



## DWSD's response to RF Exposure concerns from Meters & Meter Interface Units

There have been questions and concerns from Detroit Water and Sewerage Department (DWSD) customers regarding the potential health hazards created by the smart automated meters, which are being installed as the new smart meters. The new meters operate by utilizing radio frequency (RF) waves. Because DWSD cares for the health and safety of our customers and employees who handle this equipment daily, the meter RF exposure was researched thoroughly, prior to choosing the smart metering technology.

DWSD values reports from authoritative agencies such as World Health Organization (WHO), Federal Communications Commission (FCC), Institute of Electrical and Electronics Engineers (IEEE), and the National Council on Radiation Protection and Measurements (NCRP) – DWSD RF exposure standards comply with their guidelines.

Regarding wireless technology and its effect on humans, WHO states:

*“To date, the only health effect from RF fields identified in scientific reviews has been related to an increase in body temperature (> 1 °C) from exposure at very high field intensity found only in certain industrial facilities, such as RF heaters. The levels of RF exposure from base stations and wireless networks are so low that the temperature increases are insignificant and do not affect human health.”*

*“Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF signals from base stations and wireless networks cause adverse health effects.”*

This information can be accessed at the following webpage:  
<http://www.who.int/peh-emf/publications/facts/fs304/en/>

FCC sets these guidelines:

*On August 1, 1996, the Commission adopted the NCRP's recommended Maximum Permissible Exposure (MPE) limits for field strength and power density for the transmitters operating at frequencies of 300 kHz to 100 GHz.*

DWSD uses Itron's Meter Interface Unit (MIU) model number 200W installed outside the property. These units 'wake up' every two (2) hours and transmit for 150 milliseconds while operating in 1.4 GHz frequency. The FCC's MPE limit for 1.4 GHz frequency is 0.933 mW/cm<sup>2</sup>. The calculated exposure from DWSD's MIU is 0.000004 mW/cm<sup>2</sup>, which is 0.0004% of the FCC's MPE limit.

This information can be accessed at the following web pages:

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

[http://transition.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins/oet56/oet56e4.pdf](http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf)

[http://transition.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins/oet65/oet65.pdf](http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)

The FCC guidelines for human exposure to RF electromagnetic fields were derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). Both the NCRP exposure criteria and the IEEE standard were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The exposure guidelines are based on thresholds for known adverse effects, and they incorporate prudent margins of safety. In adopting the most recent RF exposure guidelines, the FCC consulted with the EPA, FDA, OSHA and NIOSH, and obtained their support for the guidelines that the FCC is using.

This information can be accessed at the following webpage:  
<http://transition.fcc.gov/oet/rfsafety/rf-faqs.html#Q5>

Itron provides the wireless meter reading equipment that Detroit Water and Sewerage Department installs outside our customers' premises. These are the statistics from Itron:

- Limited time on the air: Our endpoint devices transmit for very short intervals spread throughout the day and thus have a very small duty cycle. This results in RF exposure levels that are a fraction of the limits specified by regulatory agencies, including the FCC and Industry Canada*
- Low power: Our devices are low power; one watt or less. These low levels of RF exposure are well below the regulatory limits and less RF energy than a typical cellular network.*
- Limited proximity to humans: Our devices are typically installed outside the home. Since RF energy falls off very quickly with distance, this typically represents much lower exposure than other RF devices located within the home.*

This information can be accessed at the following webpage:  
<https://www.itron.com/na/resourcesAndSupport/Pages/RF-Resource-Center.aspx>

Based on our findings, we are assured that the meters and the meter interface units used in the City of Detroit meet all standards of safety as set forth from reputable sources, such as FCC, IEEE, WHO and NCRP.

Our customers' and our employees' safety and welfare depend on quality products and equipment that we install. Therefore, we are confident that our equipment meets and exceeds the required guidelines needed to prevent any potential hazard to human health.

