

Radio Frequency Safety Survey Report Predictive (RFSSRP)

Jurisdictional Report



Site Name:	BETHANY CREST
FA#	10576578
USID:	313419
Site ID:	SIOR002945 / PD31
Address:	13937 NW SPRING VILLE ROAD, PORTLAND, OR 97229
County:	WASHINGTON
Latitude:	45.57009
Longitude:	-122.82541
Structure Type:	STEALTH POLE-EXTRNL ARRAY
Property Owner:	ROBERT L. ZAHLER & GAYLA G. ZAHLER TRUST
IWM Job#:	WSWOR0040926
RFDS Technology:	LTE Only 1C
Desktop Modeler:	IXUS VERSION 4.12(0)

Report Information

Report Writer: Karan Vashisht

Report Generated Date: 02-04-2025

Compliance Statement

AT&T Mobility Compliance Statement: Based on the information collected, AT&T Mobility will be compliant when the remediation recommended in [Section 2.0](#) or appropriate remediation determined by AT&T is implemented



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1.0 Introduction

MobileComm Professionals, Inc. has been contracted by AT&T Mobility LLC to produce a theoretical assessment of the potential radio frequency emissions at the proposed AT&T “STEALTH POLE-EXTRNL ARRAY” site. FCC OET Bulletin 65 – Edition 97-01 recommends that theoretical calculations should be done to yield a worst-case scenario. This theoretical analysis will provide a worst-case assessment of potential emissions and will assume all transmitters are operating at highest capacity and power. This will provide AT&T with a guideline of how to proceed with mitigating the site to ensure the site will be compliant with FCC regulations at any instance.

For this MPE theoretical analysis, MobileComm considered the accessible areas of site to determine approximate field strength levels and to identify any areas with higher levels exceeding FCC MPE limits and then determined spatially averaged field levels in areas with highest fields.

MobileComm has utilized computer generated model(s) in this Site Compliance Report. The modeling software that MobileComm used to create this report is IXUS.

General Model Assumptions

In this Site Compliance Report, it is assumed that all antennas are operating at full power at all times. MobileComm has further assumed 75% duty cycle of maximum radiated power for all LTE & 5G carriers. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account.

MobileComm obtained information used in this Site Compliance Report from AT&T (or approved vendors) which is considered reliable and believes them to be true and correct.

Due to the complexity of some wireless sites, MobileComm performed this analysis and created this report utilizing best industry practices and due diligence.

2.0 Compliance Measures

The compliance determination is based on theoretical modeling, RF signage placement recommendations and the level of restricted access to the antennas at the site. At the time of our analysis, AT&T will be compliant with the FCC rules and regulations, as described in OET Bulletin 65 upon implementation of below remediation(s).

Recommendations

AT&T Mobility Alpha Sector:

- No actions required.

AT&T Mobility Beta Sector:

- No actions required.

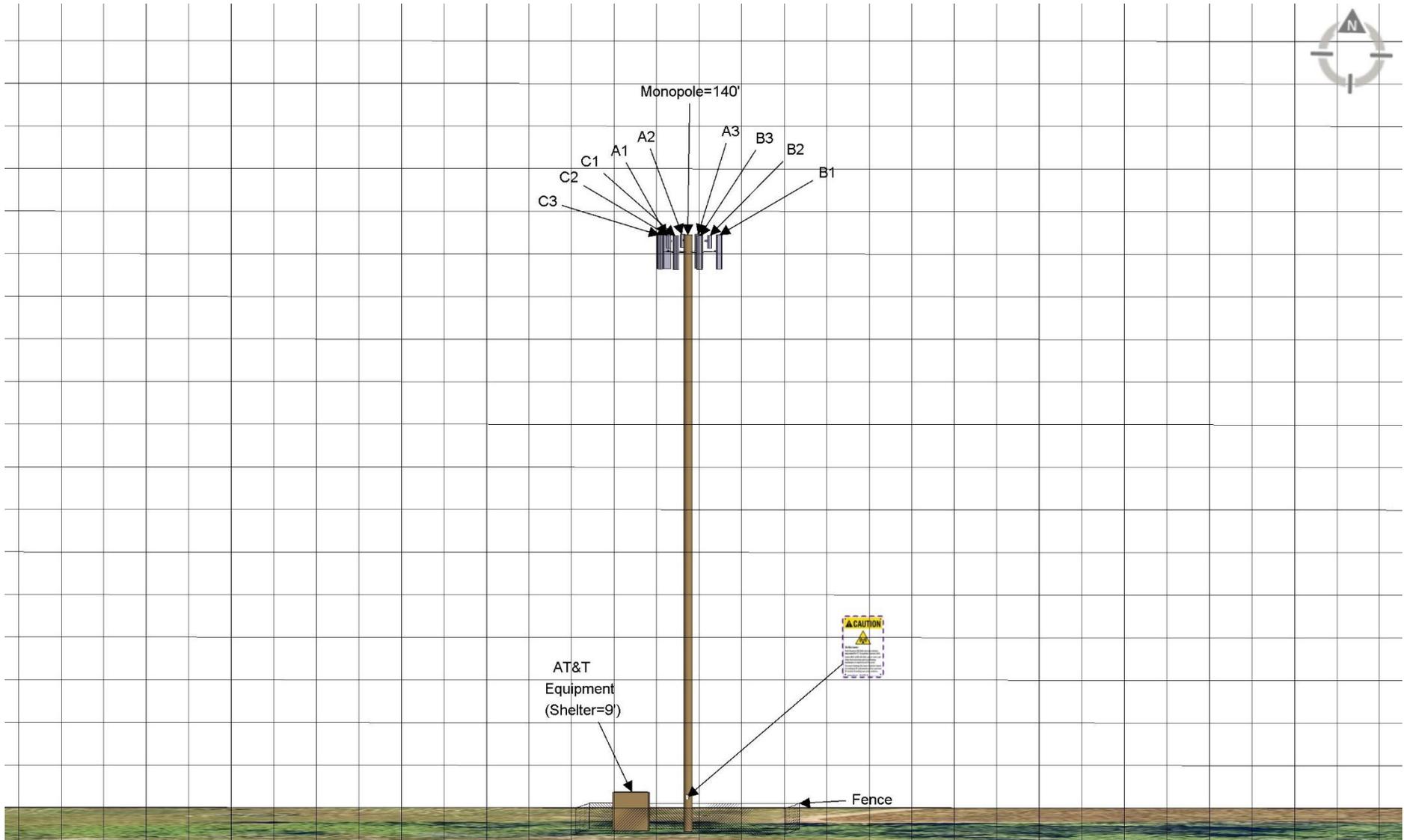
AT&T Mobility Gamma Sector:

- No actions required.

Monopole:

- One Caution 2B Sign to be posted on the Monopole at the climbing access, facing outwards so approaching people can see. (1 Total Sign)

3.0 Site Scale Map



Proposed	Proposed Signage												Grid Scale = 10 ft	
Barrier	Safety Instructions	Notice 2	Notice 2D Adjacent	Caution 2	Caution 2A	Caution 2B	Caution 2C	Caution 2D Adjacent	Caution 7"x7"	Warning 1B	Warning 2A	RF Exposure Map		Lock
Posts														

4.0 Summary

All calculations performed for this analysis yielded results that were within the allowable limits for exposure to RF Emissions. Based on theoretical modeling, and upon implementation of recommendations in [Section 2](#), there will be no modeled exposures on any accessible walking/working surface related to AT&T's equipment in the area that exceed the FCC's Occupational or General Population exposure limits at this site.

The anticipated maximum theoretical RF-EME at Ground level will be **1.16%** of the FCC's General Population. This was determined through calculations along a radial from each sector taking full power values into account as well as actual vertical plane antenna gain values per the manufacturer-supplied specifications for gain. Based on worst-case theoretical modeling, there are no areas at ground level related to the proposed antennas that exceed the FCC's occupational or General Population exposure limits at this site.

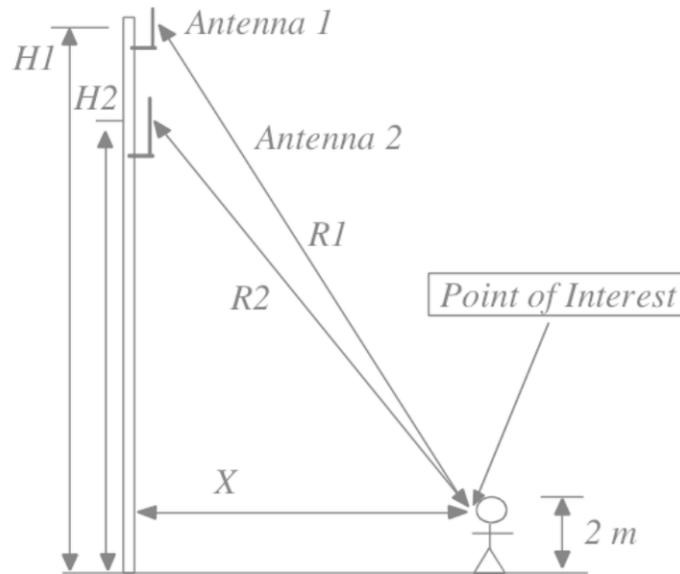
A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

Modeling indicates that there will be no accessible areas on the walking/working surfaces in front of the AT&T antennas that may exceed the FCC standards for general population and/or occupational exposure after implementation of mitigation measures. To reduce the risk of exposure and/or injury, MobileComm recommends that access to the areas associated with the active antenna installation or mitigation measures to be restricted and secured wherever possible.

5.0 FCC Rules and Regulations and Guidelines from OET 65

When considering the contributions to field strength or power density from other RF sources, care should be taken to ensure that such variables as reflection and re-radiation are considered. In cases involving very complex sites predictions of RF fields may not be possible, and a measurement survey may be necessary. The process for determining compliance for other situations can be similarly accomplished using the techniques described in this section and in Supplement A to this bulletin that deals with radio and television broadcast operations. However, as mentioned above, at very complex sites measurements may be necessary.

In the simple example shown in the below diagram, it is desired to determine the power density at a given location X meters from the base of a tower on which are mounted two antennas. One antenna is a CMRS antenna with several channels, and the other is an FM broadcast antenna. The system parameters that must be known are the total ERP for each antenna and the operating frequencies (to determine which MPE limits apply). The heights above ground level for each antenna, $H1$ and $H2$, must be known in order to calculate the distances, $R1$ and $R2$, from the antennas to the point of interest.



This summarizes the policies, guidelines and requirements that were adopted by the FCC on August 1, 1996, amending Part 1 of Title 47 of the Code of Federal Regulations, and further amended by action of the Commission on August 25, 1997 (see 47 CFR Sections 1.1307(b), 1.1310, 2.1091 and 2.1093, as amended from FCC "OET Bulletin 65"). Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA), as described in 47 CFR Section 1.1311, if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency (RF) electromagnetic fields in excess of these limits. For exact language, see the relevant FCC rule sections.

The FCC-adopted limits for Maximum Permissible Exposure (MPE) are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3. Copyright NCRP, 1986, Bethesda, Maryland 20814. In the frequency range from 100 MHz to 1500 MHz, exposure limits for field strength and power density are also generally based on the MPE limits found in Section 4.1 of, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017, and approved for use as an American National Standard by the American National Standards Institute (ANSI). The exposure guidelines are based on thresholds for known adverse effects and they incorporate a significant margin of safety. The federal health and safety agencies such as: the Environmental Protection Agency ("EPA"), the Food and Drug Administration ("FDA"), the National Institute on Occupational Safety and Health ("NIOSH") and the Occupational Safety and Health Administration ("OSHA") have also been actively involved in monitoring and investigating issues related to RF exposure.

FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Population or "Uncontrolled environment". The General Population limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to accessible areas where workers or the General Population may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

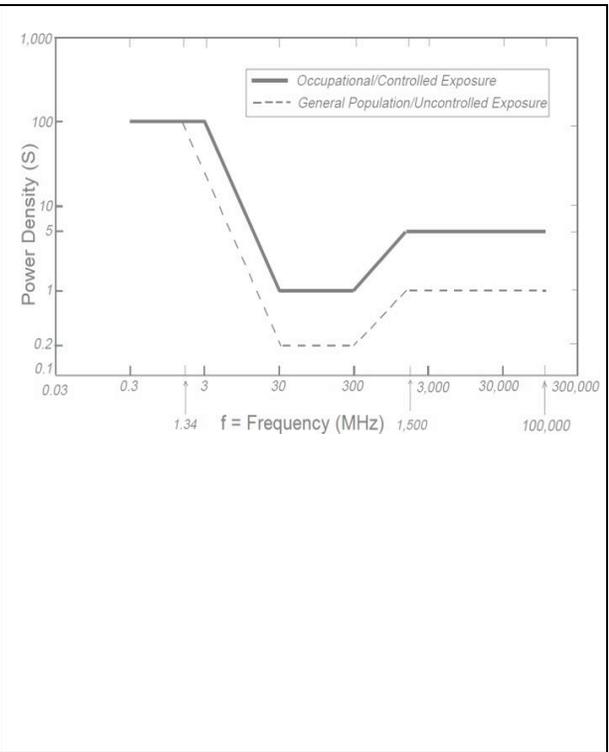
An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Population limits.

The formulas used in IXUS for calculating Power density is based on FCC "OET Bulletin 65", Section 2: PREDICTION METHODS, August 1997, Edition 97-01. Power density is converted to Maximum Permissible Exposure Limits (MPE Limits) based on Limits of General population/Uncontrolled Exposure and Limits of Occupational/Controlled Exposure presented in the following table generated from Appendix A of "OET Bulletin 65".

Limits for Occupational/Controlled Exposure		
Frequency Range (MHz)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² , or S (minutes)
300-1500	f/300	6
1500-100,000	5	6

Limits for General Population/Uncontrolled Exposure		
Frequency Range (MHz)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² , or S (minutes)
300-1500	f/1500	30
1500-100,000	1	30



6.0 Safety Recommendations

Occupational Safety and Health Administration (OSHA) Requirements

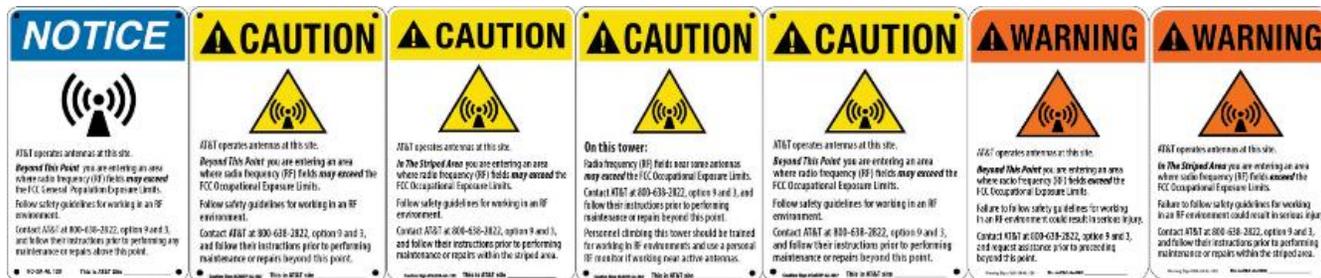
OSHA requires that those in the Occupational classification must complete training in RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
<ul style="list-style-type: none"> Utilization of good equipment Enact control of hazard areas Limit exposures Employ medical surveillance and accident response 	<ul style="list-style-type: none"> Employ Lockout/Tag out Utilize personal alarms & protective clothing Prevent access to hazardous locations Develop or operate an administrative control program

RF Signage and Barriers

All RF signs should be obeyed by at all times.

Post the appropriate NOTICE, CAUTION & WARNING sign at the main site access point(s) and other locations as required. The signs below are examples of signs meeting FCC guidelines



If there are workers in an area with a sign that they do not understand, they can call the NOC Number at 800-638-2822 for guidance.

All persons (arborist, landscapers, construction/utility workers, etc.) that are accessing adjacent elevated surfaces that exceed the General Public (GP) limits MPE must be made aware of these potential exceedances and their fields, where applicable.

7.0 FCC Limits

Occupational limits

Apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

General population limits

Apply in situations in which the General Population may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Controlled Environment

Applies to environments that are restricted or “controlled” in order to prevent access from members of the General Population classification.

Uncontrolled Environment

Applies to environments that are unrestricted or “uncontrolled” that allow access from members of the General Population classification.

Contribution to Co-Located areas

Any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Generic Values

The use of “Unknown” for an operator means the information with regard to the carrier, their FCC license and / or antenna information was not available. Generic values are used as estimation for Effective Radiated Power (ERP) and antenna characteristics for unknown antennas.

8.0 Certification

This report has been prepared by or under the direction of the following Registered Professional Engineer:

I, Michael McGuire P.E. State: Oregon on date: 2/10/2025 hereby certify that:

I am registered as a Professional Engineer with License number: 84108 and that I am thoroughly familiar with the Regulations of the Federal Communications Commission (FCC), both in general and specifically as they apply to FCC guidelines for human exposure to Radio-frequency electromagnetic radiation and that EME theoretical analysis for site identified as 10576578 located at 13937 NW SPRING VILLE ROAD, PORTLAND, OR 97229 has been performed on 02-04-2025 in order to determine where there might be electromagnetic energy that is in excess of both the Controlled Environment and Uncontrolled Environment levels; and that I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge.



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