APPENDIX C

Appendix C

Radiation Exposure Weather (REW) System

This appendix outlines the 15,007 sites from the National Radiation Exposure Weather (REW) Map and database. Seven of the site measurements were taken from live spectrum analyzer readings. Six of those seven are monitored 24/7/365.[1] The other 15,000 sites are real locations where equipment is located, however those 15,000 locations are populated with a conservative rendering of data that might be reasonably found from live measurements.[2] What follows are some REW depictions of the U.S. human RF exposure standard, both on average radiation amounts and peak radiation amounts. Additionally, those same sites are then reviewed against the wireless radiation exposure limits of other countries. Those countries are: Switzerland, Belgium, Russia, Chile, Israel, Canada, United Kingdom, Australia, India, China, and Italy. Some REW system results that follow depict locations operating at their (i) average, and (ii) peak levels.

[1] These six (6) sites are monitored 24/7/365:

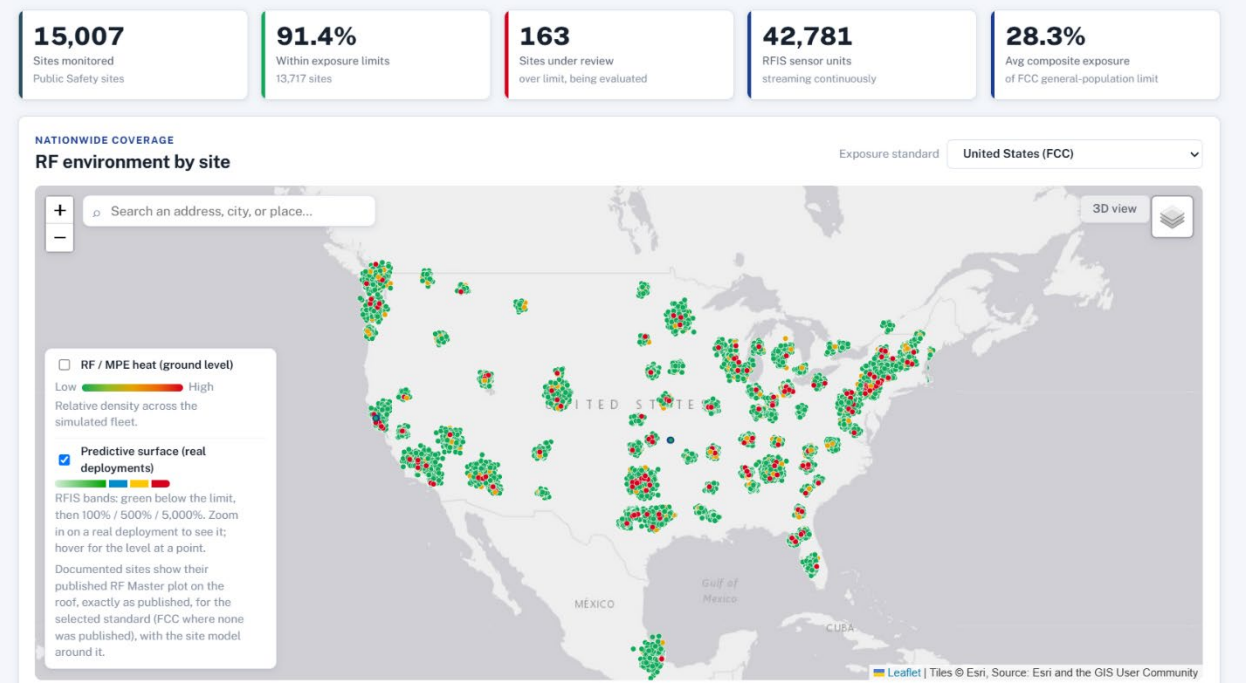
1. **Holt Middle School** – 2365 N. Ripple Road, Fayetteville, AR
2. **Vandergriff Elementary School** – 2200 Vandergriff Drive, Fayetteville, AR
3. **McNair Middle School** – 3030 E. Mission Blvd., Fayetteville, AR
4. **Treasure Island** – Naval Air Station on Treasure Island, San Francisco, CA
5. **Dolores & 18th** – 3862 18th Street, San Francisco, CA
6. **TDS Building** – Silver Spring Innovation Center, 8070 Georgia Ave. Silver Spring, MD

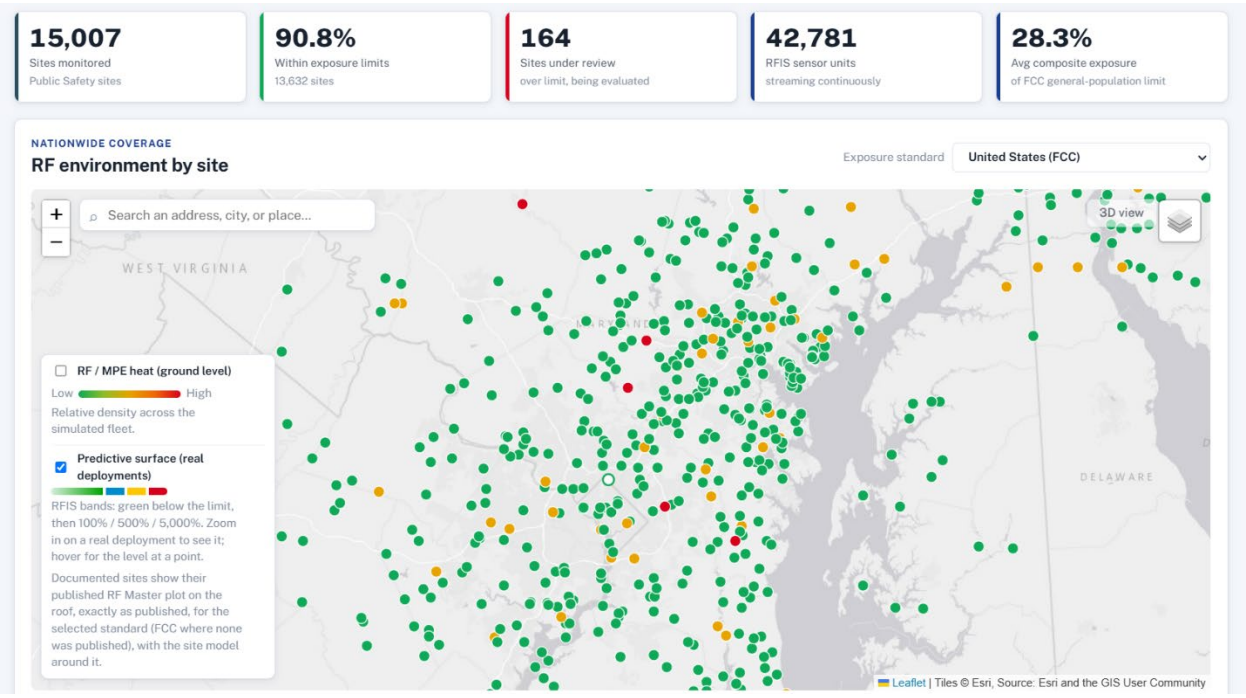
The seventh site with real data is **Woodley Park Apartments** – 2701 Connecticut Ave. NW, Washington, D.C.

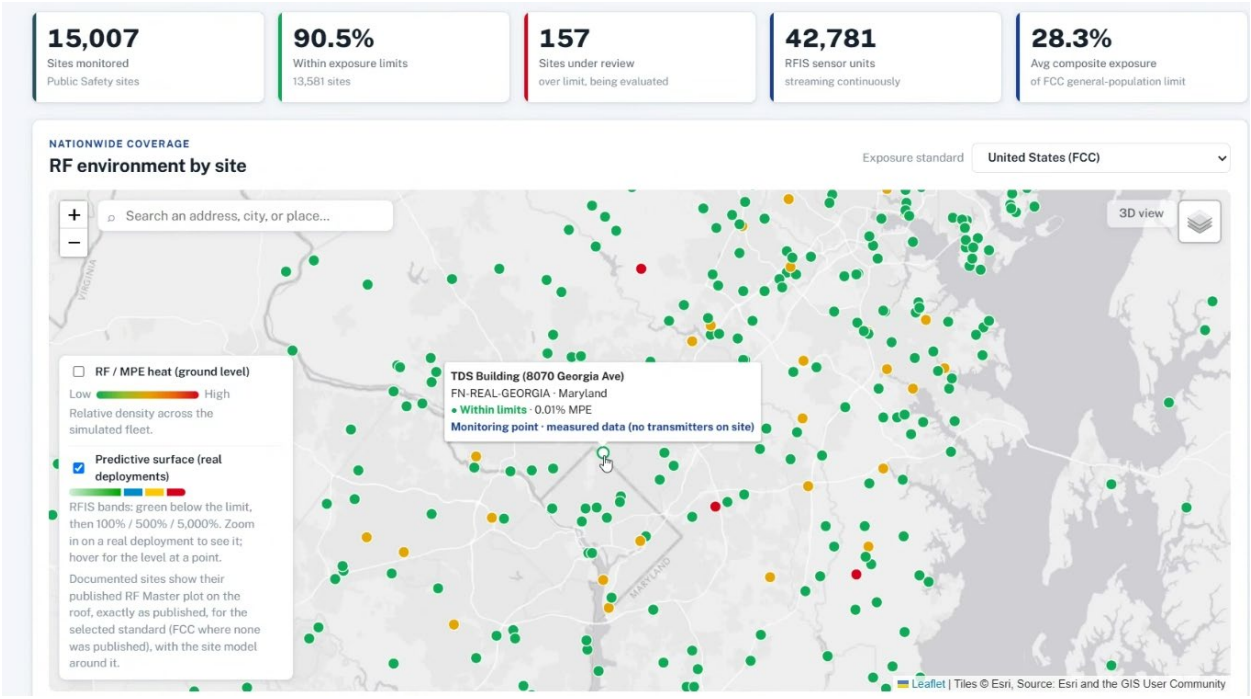
[2] In other words, these 15,000 sites are not actual, but simulations based on typical data. The demonstration uses approximately 15,000 hypothetical monitoring locations distributed across the United States, with an emphasis on populated urban and suburban communities. The geographic distribution is intended to approximate an initial deployment using FirstNet-associated cellular infrastructure as potential installation platforms. FirstNet was selected as a logical starting point because of its public-safety mission, existing nationwide infrastructure, and potential to support a geographically distributed monitoring network. The selection of FirstNet infrastructure does not imply that these locations present unusual RF exposure conditions or heightened compliance concerns**.** A fully developed national monitoring network could ultimately encompass substantially more locations, including cellular towers, building rooftops, utility poles, water tanks, and other suitable infrastructure.

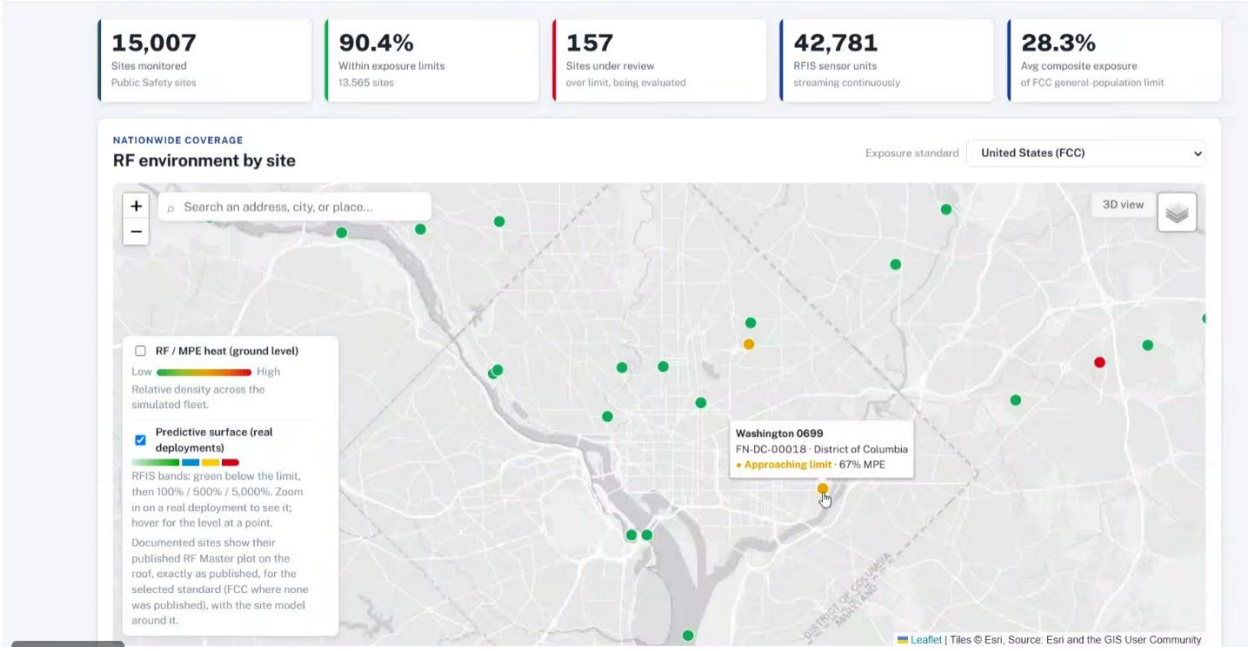
National Radiation Exposure Weather (REW)

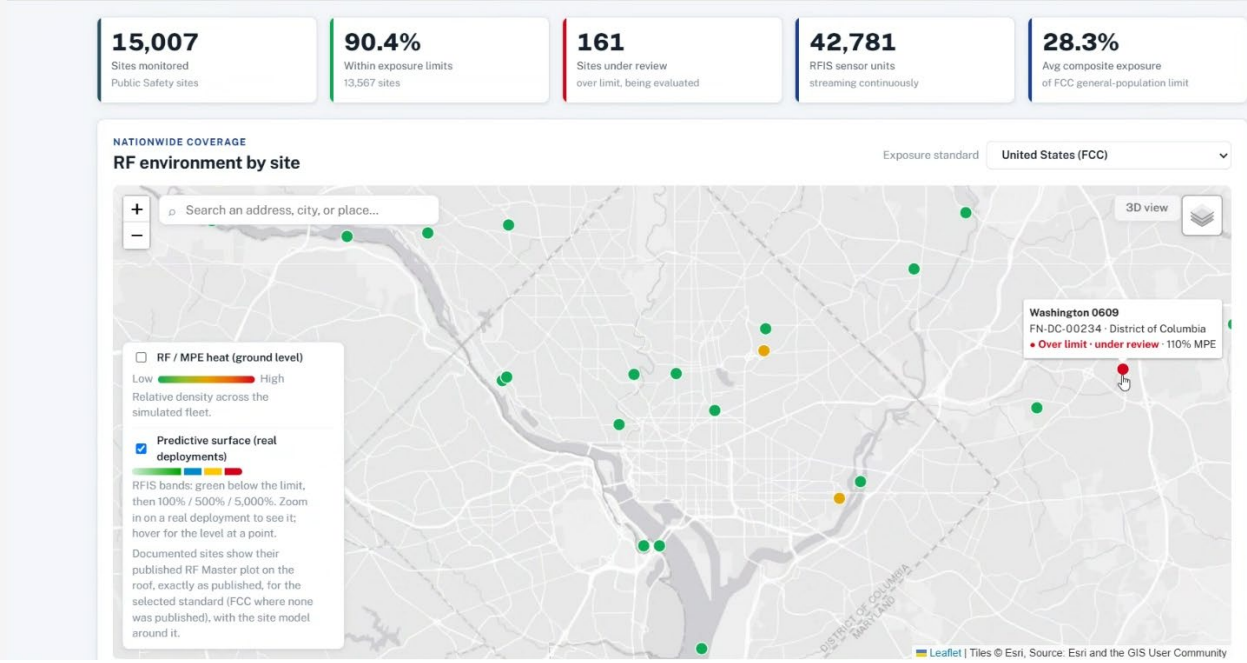
Continental United States – 15,000 Locations



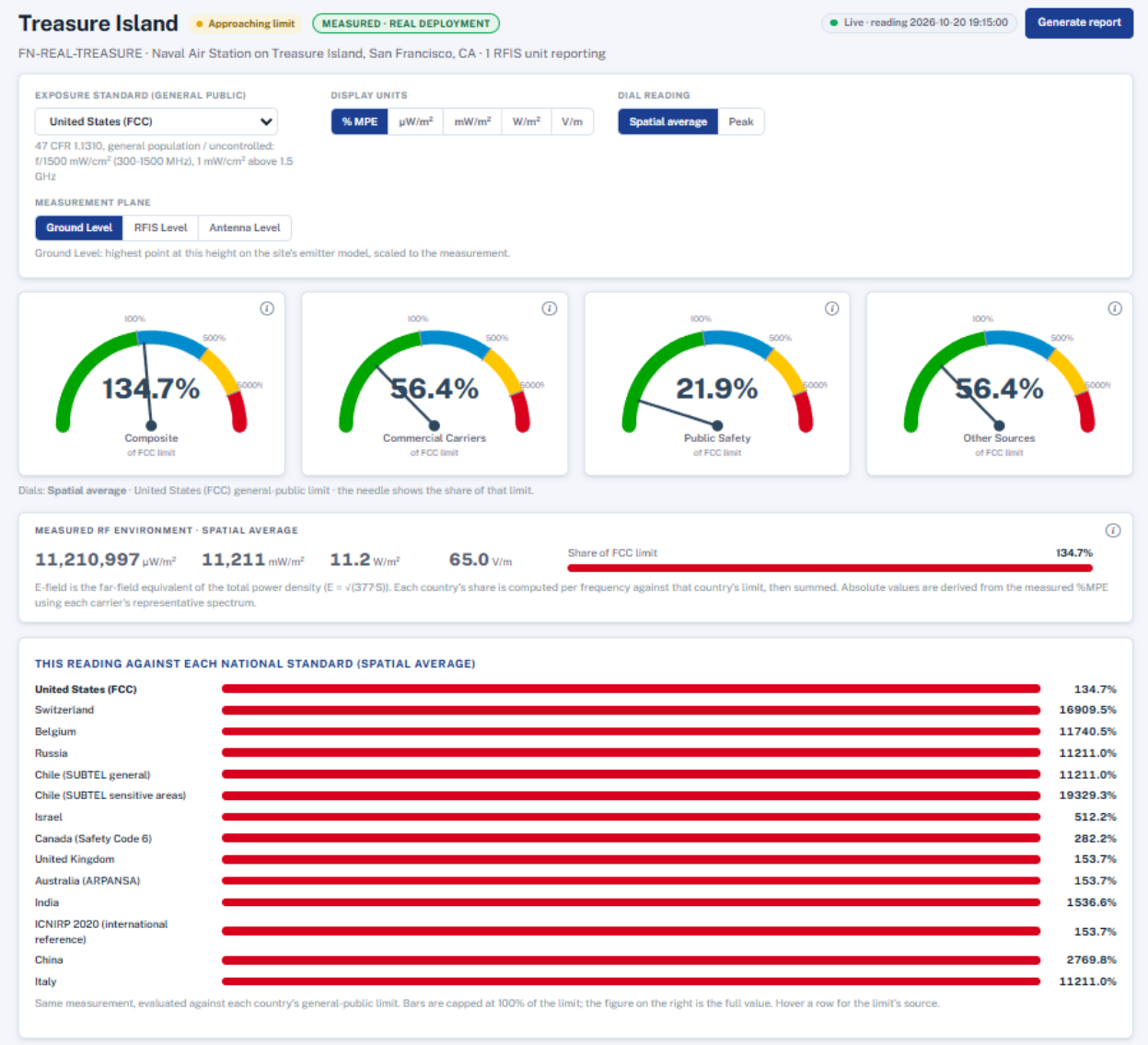



15,007
Sites monitored
Public Safety sites
90.5%
Within exposure limits
13,581 sites
157
Sites under review
over limit, being evaluated
42,781
RFIS sensor units
streaming continuously
28.3%
Avg composite exposure
of FCC general-population limit
NATIONWIDE COVERAGE
RF environment by site
Exposure standard
United States (FCC)
Search an address, city, or place...
3D view
RF / MPE heat (ground level)
Low
High
Relative density across the simulated fleet.
Predictive surface (real deployments)
RFIS bands: green below the limit, then 100% / 500% / 5,000%. Zoom in on a real deployment to see it; hover for the level at a point.
Documented sites show their published RF Master plot on the roof, exactly as published, for the selected standard (FCC where none was published), with the site model around it.
TDS Building (8070 Georgia Ave)
FN-REAL-GEORGIA · Maryland
Within limits · 0.01% MPE
Monitoring point · measured data (no transmitters on site)
VIRGINIA
MARYLAND
Leaflet | Tiles © Esri, Source: Esri and the GIS User Community


15,007
Sites monitored
Public Safety sites
90.4%
Within exposure limits
13,565 sites
157
Sites under review
over limit, being evaluated
42,781
RFIS sensor units
streaming continuously
28.3%
Avg composite exposure
of FCC general-population limit
NATIONWIDE COVERAGE
RF environment by site
Exposure standard
United States (FCC)
Search an address, city, or place...
3D view
RF / MPE heat (ground level)
Low
High
Relative density across the simulated fleet.
Predictive surface (real deployments)
RFIS bands: green below the limit, then 100% / 500% / 5,000%. Zoom in on a real deployment to see it; hover for the level at a point.
Documented sites show their published RF Master plot on the roof, exactly as published, for the selected standard (FCC where none was published), with the site model around it.
Washington 0699
FN-DC-00018 · District of Columbia
Approaching limit · 67% MPE
DISTRICT OF COLUMBIA
MARYLAND
Leaflet | Tiles © Esri, Source: Esri and the GIS User Community


15,007
Sites monitored
Public Safety sites
90.4%
Within exposure limits
13,567 sites
161
Sites under review
over limit, being evaluated
42,781
RFIS sensor units
streaming continuously
28.3%
Avg composite exposure
of FCC general-population limit
NATIONWIDE COVERAGE
RF environment by site
Exposure standard
United States (FCC)
Search an address, city, or place...
3D view
Washington 0609
FN-DC-00234 · District of Columbia
• Over limit · under review · 110% MPE
RF / MPE heat (ground level)
Low
High
Relative density across the simulated fleet.
Predictive surface (real deployments)
RFIS bands: green below the limit, then 100% / 500% / 5,000%. Zoom in on a real deployment to see it; hover for the level at a point.
Documented sites show their published RF Master plot on the roof, exactly as published, for the selected standard (FCC where none was published), with the site model around it.
DISTRICT OF COLUMBIA
MARYLAND
Leaflet | Tiles © Esri, Source: Esri and the GIS User Community

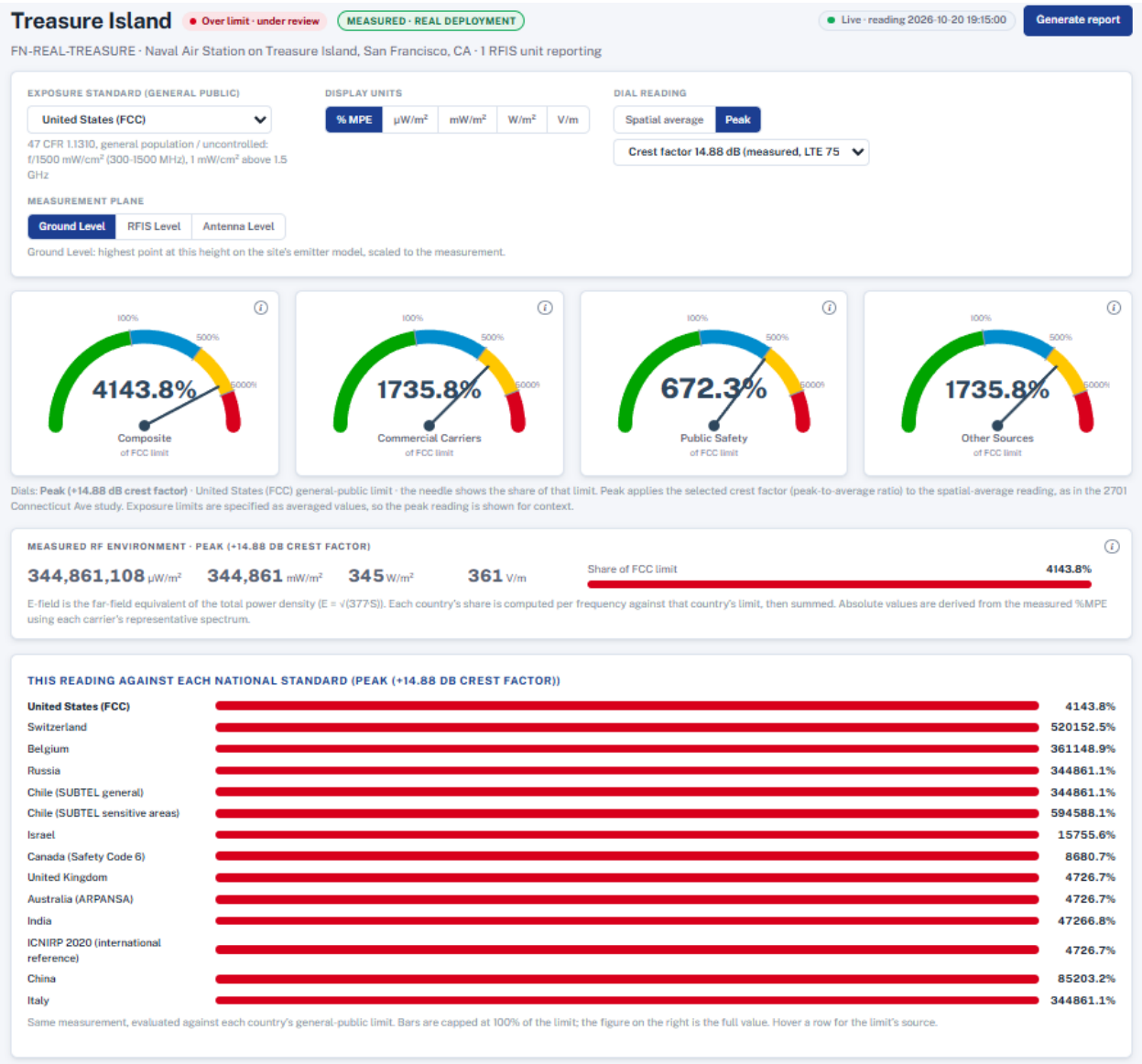
Treasure Island – San Francisco, California – Average Radiation Exposure Weather (REW) Measurements Against FCC (U.S.) Limits and Other Countries



Average ground level readings against FCC (U.S.) limits (gauges) and other countries' limits (bar chart).

This average reading reveals levels at 134.7% of the United States (FCC) Human RF Exposure Limit. This average reading is measured at 16,909.5% of Switzerland's limit. It also is measured to exceed all the other countries' wireless exposure limits as follows: Belgium (11,740.5%), Russia (11,211.0%), Chile (SUBTEL General) (11,211.0%), Chile (SUBTEL sensitive areas) (19,329.3%), Israel (512.2%), Canada (282.2%), the United Kingdom (153.7%), Australia (153.7%), India (1,536.6%), ICNIRP 2020 (153.7%), China (2796.8%), and Italy (11,211.0%).

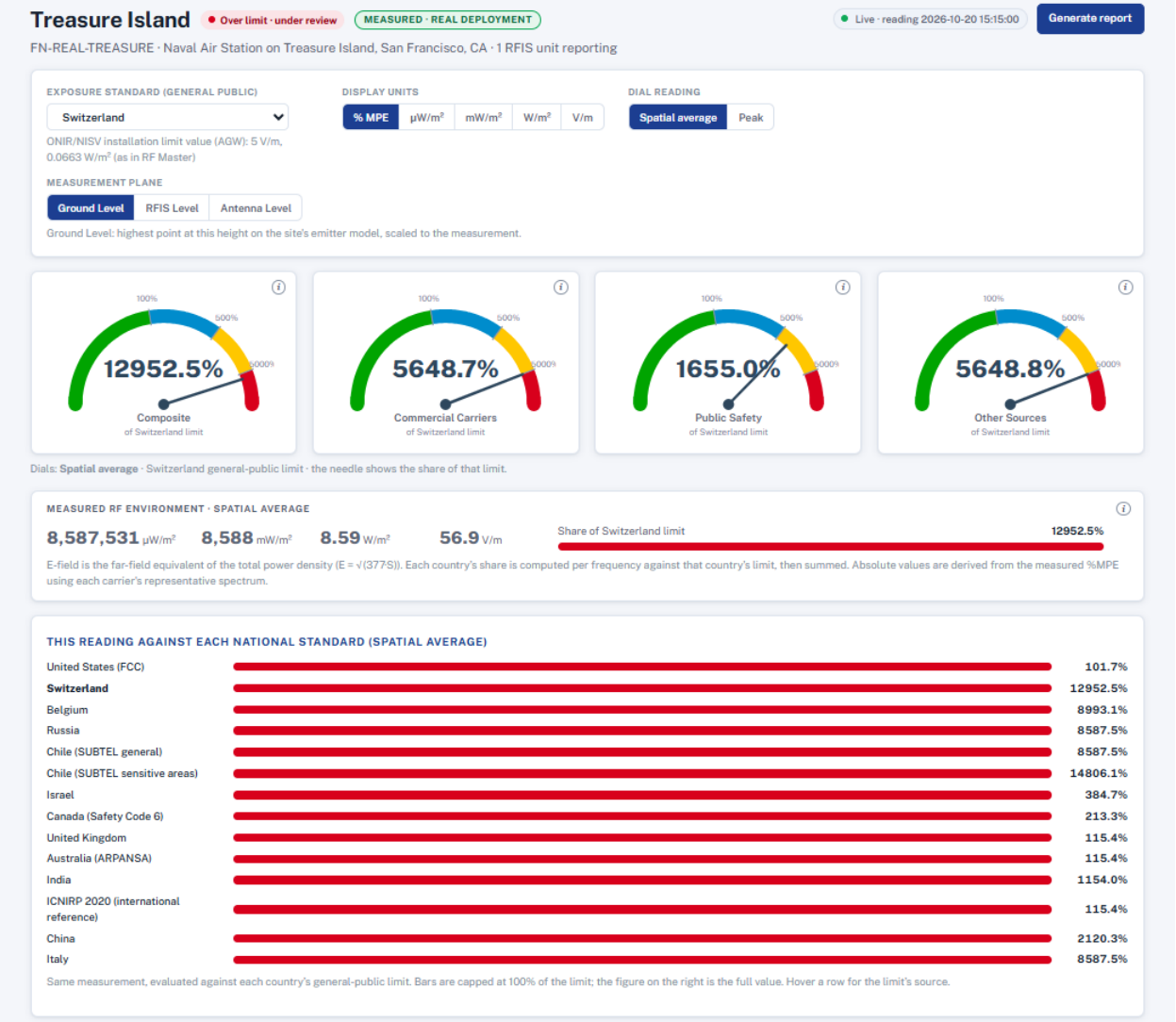
Treasure Island – San Francisco, California – Peak Radiation Exposure Weather (REW) Measurements Against FCC (U.S.) Limits and Other Countries



Peak ground level readings against FCC (U.S.) limits (gauges) and other countries' limits (bar chart).

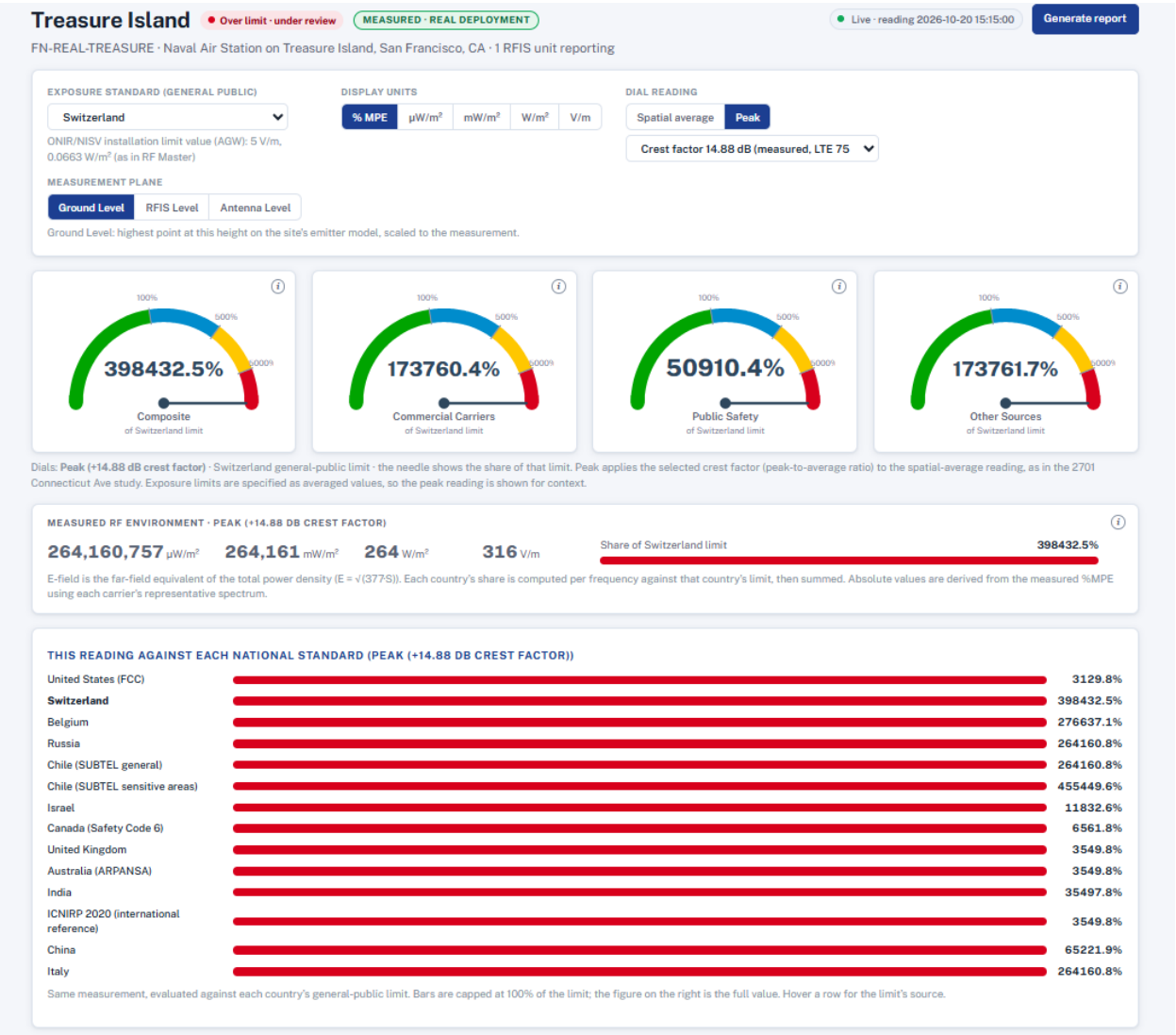
The peak reading reveals levels at 4,143.8% of the United States (FCC) Human RF Exposure Limit. This peak reading is measured to exceed all the other countries' wireless radiation exposure limits as follows: Belgium (361,148.9%), Russia (344,861.1%), Chile (SUBTEL General) (344,861.1%), Chile (SUBTEL sensitive areas) (594,588.1%), Israel (15,755.6%), Canada (8,680.7%), the United Kingdom (4,726.7%), Australia (4,726.7%), India (47,266.8%), ICNIRP 2020 (4,726.7%), China (85,203.2%), and Italy (344,861.1%).

Treasure Island – San Francisco, California – Average Radiation Exposure Weather (REW) Measurements Against Swiss Limits and Other Countries



Average ground level readings against Swiss limits (gauges) and other countries' limits (bar chart).

Treasure Island – San Francisco, California – Peak Radiation Exposure Weather (REW) Measurements Against Swiss Limits and Other Countries



Peak ground level readings against Swiss limits (gauges) and other countries' limits (bar chart).



Average ground level readings against U.S. (FCC) limits. Area in blue exceeds the FCC limit for the general public.



Peak ground level readings against U.S. (FCC) limits. Area in yellow exceeds the FCC occupational exposure limit.

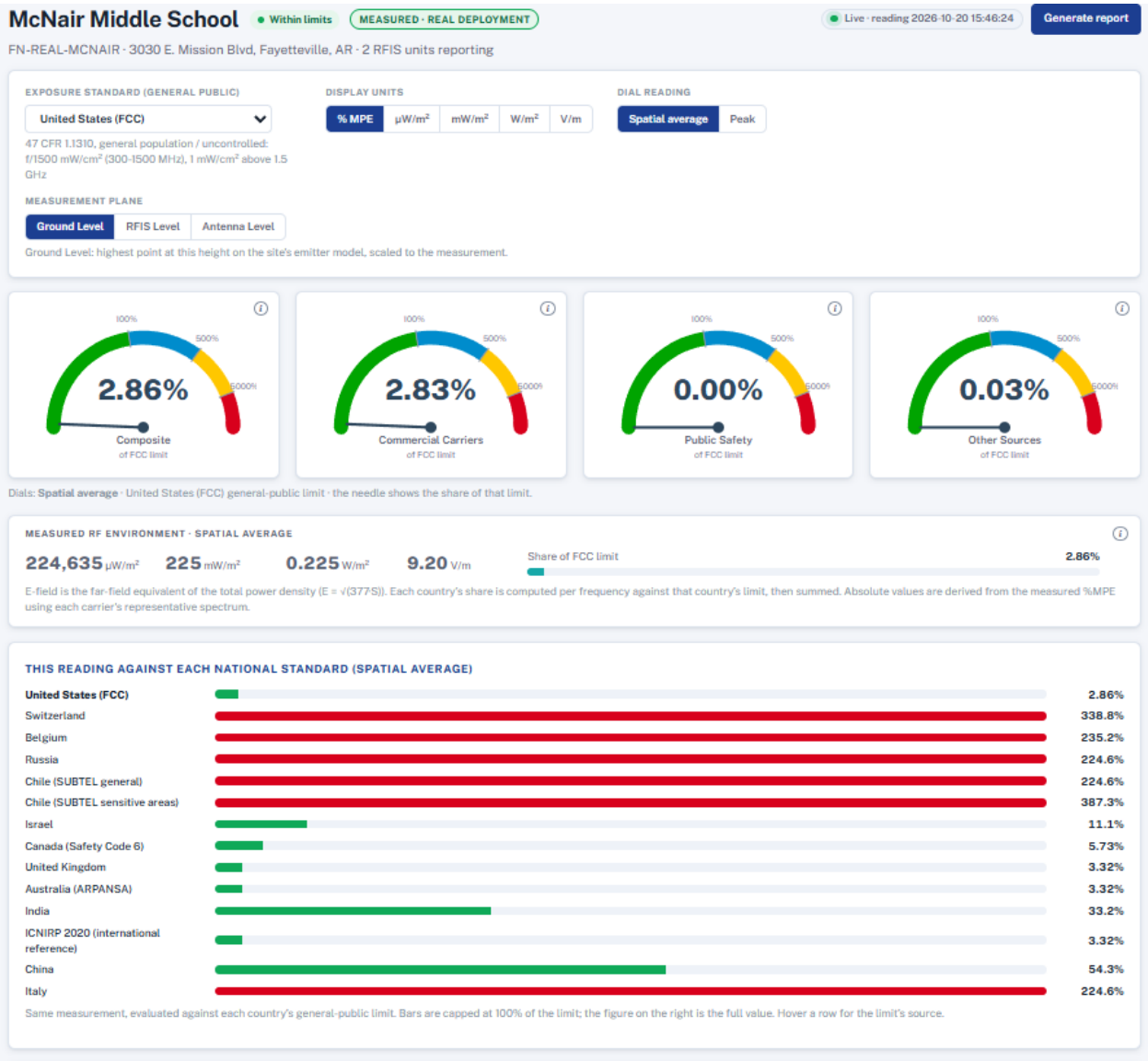


Average ground level readings against Swiss limits. Area in red exceeds the Swiss limit by over 50 times.



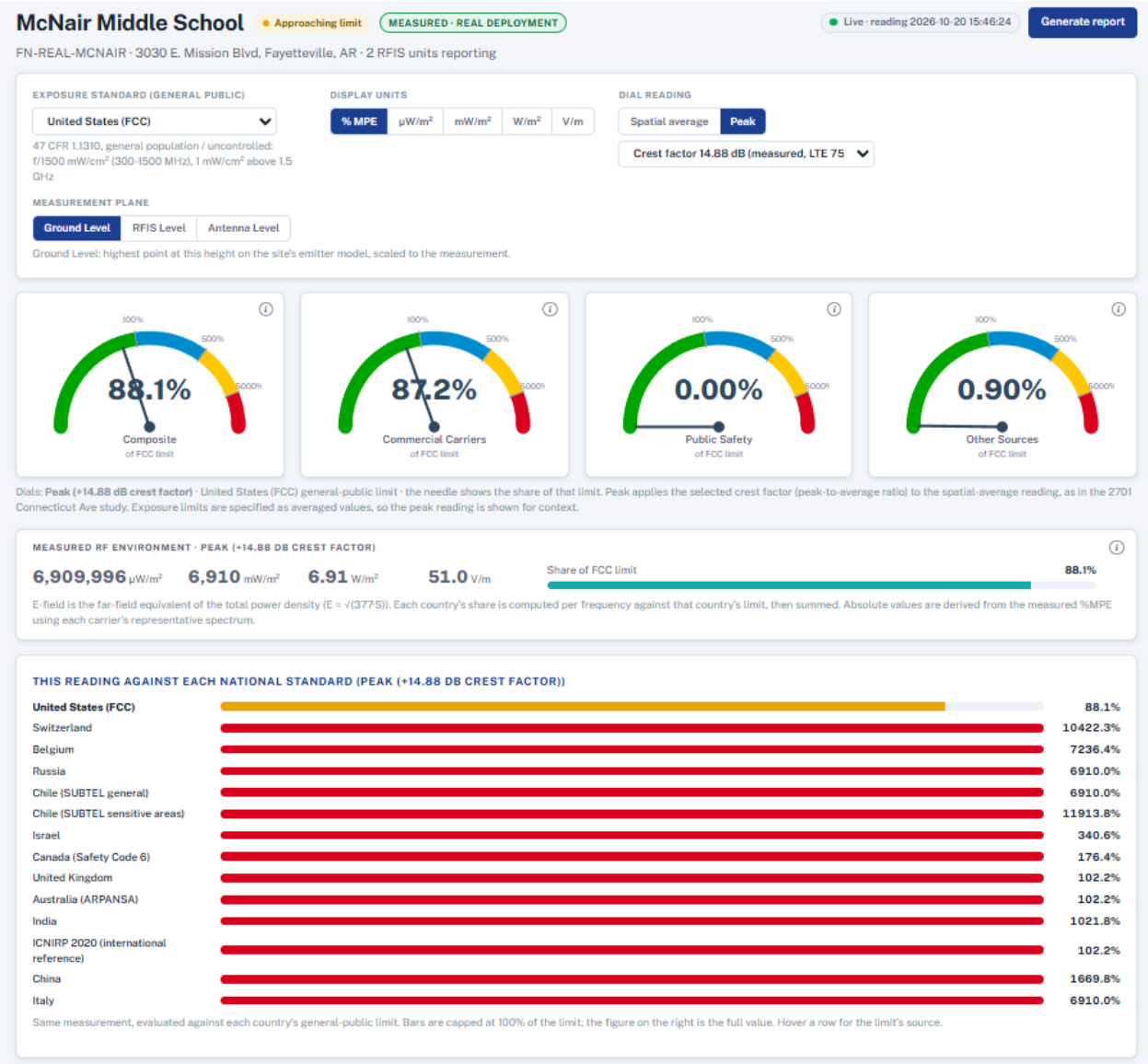
Peak ground level readings against Swiss limits. Area in red exceeds the Swiss limit by over 50 times.

McNair Middle School – Fayetteville, Arkansas– Average Radiation Exposure Weather (REW) Measurements Against FCC (U.S.) Limits and Other Countries



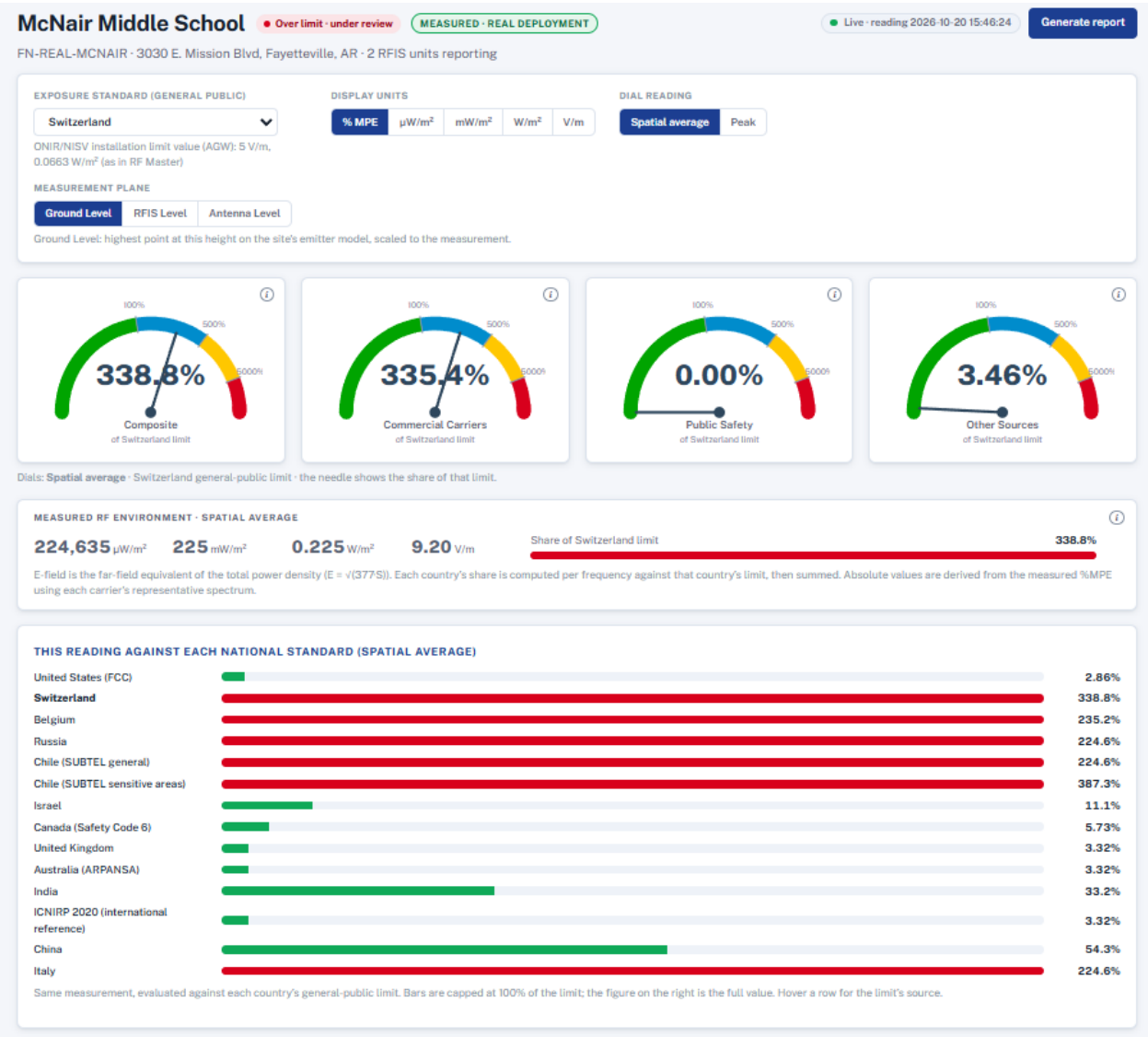
Average ground level readings against FCC (U.S.) limits (gauges) and other countries' limits (bar chart).

McNair Middle School – Fayetteville, Arkansas– Peak Radiation Exposure Weather (REW) Measurements Against FCC (U.S.) Limits and Other Countries



Peak ground level readings against FCC (U.S.) limits (gauges) and other countries' limits (bar chart).

McNair Middle School – Fayetteville, Arkansas– Average Radiation Exposure Weather (REW) Measurements Against Swiss Limits and Other Countries

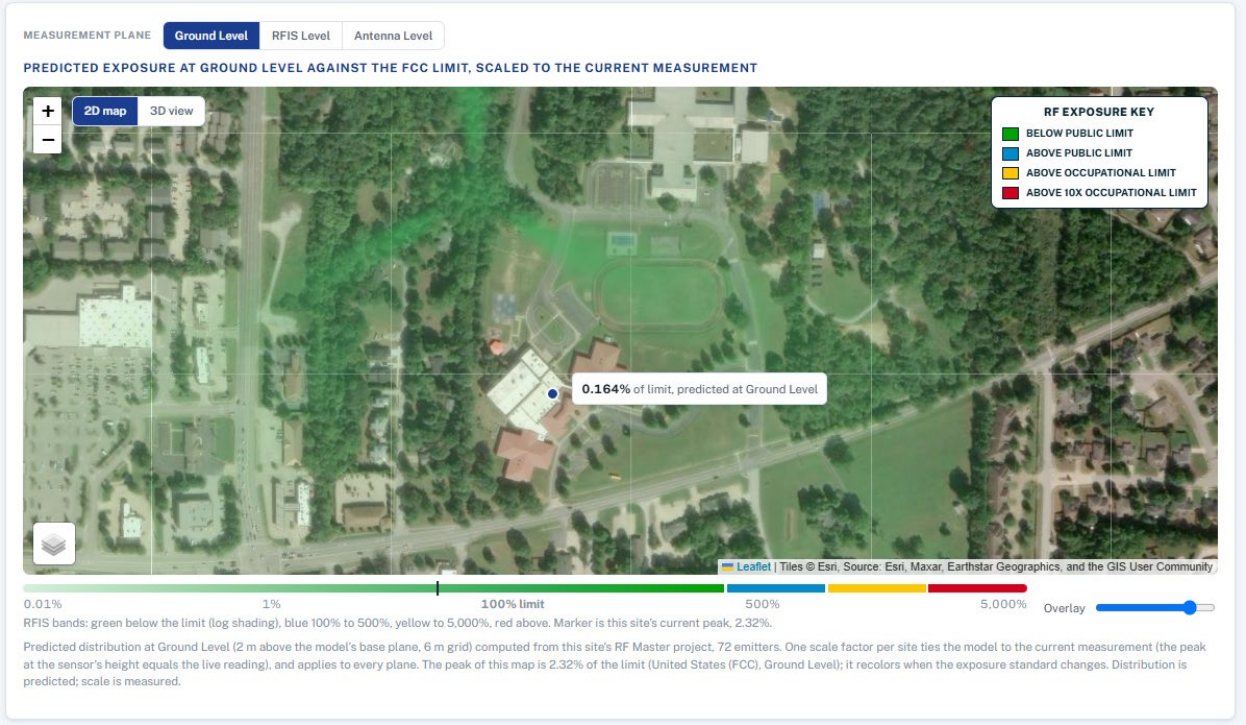


Average ground level readings against Swiss limits (gauges) and other countries' limits (bar chart).

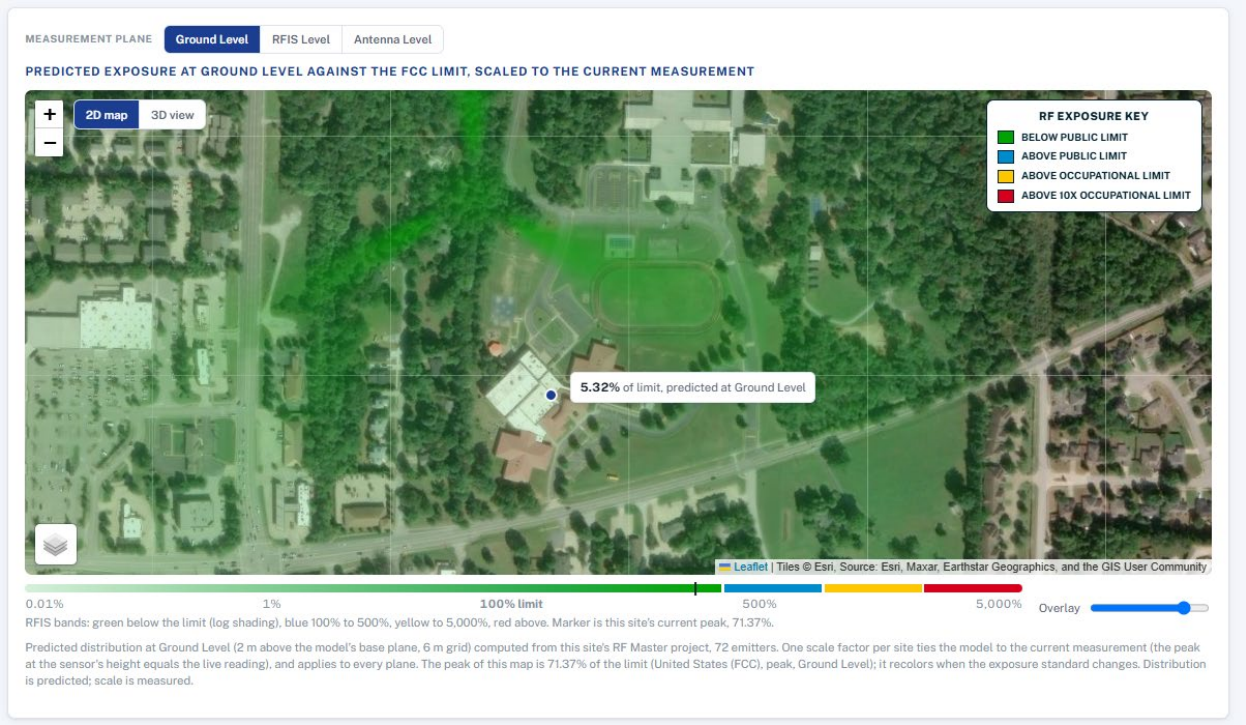
McNair Middle School – Fayetteville, Arkansas– Peak Radiation Exposure Weather (REW) Measurements Against Swiss Limits and Other Countries



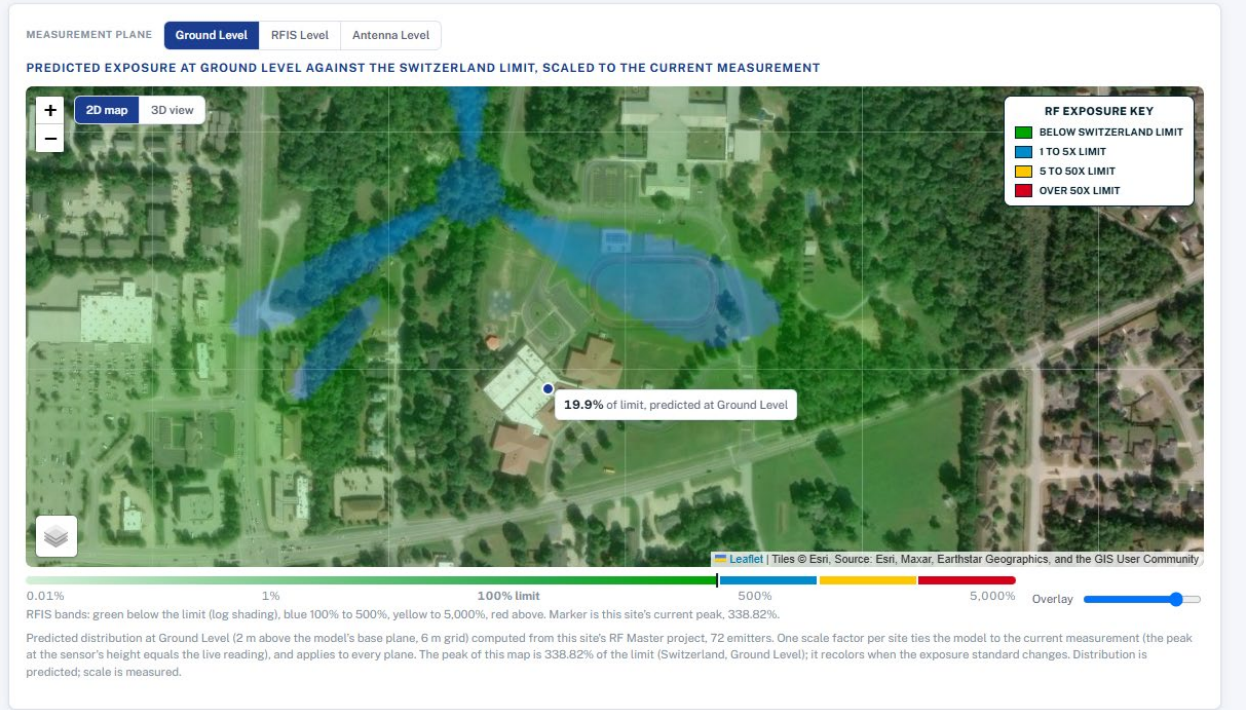
Peak ground level readings against Swiss limits (gauges) and other countries' limits (bar chart).



Average ground level readings at school building against U.S. (FCC) limits. Areas in green are below the FCC's limits for the general public.



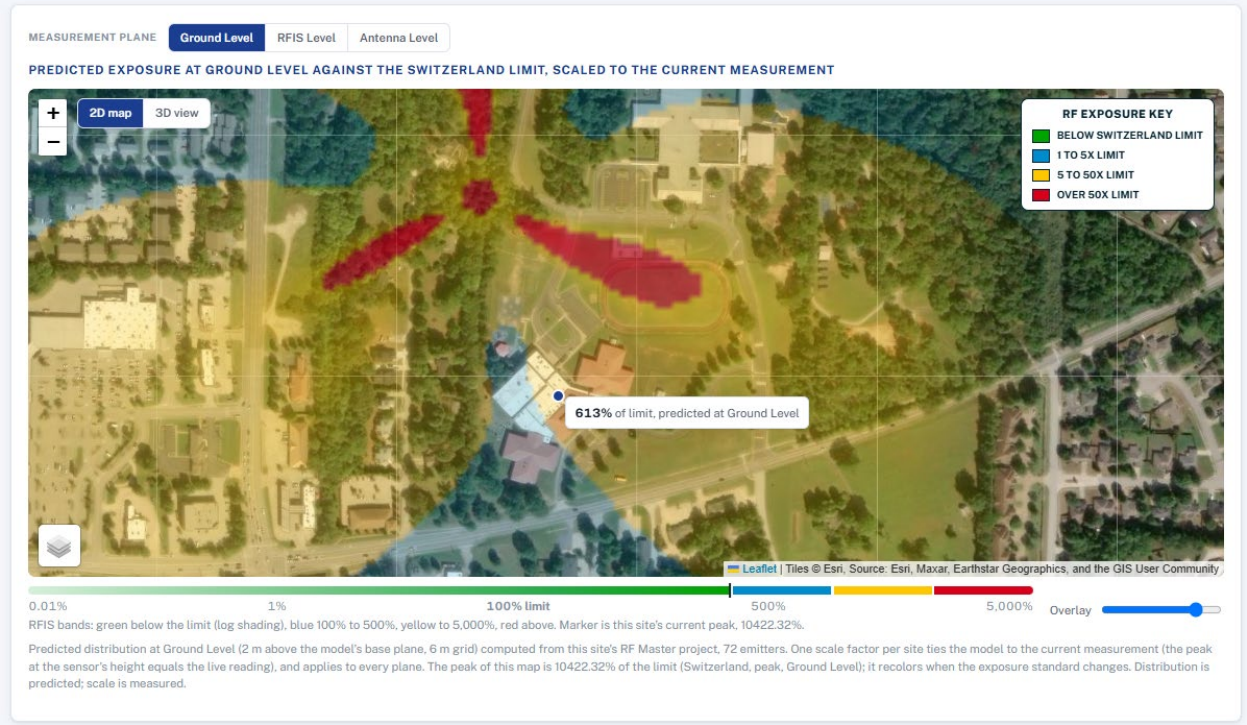
Peak ground level readings at school building against U.S. (FCC) limits. Areas in green are below the FCC's limits for the general public.



Average ground level readings at school building against Swiss limits. Areas in blue exceed the Swiss limit by 1 to 5 times.



Average ground level readings at track area against Swiss limits. Areas in blue exceed the Swiss limit by 1 to 5 times.



Peak ground level readings at school building against Swiss limits. Areas in red exceed the Swiss limit by over 50 times.



Peak ground level readings at track area against Swiss limits. Areas in red exceed the Swiss limit by over 50 times.