

NEW NCE FM STATION CH 211 C 35 kW OMNI 932.4 M HAAT HOLUALOA, HI
ADVANCED PUBLIC RADIO FACILITY ID 767585
ENGINEERING, ENVIRONMENTAL & APPLICATION TECHNICAL ANALYSIS
NOVEMBER 2021

This engineering analysis has been prepared on behalf of Advanced Public Radio, Inc. ("APR") applicant for a new NCE FM station to operate on CH 211C at Holualoa, Hawaii. This application proposes installation of a new FM antenna on an existing 200 foot (61 Meter) tower located in North Kona CCD and owned by principals in APR. An Omnidirectional antenna will be proposed. The maximum ERP for Class C operation at an HAAT is of 932.4 M HAAT is 35 kilowatts and that is the ERP proposed in the application. FCC online HAAT and ERP calculator tools have been employed.

The applicant has utilized FCC TOWAIR to evaluate the tower location and height. The tool reports that there are no airports within an 8 kilometer radius.

Utilizing the FCC FM Model online calculator for an EPA type 1 antenna with 35,000 watts ERP H & V, 0.9 wave spacing, 8 bay antenna with a radiation enter 45.7 meters AGL on CH 211 gives a maximum calculated power density of 41.4 microwatts per centimeter squared which is 20.7 percent of the 200 microwatts public exposure guideline. Based on this analysis it is believed that the proposed facility follows OET-65 Public Exposure Guidelines. The applicant will reduce power or cease transmission as required to meet FCC OET-65 worker Guidelines.

Figure 1 attached depicts the proposed 60 dBu F(50,50) primary contour based on 72 evenly spaced radials using RadioSoft Comstudy high accuracy 3 second terrain data. All contour calculations in this application use the same terrain data and methodology. Population for this application is counted using 2010 U.S. Census data calculated at the centroid level.

Population in the proposed 60 dBu is 72,003 persons as noted on the map label. Land area has been determined using an area measuring tool in the Comstudy software known to be of high accuracy after many years of use. Land area enveloped by the proposed 60 dBu contour is 3,068 square kilometers.

Figure 2 attached depicts all NCE FM 60 dBu contours that cover the island of Hawaii. To keep the map clean and easily readable for evaluation purposes the contours for commercial FM stations have not been plotted on Figure 2 but have been evaluated and it has been determined that the facility does not provide a first aural service. However a first NCE service to 109 persons is provided and a second NCE service to 65,298 persons in an area of 2,531 square kilometers is provided. As per Commission Guidelines, these calculations were also done using 2010 US Census data calculated at the centroid level and included granted and unexpired construction permits for new unbuilt NCE FM stations.

A separate scanned copy of Figure 2 has been uploaded into the application with the first and second NCE areas shaded for ease of identification.

Figure 3 attached depicts the NCE allocation and the lack of impermissible caused or received contour overlap over land as specified in 73.509. FCC 74.525 compliance was determined by ascertaining that there are no full service CH 6 stations located within 196 kilometers of the proposed site location.

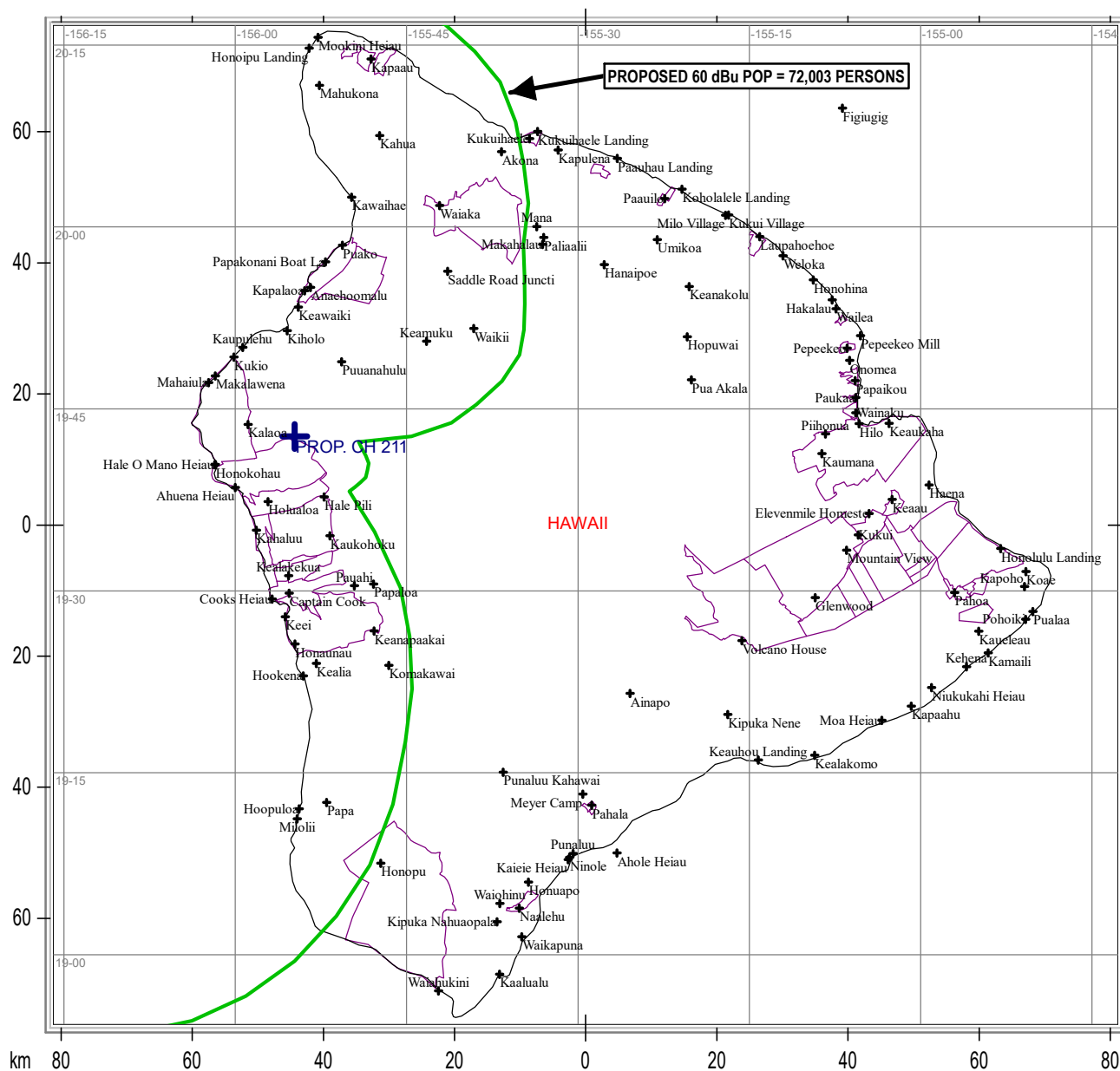
The foregoing was prepared on behalf of the Advanced Public Radio, Inc. by Clarence M. Beverage of Communications Technologies, Inc., Medford, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.



By _____

Clarence M. Beverage
for Communications Technologies, Inc.
Medford, New Jersey
November 5, 2021

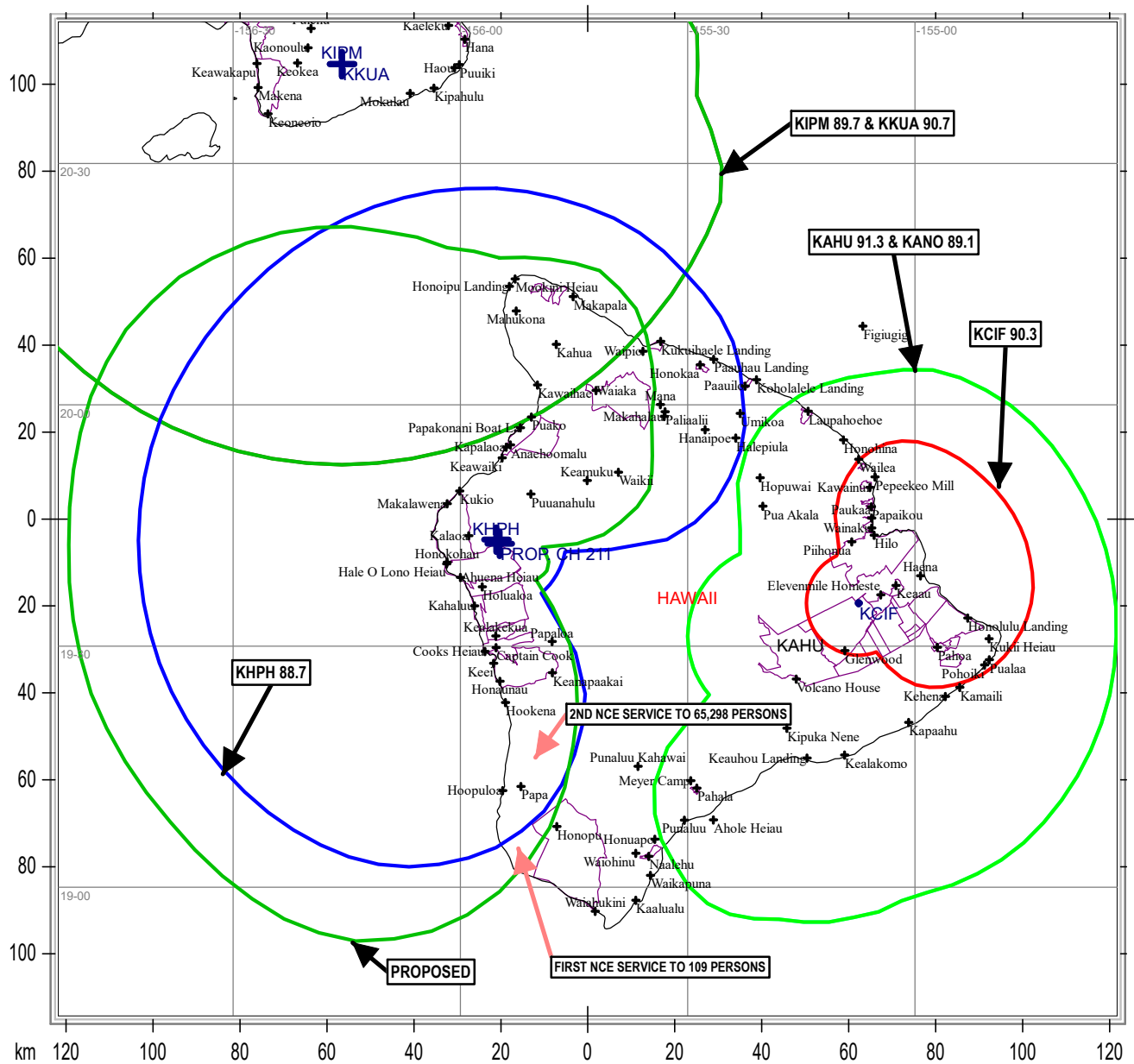
PROPOSED CH 211C 35 kW OMNI @ 932.4 M HAAT HOLUALOA, HAWAII



Communications Technologies, Inc. Medford, New Jersey

County Borders State Borders City Borders Lat/Lon Grid

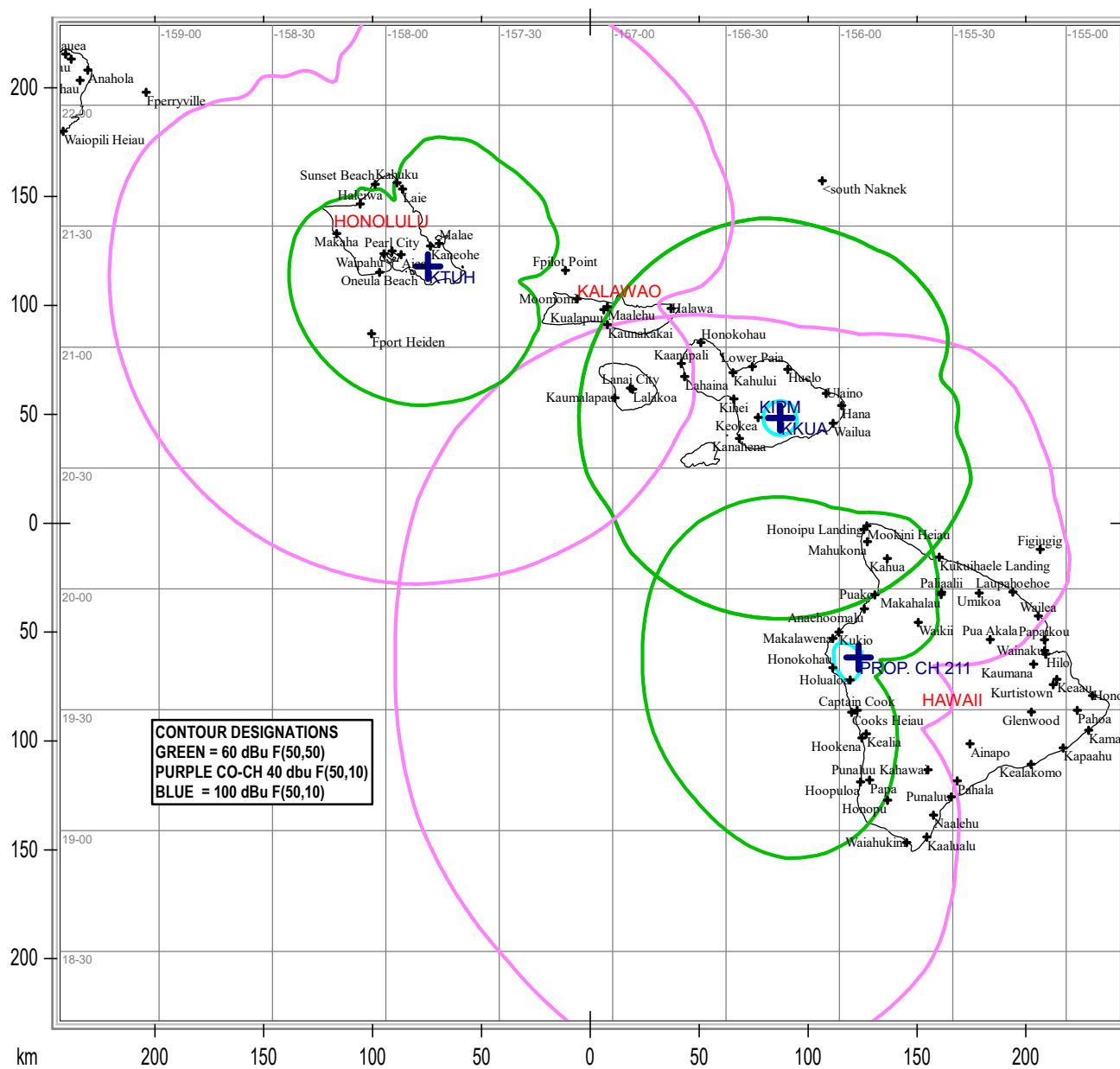
PROPOSED CH 211C 35 kW OMNI @ 932.4 METERS HAAT HOLUALOA, HAWAII



Communications Technologies, Inc. Medford, New Jersey

County Borders State Borders City Borders Lat/Lon Grid

PROPOSED CH 211 C 35 kW OMNI @ 93.4 M HAAT HOLUALOA, HAWAII



Communications Technologies, Inc. Medford, New Jersey

County Borders State Borders Lat/Lon Grid