engineers on staff, Trott has the expertise in RFE studies to ensure that ROW wireless installations in your municipality are in compliance with the FCC and OSHA regulations for human exposure to RF fields.

### **Trott’s RF Exposure and Compliance Services**

Trott started performing RFE Studies in the early 1990s and since that time Trott has performed thousands of RFE Studies in 46 of the 50 States and in Puerto Rico for various FCC licensees including wireless network providers, utility companies, airports, building owners and government entities. These studies consist of RF field measurements, RF predictions and/or an analysis using the human exposure rules from the FCC’s Office of Engineering & Technology (OET) Bulletin 65. Any of Trott’s RF exposure and compliance services can be customized to meet the specific needs and requirements of our clients. Trott also manages communication towers and rooftops in the State of Texas and understands the RF compliance issues that these facilities face.

An RF Field Measurement RFE Study is a cost-effective and FCC/OSHA-approved method to document the existing RF field levels as a percentage of each FCC MPE Limit for each tested area. The RF field measurements are collected on-site by Trott using a factory-calibrated Narda RF meter and broadband probe.

A Prediction RFE Study is also an FCC/OSHA-approved method to analyze the “worst-case” RF fields that could exist at a transmission site. This Study is commonly performed for proposed installations/modifications by utilizing a software program. The predictions assume all existing and/or proposed transmitters are operating at a 100% duty cycle (constantly). The output of a Prediction Study is a color-coded mapping of the site/rooftop which clearly defines the areas where the RF fields have the potential to exceed the MPE Limits. This mapping is used to develop an RF Site Safety Plan and is a critical component of RF Awareness and Safety Training.

A majority of the RFE Studies performed by Trott include an on-site survey by a Trott RF Engineer/Surveyor to collect the pertinent technical data required for the human exposure safety determination. Trott also offers RF Awareness and Safety Training (one-hour course) which provides each person being trained with the awareness and abilities to understand, recognize, prevent, control, and monitor their RF exposure levels.

If you have any questions and/or would like more information please contact Barry Black at (972) 518-1811 x106 or at [barry.black@trottgroup.com](mailto:barry.black@trottgroup.com). Also, please feel free to obtain additional information about Trott and our RF engineering services from our website at [www.trottgroup.com](http://www.trottgroup.com).