

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC

28 February 2022

In re Application of
ALMA RADIO INC.

)
) FCC File No. 0000184393

For Minor Modification of WNHA-LP
Facility ID # 194592 in New Haven, CT

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To: Marlene H. Dortch, Secretary Federal
Communications Commission
Attn: Media Bureau, Audio Division

PETITION FOR RECONSIDERATION

Summary:

Pursuant to 47 C.F.R. §1.106, the WBLS Listeners' Coalition (WLC) and its President Dave Anderson, hereby request reconsideration of the grant of the above-captioned license application for minor modification of WNHA-LP filed by Alma Radio Inc. (ARI) on February 4, 2022. The Commission has afforded reconsideration to petitioners where the grant of an application occurred shortly after the application was filed, thus effectively precluding participation in the proceeding. The facility in question was constructed and placed into operation on or about February 4, 2022. The above-captioned license application was filed on February 4, 2022 and granted on February 16, 2022, providing the Petitioners

with insufficient time to exercise ordinary due diligence. In the present scenario, this due diligence included the acquisition and compilation of an exhaustive set of outdoor FM field strength measurements taken throughout Southern Connecticut during severe weather conditions.

The Petitioners would have no objection to the above-referenced license application if WNHA-LP were following the law and using no more than their FCC-authorized power level of 18 watts ERP (H & V). However, as will be described in greater detail hereinafter, ARI is operating WNHA-LP at a grossly excessive power level, causing interference to other FM stations throughout Southern Connecticut and posing a threat to the safety of air navigation. It is critically important that this situation be further investigated by the Commission.

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Background:

The Petitioners listen regularly to radio station WBLS (107.5) which is co-channel to WNHA-LP. Our members live in Fairfield, Easton, Trumbull, Monroe, and Milford (all in Connecticut). WBLS offers a unique format that is not available on any other radio station in the area. More specifically, WBLS provides underserved communities with one-of-a-kind programming such as Caribbean Fever, Quiet Storm, and Steve Harvey. Subsequent to WNHA-LP filing its license application, the Petitioners have experienced severe interference to WBLS while driving around Fairfield, Easton, Trumbull, Monroe, and Milford, where the WNHA-LP signal frequently overtakes WBLS as one stops at a traffic light or maneuvers through an outdoor parking lot. The interference also occurs as one attempts to listen to WBLS on a bedside clock radio or jogs through the park with a portable Walkman[®] device in hand. We are certain of the identity of the interfering station because the offending station repeatedly uses its call letters (WNHA) and the slogan “Alma Radio” on the air many times per hour. In addition, a frequently-played liner informs listeners that the station is broadcasting from New Haven. Moreover, whenever the interference occurs on our car radios, the RDS function displays the WNHA call letters instead of WBLS. Specifically, our in-car RDS displays read, “WNHA 107.5 MHZ, ALMA RADIO, NEW HEAVEN, CT” (note the incorrect but possibly deliberate misspelling of the city of New Haven, and also the deliberate omission of the –LP suffix). These unwanted station switch-overs from WBLS to WNHA-LP are not one-time events due to unusual weather conditions, but rather have been consistent and repeatable on a 24/7 basis. This renders reception of WBLS virtually unusable throughout the aforementioned areas.

Areas Where WNHA-LP Is Interfering with WBLS:

Some illustrative areas where WNHA-LP interferes with WBLS include the Fairfield Chipotle, 1780 Kings Highway East, Fairfield, CT, as well as the remainder of the shopping center in which the

Chipotle is located; 5 Duka Avenue in Fairfield, CT; the Fairfield Stop & Shop, 760 Villa Avenue, Fairfield, CT; the Fairfield Warde High School, 48 Knapps Highway, Fairfield, CT; the Dogwood Green Apartments at Linley & Melville, Fairfield, CT; the Covenant Church at 1 Sport Hill Rd., Easton, CT; 25 Westwood Dr., Easton, CT; Oak Hill and Sport Hill Rd., Easton, CT; Silverman's Farm, 466 Sport Hill Rd., Easton, CT; Snows Farm, 537 Sport Hill Rd., Easton, CT; Maple Farm, 241 Stepney Rd., Easton, CT; 92 Hayes St., Easton, CT; 77 Drings Rd., Monroe, CT; 1262 Monroe Turnpike (Highway 111), Monroe, CT; Masuk High School, 1022 Monroe Turnpike, Monroe CT; the Wines and Spirit Store at Cross Hill Road and Highway 111, Monroe; and Advance Auto, 364 Monroe Turnpike, Monroe, CT. Some of these locations are the residences or workplaces of WLC members. Thus, we reserve the right to follow up with formal complaints if ARI does not remedy the problem by operating WNHA-LP at its proper FCC-authorized power level.

The interference situation is even worse throughout the entire city of Milford, where the 107.5 frequency features WBLS and WHNA-LP repeatedly ricocheting back and forth at a rapid pace, creating an unlistenable mishmash of signals. This dire situation can be observed at Milford's popular beach spots. For example, before WNHA-LP increased its power, we were able to receive a near-perfect signal from WBLS while jogging along Walnut Beach and the Silver Sands State Park. In fact, the remaining New York City-based FM stations atop the Empire State Building, such as WLTW-106.7, WKTU-103.5 and WXNY-96.3, still come in perfectly well on a consistent basis in Milford.

WBLS is a Primary-Service Station, Whereas WNHA-LP is a Secondary-Service Station:

The FCC classifies WBLS as a primary service station, whereas LPFM stations such as WNHA-LP are secondary-service stations that, according to FCC Rules, cannot cause interference to primary-service stations. See *Creation of a Low Power Radio Service*, MM Docket # 99-25, Report & Order, 15 FCC Rcd 2205, 2207-2209, paras. 306 (2000). The FCC established the LPFM service in 2000 as a secondary,

noncommercial radio service with a *maximum* effective radiated power (ERP) of 100 watts. This service was created to facilitate new noncommercial voices with limited expertise and small budgets *that would be able to build and operate community-oriented stations serving highly localized areas.* Informal field testing using a Ford factory-installed car radio reveals that the WNHA-LP signal is as solid as a brick along Route 8 from Exit 14 (Shelton) to Exit 26 (Naugatuck), with these locations being situated 14 to 17 miles (as the crow flies) from the WNHA-LP transmitter site. Likewise, the WNHA-LP signal is also as solid as a brick along Route 84 from Exit 25 (East side of Waterbury) to Exit 32 (Southington), with these locations being situated 17 to 23 miles (as the crow flies) from the WNHA-LP transmitter site. Thus, at its current power level, WNHA-LP is attempting to serve widely-dispersed areas of Southern Connecticut extending across a radius of at least 23 miles, contrary to the above-cited purpose of an LPFM station to serve a highly localized area. WNHA-LP's existing coverage would be extremely improbable if WNHA-LP were using their actually-authorized power level of 18 watts (H&V).

WNHA-LP is Causing Widespread Interference to Other Broadcasters

The LPFM service was never intended to provide applicants with a radio station having an effective coverage radius of 25 or 30 miles. If ARI needs to cover such a wide area, they might consider obtaining a translator, joining forces with another LPFM station, and/or purchasing a companion AM station. However, it is not right for WNHA-LP to crank up their power to the maximum level that their transmitter is capable of producing, drowning out the signals of other radio stations in Connecticut and New York. Although we are filing this pleading on behalf of the listeners of WBLS, it should be emphasized that WNHA-LP is also causing interference to other radio stations in Connecticut, including WRYM's AM Revitalization Translator in Hartford (W297BT) and WICC's AM Revitalization Translator in Bridgeport (W297CP), just to name a couple of examples. Given the

widespread nature of the interference caused by the grossly over-powered operation of WNHA-LP, it is probable that other stations will come forward in due course.

If WNHA-LP were operating at its authorized power level (18 watts H & V), one would not expect this station to cause severe, constant, day-after-day interference to WBLS in areas that are 27 miles remote from the WNHA-LP transmitter site. Moreover, the terrain between WBLS and the area in question is a smooth path that travels mostly over the ocean, whereas the terrain between WNHA-LP and the area in question is a rough path that travels across a series of ridges and valleys. Several of these ridges are over 150' tall, and several of these valleys are at sea level. Consider a specific example: the Fairfield Chipotle is 77.09 kilometers from the WBLS transmitter site, along a bearing of 53.68°. By comparison, the Fairfield Chipotle is 39.82 kilometers from the WNHA-LP transmitter site, along a bearing of 243.46°. Using the online FCC Curves utility for assessing FM propagation, the predicted F(50,50) signal level of WBLS is 47.892 dBu at the Fairfield Chipotle, whereas the predicted F(50,50) signal level of WNHA-LP is only 27.109 dBu at the Fairfield Chipotle. There is more than a 20-dB difference in the predicted signal levels, with WNHA-LP falling below the threshold undesired-to-desired- (U to D) ratio for co-channel stations (-20 dB). At this -20 dB ratio, one would expect a virtually interference-free signal from the stronger co-channel signal (WBLS). One would most certainly *not* expect frequent and annoying 'punch-throughs' where the weaker, 27-mile (40-kilometer) distant signal of WNHA-LP repeatedly overtakes the 'stronger' WBLS signal as one moves about the area. And, as mentioned previously, the local terrain works in favor of WBLS and against WNHA-LP.

Field Testing of WNHA-LP

Due to the widespread existence of the WNHA-LP interference, along with its unexpected and

improbable nature when viewed in the context of standard RF prediction algorithms, a thorough field investigation was conducted using the methodology set forth in 47 CFR §73.314. However, due to time constraints, as well as brutally cold temperatures and gusty winds in the test area, a 7-foot antenna height was used instead of a 30-foot height, with the received signal strength being scaled by 6.3 dB to account for the height differential. For further details, please refer to *Measurement of Service Area for Television Broadcasting*, Robert S. Kirby, National Bureau of Standards, IRE Transactions on Broadcast Transmission Systems, February 1957, pages 23 to 30: In smooth terrain, “there is nearly a direct relationship [of signal strength] with height, and in this example [this reference is comparing received signal levels at 5 feet versus 30 feet above ground], the signal at the standard dipole measurement height [i.e., 30 feet] will be nearly 6 times stronger (7.78 dB.)” Thus, in the present scenario, we based the height scaling factor on a reasonable assumption that received signal strength is directly proportional to antenna height, with 30/7 corresponding to a gain of 6.3 dB.

We employed an A.H. Systems calibrated FCC-2 Tuned Dipole Antenna for all tests, along with an ATU-510 tripod, a calibrated Tektronix RSA507A Spectrum Analyzer, and a Panasonic CF-20 Toughbook running Tektronix’s SignalVu software. The horizontally-polarized antenna was tuned to the appropriate frequency, in accordance with the FM broadcast facility being tested. Pursuant to 47 CFR §73.314, at each measurement location, a cluster of five fixed points were utilized. At each of the five points, the antenna was tripod-mounted to a height of 7’ above ground. While keeping the antenna horizontally-polarized, the antenna was slowly rotated from North to East to South to West and back to North. The process was carefully repeated to verify and confirm the peak value, with the maximum received signal level being recorded. The maximum received signal level at each of the five points was then averaged to create a single signal level number corresponding to each of the measurement locations.

Our testing approach compares the WNHA-LP measured signal strength at a distance of 1.49

kilometers from its transmitter site to the measured signal strengths of three reference facilities also taken at a distance of 1.49 kilometers from their respective transmitter sites. Measurements along several different bearings were taken for each of the stations. The latitudes, longitudes, and elevations above mean sea level for each of the monitoring points are shown in Attachment “A”. Attachment “B” shows the monitoring points for WNHA-LP plotted on a satellite map. Likewise, Attachment “C” shows the monitoring points for W252AS, and Attachment “D” shows the monitoring points for WILI-FM and WECS.

A distance of 1.49 kilometers was employed to eliminate or greatly reduce the impact of terrain on signal measurements, to provide line-of-sight conditions, and to minimize variations in atmospheric propagation as a function of time. Moreover, the 1.49-kilometer distance permits use of the free-space propagation formula in accordance with the FCC Curves online utility. At distances of less than 1.5 kilometers, antenna height is not a relevant parameter and is not considered by the FCC Curves program.

WNHA-LP Measurements

WNHA-LP, 18 Watts ERP, One-Bay Omni, Circularly-Polarized Antenna

Name and Address of Monitoring Point for WNHA-LP	Distance to WNHA-LP Transmitter Site	Bearing from WNHA-LP Transmitter Site	Measured Field Strength at 7' Above Ground (dBμV/m)	Measured Field Strength Scaled to 30' Above Ground (dBμV/m)	FCC Curves F(50,50) Expected Field Strength at 30' Above Ground (dBμV/m)	Comparison-Measured to Expected (30')
CT SportsPlex Parking Lot, 216 Foxon Rd., North Branford, CT	1.49 km	5.00°	95.4	101.7	86.0	+15.7 dB (Measures Higher than Expected)
Salon Spot Parking Lot, 272 Foxon Rd., North Branford, CT	1.47 km	22.30°	93.2	99.5	86.2	+13.3 dB (Measures Higher than Expected)
34 Piscitello Dr., Side of Road, Branford, CT	1.49 km	90.00°	98.2	104.5	86.0	+18.5 dB (Measures Higher than Expected)
29 Red Rock Rd., Side of Road, Branford, CT	1.33 km	147.00°	100.1	106.4	87.1	+19.3 dB (Measures Higher than Expected)
Squire Hill Condos Parking Lot, 179 Brushy Plain Rd, Branford, CT	1.49 km	175.00°	82.1	88.4	86.0	+2.4 dB (Measures Higher than Expected)
Watch Hill Rd & Hemlock Rd., Side of Road, Branford, CT	1.49 km	204.00°	92.4	98.7	86.0	+12.7 dB (Measures Higher than Expected)
61 Glenmoor Dr., Side of Road, East Haven, CT	1.49 km	287.00°	94.4	100.7	86.0	+14.7 dB (Measures Higher than Expected)
Deer Run Elementary School, Parking Lot, 311 Foxon Rd., East Haven, CT	1.67 km	307.50° (HAAT = 51.6 m)	102.3	108.6	79.0	+29.6 dB (Measures Higher than Expected)

Name and Address of Monitoring Point for WNHA-LP (CONT'D)	Distance to WNHA-LP Transmitter Site (CONT'D)	Bearing from WNHA-LP Transmitter Site (CONT'D)	Measured Field Strength at 7' Above Ground (dBμV/m) (CONT'D)	Measured Field Strength Scaled to 30' Above Ground (dBμV/m) (CONT'D)	FCC Curves F(50,50) Expected Field Strength at 30' Above Ground (dBμV/m) (CONT'D)	Comparison-Measured to Expected (30') (CONT'D)
Porto Funeral Home, Parking Lot, 234 Foxon Rd., East Haven, CT	1.40 km	311.00°	102.1	108.4	86.7	+21.7 dB (Measures Higher than Expected)
East Haven High School, Open Field East of School, 35 Wheelbarrow Ln., East Haven, CT	1.49 km	325.46°	101.8	108.1	86.0	+22.1 dB (Measures Higher than Expected)
AVERAGE of All Monitoring Points			96.2	102.5		WNHA-LP Measures +17.0 dB Higher than Expected when averaging across all monitoring points.

TABLE 1

WNHA-LP measures +17 dB higher than expected when averaging across all of the monitoring points. WNHA-LP is licensed to use 18 watts of ERP (H&V), which is equivalent to 12.553 dBW. It should be noted that 12.553 dBW (authorized power) plus 17 dB (measured versus expected field strength) yields an actual power level (ERP) of 29.553 dBW, which is equivalent to 902 watts. ***Thus, based upon the measurements of Table 1, WNHA-LP is actually operating at an ERP of approximately 902 watts!***

In order to provide an additional cross-check on the ERP actually being used by WNHA-LP, a local translator (W252A) was selected as a first 'reference' facility. This reference facility uses an almost identical ERP to that authorized for WNHA-LP (19 watts in the case of W252AS, versus 18 watts in the case of WNHA-LP). Moreover, both WNHA-LP and W252AS use single-bay, non-directional, circularly-polarized antennas. The facilities have very similar antenna heights above average terrain (HAATs) – WNHA is at 70 meters, and W252AS is at 68 meters. However, for distances less than 1.5 kilometers, antenna height is not a relevant parameter, as the FCC Curves program uses the free-space equation for these relatively short distances. In any event, both WNHA-LP

and W252AS serve the New Haven, CT market and confront similar terrain conditions. We confirmed that W252AS was operating at its authorized power level during this test.

W252AS, 19 Watts ERP, One-Bay Omni, Circularly-Polarized Antenna

Name and Address of Monitoring Point for W252AS	Distance to W252AS Transmitter Site	Bearing from W252AS Transmitter Site	Measured Field Strength at 7' Above Ground	Measured Field Strength Scaled to 30' Above Ground	FCC Curves F(50,50) Expected Field Strength	Comparison-Measured to Expected (30')
Daiko Japanese Restaurant, Parking Lot, 400 Derby Ave., West Haven, CT	1.42 km	20.00°	77.2	83.5	86.7	-3.2 dB
St. Lawrence Cemetery, 618 Forest Rd. / 280 Derby Ave., West Haven, CT	1.49 km	47.28°	78.9	85.2	86.2	-1.0 dB
Quigley Baseball Field, 362 Front Ave., West Haven, CT	1.49 km	102.00°	79.9	86.2	86.2	0.0 dB
Harugari Hall, Parking Lot, 1076 W. Campbell Ave., West Haven, CT	1.46 km	127.00°	80.3	86.6	86.4	+0.2 dB
West Haven Center for Nursing, 310 Terrace Ave., West Haven, CT	1.49 km	165.24°	80.0	86.3	86.4	-0.1 dB
A-1 Discount Liquor Store, Parking Lot, 1035 Boston Post Rd., West Haven, CT	1.49 km	203.00°	79.9	86.2	86.2	0.0 dB

Name and Address of Monitoring Point for W252AS (CONT'D)	Distance to W252AS Transmitter Site (CONT'D)	Bearing from W252AS Transmitter Site (CONT'D)	Measured Field Strength at 7' Above Ground (CONT'D)	Measured Field Strength Scaled to 30' Above Ground (CONT'D)	FCC Curves F(50,50) Expected Field Strength (CONT'D)	Comparison-Measured to Expected (30') (CONT'D)
Maltby Lakes Recreation Area, Parking Lot, 645 Derby Turnpike, West Haven, CT	1.25 km	320.00°	77.5	83.8	87.8	-4.0 dB
W252AS - AVERAGE of All Monitoring Points:			79.1	85.4	W252AS measurements are very close to theoretical FCC Curves prediction	Although WNHA-LP and W252AS are authorized to use substantially the same ERP, WNHA-LP is 17.1 dB stronger than W252AS.

TABLE 2

Since W252AS and WNHA-LP are authorized at almost identical power levels and HAATs, and since both stations use one-bay, non-directional, circularly-polarized antennas, one would expect very similar measurements from these stations at a distance of 1.49 kilometers. However, the average measured signal strength among all monitoring points was 96.2 dBuV/m for WNHA-LP, yet the average measured signal strength among all monitoring points was only 79.1 dBuV/m for W252AS. This represents a substantial difference of 17.1 dB, with WNHA-LP having a signal that is 17.1 dB stronger than would be expected in comparison to W252AS.

We can use the observed difference in signal strengths between W252AS and WNHA-LP to calculate the probable actual operating power of WNHA-LP as follows: W252AS uses 19 watts of ERP (H&V), which is equivalent to 12.788 dBW. Adding the 17.1 dB observed signal strength differential to 12.788 dBW yields a probable actual operating power of 29.888 dBW for WNHA-LP. 29.888 dBW is equivalent to 974.5 watts (ERP). Thus, based upon the received signal level comparison between W252AS and WNHA-LP, one may conclude that WNHA-LP is operating with approximately 975 watts of power, grossly in excess of its authorized power level of 18 watts.

In addition to W252AS, two additional reference facilities were selected because they are authorized to use ERPs in the vicinity of that actually being used by the WNHA-LP facility. WECS was selected as our second reference facility because, just like WNHA-LP, it is using a one-bay, non-directional, circularly-polarized antenna. However, whereas WNHA-LP is authorized to use only 18 watts of ERP (H&V), WECS is authorized to use 430 watts (H&V). WILI-FM was selected as our third reference facility because, just like WNHA-LP and WECS, it is also using a one-bay, non-directional, circularly-polarized antenna. However, whereas WNHA-LP is authorized to use only 18 watts of ERP (H&V), WILI-FM is authorized to use 1,050 watts (H&V). The WECS and WILI-FM antennas are both located on the same tower, designated as ASRN #1043730, permitting the same set of 1.49-km reference points to be used for both stations. We confirmed that WECS and WILI-FM were operating at their respective authorized power levels during this test.

WECS, 430 Watts ERP, One-Bay Omni, Circularly-Polarized Antenna

Name and Address of Monitoring Point for WECS	Distance to WECS Transmitter Site	Bearing from WECS Transmitter Site	Measured Field Strength at 7' Above Ground	Measured Field Strength Scaled to 30' Above Ground	FCC Curves F(50,50) Expected Field Strength	Deviation-Measured to Expected
28 South Street Extension, Willimantic, CT	1.49 km	17.71°	92.1	98.4	99.8	-1.4 dB
197 Jordan Rd., Willimantic, CT	1.49 km	47.47°	87.0	93.3	99.8	-6.5 dB
3 Bush Hill Rd., Lebanon, CT	1.49 km	79.55°	89.8	96.1	99.8	-3.7 dB
68 Bogg Ln., Lebanon, CT	1.49 km	158.76°	96.3	102.6	99.8	+2.8 dB
298 Bender Rd., Lebanon, CT	1.49 km	211.10°	95.2	101.5	99.8	+1.7 dB
246 Beaumont Hwy., Lebanon, CT	1.49 km	282.37°	92.8	99.1	99.8	-0.7dB
Welcome to Lebanon Sign, 60 CT Hwy 289, Lebanon, CT	1.49 km	341.00°	97.1	103.4	99.8	+3.6 dB

Name and Address of Monitoring Point for WECS (CONT'D)	Distance to WECS Transmitter Site (CONT'D)	Bearing from WECS Transmitter Site (CONT'D)	Measured Field Strength at 7' Above Ground (CONT'D)	Measured Field Strength Scaled to 30' Above Ground (CONT'D)	FCC Curves F(50,50) Expected Field Strength (CONT'D)	Deviation-Measured to Expected (CONT'D)
AVERAGE of All Monitoring Points			92.9	99.2	WECS measurements are very close to theoretical FCC Curves prediction.	WNHA-LP is 3.3 dB stronger than WNHA-LP.

TABLE 3

With reference to Table 3, the WECS field strength measurements were quite close to the theoretical values predicted by the FCC Curves online program. When comparing the average of all monitoring points for WECS to the average of all monitoring points for WNHA-LP, it is observed that WNHA-LP is 3.3 dB stronger than WECS. Note that, if WNHA-LP and WECS were both operating at their FCC-authorized power levels, one would expect WNHA-LP to be 13.8 dB weaker than WECS because WECS is authorized to use 430 watts ERP (H&V), whereas WNHA-LP is only authorized to use 18 watts ERP (H&V). Yet in this situation, WNHA-LP is 3.3 dB stronger than WECS, indicative of the fact that WNHA-LP is using more power than the 430 watts authorized to WECS.

We can use the observed difference in signal strengths between WECS and WNHA-LP to calculate the probable actual operating power of WNHA-LP as follows: WECS uses 430 watts of ERP (H&V), which is equivalent to 26.335 dBW. Adding the observed 3.3 dB signal strength differential to 26.335 dBW yields a probable actual operating power of 29.635 dBW for WNHA-LP. 29.635 dBW is equivalent to 919.3 watts (ERP). Thus, based upon the received signal level comparison between WECS and WNHA-LP, one may conclude that WNHA-LP is operating with approximately 919.3 watts of power, grossly in excess of its authorized power level of 18 watts. This estimate of power conforms reasonably closely with the previous estimate of 902 watts based on field measurements of the WNHA-LP signal itself, as well as the previous estimate of 974 watts based on field measurement comparisons of WNHA-LP to W252AS. *Thus, the actual ERP of WNHA-LP is somewhere in the vicinity of 900 to 1,000 watts, a far cry from their authorized ERP of 18 watts.*

We conducted a final set of field strength measurements based upon our third reference station, WILI-FM. WILI-FM is authorized to use 1,050 watts of ERP (H&V) from a one-bay, omnidirectional, circularly-polarized antenna.

WILI-FM, 1050 Watts ERP, One-Bay Omni, Circularly-Polarized Antenna

Name and Address of Monitoring Point for WILI-FM	Distance to WILI-FM Transmitter Site	Bearing from WILI-FM Transmitter Site	Measured Field Strength at 7' Above Ground	Measured Field Strength Scaled to 30' Above Ground	FCC Curves F(50,50) Expected Field Strength	Deviation-Measured to Expected
28 South Street Extension, Willimantic, CT	1.49 km	17.71°	95.9	102.2	103.7	-1.5 dB
197 Jordan Rd., Willimantic, CT	1.49 km	47.47°	95.4	101.7	103.7	-2.0 dB
3 Bush Hill Rd., Lebanon, CT	1.49 km	79.55°	95.6	101.9	103.7	-1.8 dB
68 Bogg Ln., Lebanon, CT	1.49 km	158.76°	98.5	104.8	103.7	+1.1 dB
298 Bender Rd., Lebanon, CT	1.49 km	211.10°	97.0	103.3	103.7	-0.4 dB
246 Beaumont Hwy., Lebanon, CT	1.49 km	282.37°	95.8	102.1	103.7	-1.6 dB
Welcome to Lebanon Sign, 60 CT Hwy 289, Lebanon, CT	1.49 km	341.00°	99.1	105.4	103.7	+1.7 dB
AVERAGE of All Monitoring Points			96.8	103.0	WILI-FM measurements are very close to theoretical FCC Curves prediction.	WILI-FM is 0.5 dB stronger than WNHA-LP.

TABLE 4

With reference to Table 4, the WILI-FM field strength measurements were quite close to the theoretical values predicted by the FCC Curves online program. When comparing the average of all monitoring points for WILI-FM to the average of all monitoring points for WNHA-LP, it is observed that WNHA-LP is only 0.5 dB weaker than WILI-FM. Note that, if WNHA-LP and WILI-FM were both operating at their FCC-authorized power levels, one would expect WNHA-LP to be 17.7 dB weaker than WILI-FM

because WILI-FM is authorized to use 1050 watts ERP (H&V), whereas WNHA-LP is only authorized to use 18 watts ERP (H&V). Yet in this situation, WNHA-LP is only 0.5 dB weaker than WILI-FM, indicative of the fact that WNHA-LP is using an actual ERP quite close to that of WILI-FM, in the vicinity of 1,000 watts. It may be noted that WILI-FM is a full-powered, Class A FM broadcast station.

We can use the observed difference in signal strengths between WILI-FM and WNHA-LP to calculate the probable actual operating power of WNHA-LP as follows: WILI-FM uses 1,050 watts of ERP (H&V), which is equivalent to 30.212 dBW. Subtracting the observed 0.5-dB signal strength differential from 30.212 dBW yields a probable actual operating power of 29.712 dBW for WNHA-LP. 29.712 dBW is equivalent to 935.8 watts (ERP). Thus, based upon the received signal level comparison between WILI-FM and WNHA-LP, one may conclude that WNHA-LP is operating with approximately 935 watts of power, grossly in excess of its authorized power level of 18 watts. This estimate of power conforms reasonably closely with the previous estimate of 902 watts based on field measurements of the WNHA-LP signal itself, as well as the previous estimate of 974 watts based on field measurement comparisons of WNHA-LP to W252AS, and the previous estimate of 919.3 watts based on field measurement comparisons of WNHA-LP to WECS. These measurements are summarized in Table 5, below. *Thus, the actual ERP of WNHA-LP is somewhere in the vicinity of 900 to 1,000 watts, a far cry from their authorized ERP of 18 watts.*

WNHA-LP ESTIMATED ERP

Based On:	
WNHA-LP Field Strength Measurements	902 Watts ERP
Comparison of Field Strength Measurements: WNHA-LP versus W252AS (19 Watts ERP, H&V)	974 Watts ERP
Comparison of Field Strength Measurements: WNHA-LP versus WECS (430 Watts ERP, H&V)	919 Watts ERP
Comparison of Field Strength Measurements: WNHA-LP versus WILI-FM (1,050 Watts ERP, H&V)	935 Watts ERP
AVERAGE ESTIMATED ERP, WNHA-LP:	932 Watts ERP

TABLE 5

WNHA-LP's Over-Powered Operation Constitutes a Hazard to Air Navigation

Due to the proximity of FM frequencies to FAA navigation signaling systems, the FAA requires prospective FM broadcasters to complete FAA Form 7460-1, Notice of Proposed Construction or Alteration. For FM broadcast stations, this Form must include the Effective Radiated Power (ERP) of all proposed or modified transmitters on the tower or structure. The FAA uses this information to determine whether or not a proposed FM broadcast station can be safely operated without causing destructive radio-frequency interference (RFI) to an FAA Instrument Landing System (ILS) or VHF Omnidirectional Radio Range (VOR) facility. For further details, please consult Spectrum Management Regulations and Procedures Manual, 6050.32B, Department of Transportation, Federal Aviation Administration. If signals from a VOR or ILS facility are impaired by interference, the end result could be serious, such as a plane crash or the loss of life.

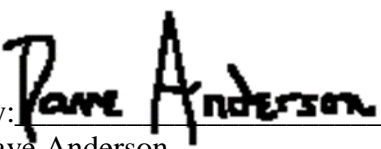
The FAA uses the specific ERP figure supplied by the applicant on Form 7460-1 to reach a determination of no hazard for the new or modified FM broadcast station. If, however, the FM broadcaster actually uses an ERP grossly in excess of that originally specified on FAA Form 7460-1, the higher power level was never properly studied by the FAA, with the effect that destructive RF interference may occur, placing aircraft in danger. This concern is particularly important where the actual ERP is several orders of magnitude greater than the authorized ERP. In the present situation, the FAA studied an 18-watt LPFM facility, whereas WNHA-LP is actually operating as a full-powered Class A facility using approximately 1,000 watts of ERP.

The transmitter site of WNHA-LP is only 7.62 kilometers (4.74 miles) from the Tweed-New Haven Regional Airport, a public airport with an IATA Location Identifier of HVN. With its authorized power level of 18 watts (ERP, H & V), WNHA-LP should be placing a 52-dBu signal over this airport, using the F(50,50) approach and the FCC Curves online calculator. This signal level would not pose a safety threat to air navigation systems. However, at WNHA-LP's present power level of about 900 to 1,000 watts, WNHA-LP provides in excess of a 70-dBu signal to the Tweed-New Haven Airport. It should also be noted that Tweed-New Haven Airport is only 24.66 kilometers from the transmitter site of WEBE (107.9 MHz), a full Class B station using 20.5 kilowatts at a HAAT of 202 meters. The signal level of WEBE is approximately 74 dBu at the Tweed-New Haven Airport. With two strong FM stations operating on frequencies spaced apart by only 0.4 MHz, where the allotted frequencies are just below the aircraft band, the threat of intermodulation interference is quite real.

In the case of the Tweed-New Haven Airport, pilots make use of a nearby VOR navigational aid identified as BDR and operating at 108.8 MHz. Assume that f_1 is 107.9 MHz and f_2 is 107.5 MHz. The higher-order ($3f_1 - 2f_2$) intermodulation component for this frequency combination falls on 108.7 MHz. Considering the 75-KHz deviation of a typical FM broadcast station, this intermodulation component could easily wipe out a VOR signal on 108.8. In this manner, the over-powered WNHA-LP (107.5 MHz) signal can combine with the licensed WEBE (107.9) signal to constitute a hazard to air navigation. For these reasons, it is critically important that WNHA-LP comply with the terms of its authorization.

CONCLUSION:

The Petitioners would have no objection to the above-referenced license application if WNHA-LP were following the law and using no more than their FCC-authorized power level of 18 watts ERP (H & V). However, as described above, ARI is operating WNHA-LP at a grossly excessive power level, causing interference to other FM stations throughout Southern Connecticut and posing a threat to the safety of air navigation. It is critically important that this situation be further investigated by the Commission.

By: 
Dave Anderson

President, WBLS Listeners' Coalition
25 Westwood Drive
Easton, CT 06612
(475)-999-4638
davanderson202@gmail.com


Dated: February 28, 2022

Affidavit of Qualified Radio Engineer / Certification of Dave Anderson

I, Dave Anderson, declare under penalty of perjury that I have reviewed the foregoing Informal Objection and, to the best of my knowledge, the facts set forth therein are true and correct.

I hold a Bachelor of Science Degree in Electrical Engineering from the University of Michigan in Ann Arbor, Michigan, and have worked in the field of radio engineering for the past 30 years. I have experience conducting investigations related to allegations of over-powered operation of AM and FM radio stations in various markets throughout the United States and Mexico.

I declare under penalty of perjury that the attached technical exhibit was prepared by me and is believed to be true and correct.

By: 
Dave Anderson

Dated: February 28, 2022

Certificate of Service

I, Dave Anderson, certify that a true and correct copy of the foregoing Informal Objection was sent, this 28th day of February, 2022, by first-class, postage paid mail to the following:

Alma Radio Inc. (Applicant)
17 Farren Ave.
New Haven, CT 06519

James E. Price III (Legal Representative)
Sterling Communications, Inc.
P.O. Box 1877
LaFayette, GA 30728

Charles Burkhart (Technical Consultant)
Sterling Communications, Inc.
P.O. Box 1877
LaFayette, GA 30728

By:

A handwritten signature in black ink that reads "DAVE ANDERSON". The letters are stylized and somewhat cursive.

Dave Anderson

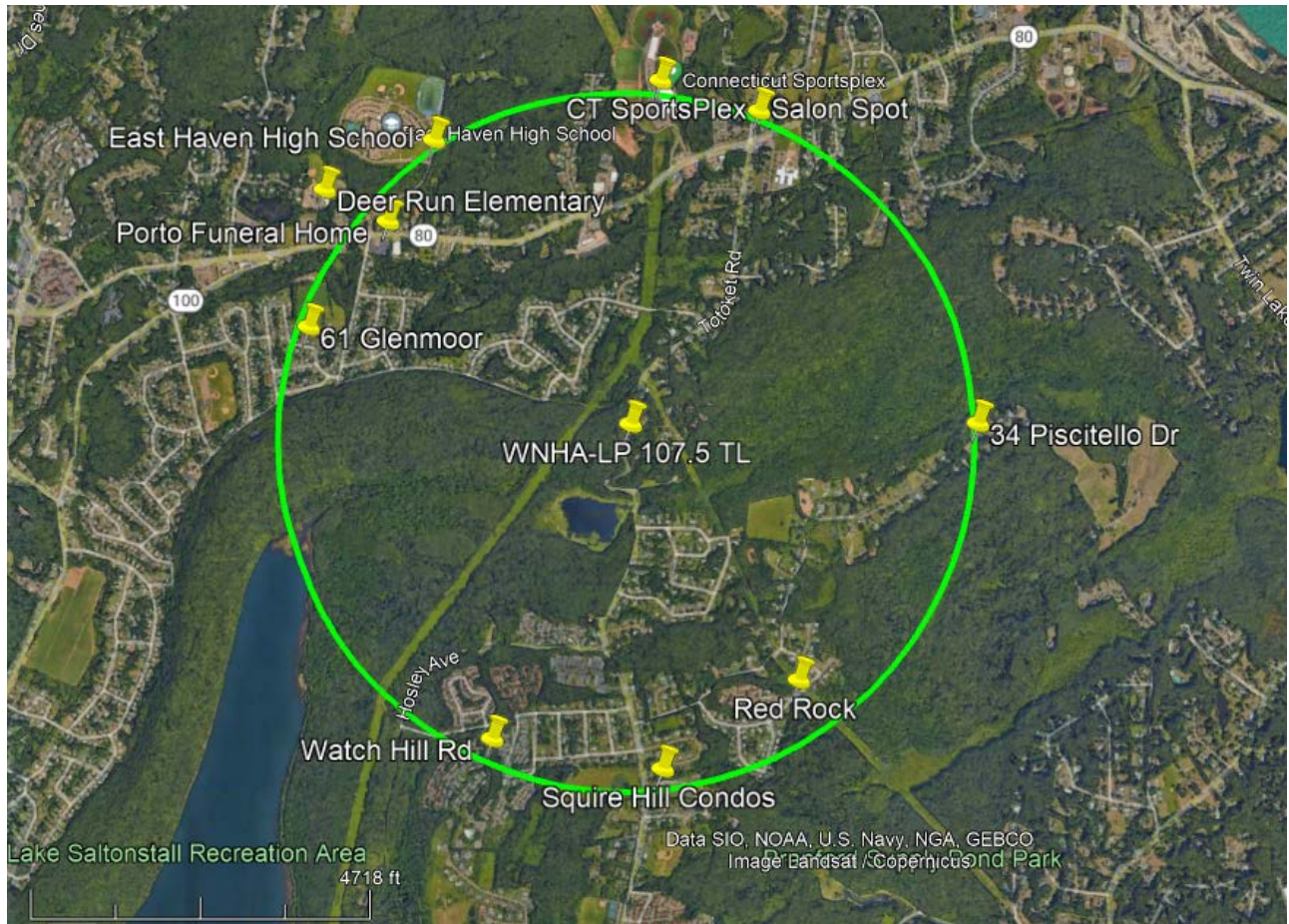
ATTACHMENT “A”

MASTER LIST OF MONITORING POINTS (IN ALPHABETICAL ORDER)

Name and Address of Monitoring Point	Latitude (NAD 83)	Longitude (NAD 83)	Height Above Mean Sea Level (Meters)	Monitoring Point Used For:
197 Jordan Rd., Willimantic, CT	41-41-33 N	72-12-08 W	88 m	WECS & WILI-FM
246 Beaumont Highway, Lebanon, CT	41-41-11 N	72-13-58 W	173 m	WECS & WILI-FM
28 South Street Extension, Willimantic, CT	41-41-46 N	72-12-36 W	108 m	WECS & WILI-FM
29 Red Rock Rd., Side of Road, Branford, CT	41-18-25 N	72-48-40 W	59 m	WNHA-LP
298 Bender Rd., Willimantic, CT	41-40-19 N	72-13-29 W	147 m	WECS & WILI-FM
3 Bush Hill Rd., Lebanon, CT	41-41-09 N	72-11-52 W	96 m	WECS & WILI-FM
34 Piscitello Dr., Side of Road, Branford, CT	41-19-00 N	72-48-07 W	44 m	WNHA-LP
61 Glenmoor Dr., Side of Road, East Haven, CT	41-19-14 N	72-50-11 W°	19 m	WNHA-LP
68 Bogg Ln., Lebanon, CT	41-40-16 N	72-12-32 W	121 m	WECS & WILI-FM
A-1 Discount Liquor Store, Parking Lot, 1035 Boston Post Rd., West Haven, CT	41-17-01 N	72-58-49 W	51 m	W252AS
CT SportsPlex, Parking Lot, 216 Foxon Rd., North Branford, CT	41-19-49 N	72-49-05 W	26 m	WNHA-LP
Daiko Japanese Restaurant, Parking Lot, 400 Derby Ave., West Haven, CT	41-18-29 N	72-58-02 W	17 m	W252AS
Deer Run Elementary School, Parking Lot, 311 Foxon Rd., East Haven, CT	41-19-34 N	72-50-08 W	20 m	WNHA-LP
East Haven High School, Open Field East of School, 35 Wheelbarrow Ln., East Haven, CT	41-19-40 N	72-49-47 W	42 m	WNHA-LP
Harugari Hall, Parking Lot, 1076 W. Campbell Ave., West Haven, CT	41-17-18 N	72-57-33 W	12 m	W252AS
Welcome to Lebanon Sign, 60 CT Highway 289, Lebanon, CT	41-41-46 N	72-13-16 W	119 m	WECS & WILI-FM
Maltby Lakes Recreation Area, Parking Lot, 645 Derby Turnpike, West Haven, CT	41-18-17 N	72-58-58 W	47 m	W252AS
Porto Funeral Home, Parking Lot, 234 Foxon Rd., East Haven, CT	41-19-29 N	72-49-56 W	17 m	WNHA-LP
Quigley Baseball Field, 362 Front Ave., West Haven, CT	41-17-35 N	72-57-21 W	5 m	W252AS

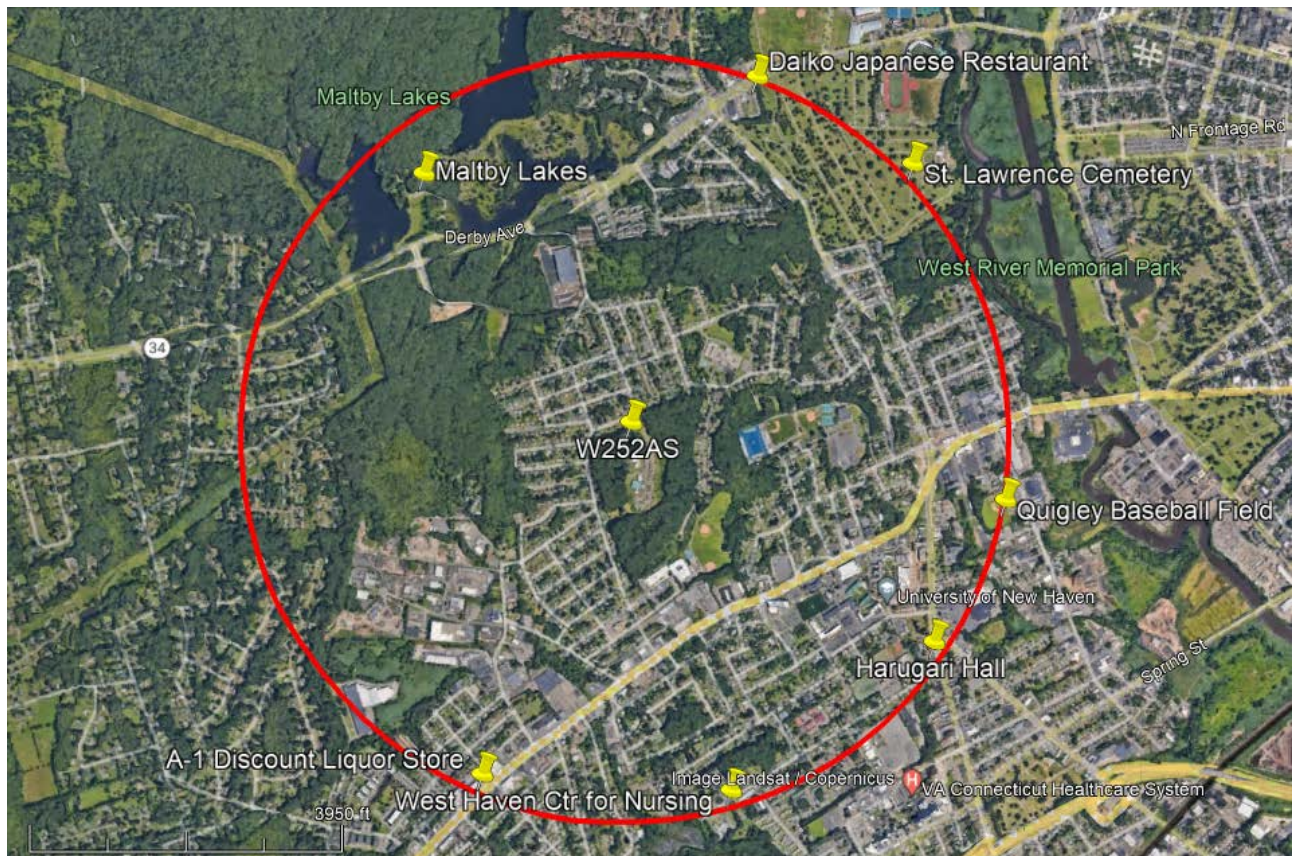
Salon Spot, Parking Lot, 272 Foxon Rd., North Branford, CT	41-19-44 N	72-48-47 W°	23 m	WNHA-LP
Squire Hill Condos, Parking Lot, 179 Brushy Plain Rd, Branford, CT	41-18-13 N	72-49-5 W	66 m	WNHA-LP
St. Lawrence Cemetery, 618 Forest Rd / 280 Derby Ave., West Haven, CT	41-18-18 N	72-57-36 W	4 m	W252AS
Watch Hill Rd & Hemlock Rd., Side of Road, Branford, CT	41-18-17 N	72-49-37 W	35 m	WNHA-LP
West Haven Center for Nursing, 310 Terrace Ave., West Haven, CT	41-16-59 N	72-58-07 W	23 m	W252AS

ATTACHMENT “B”



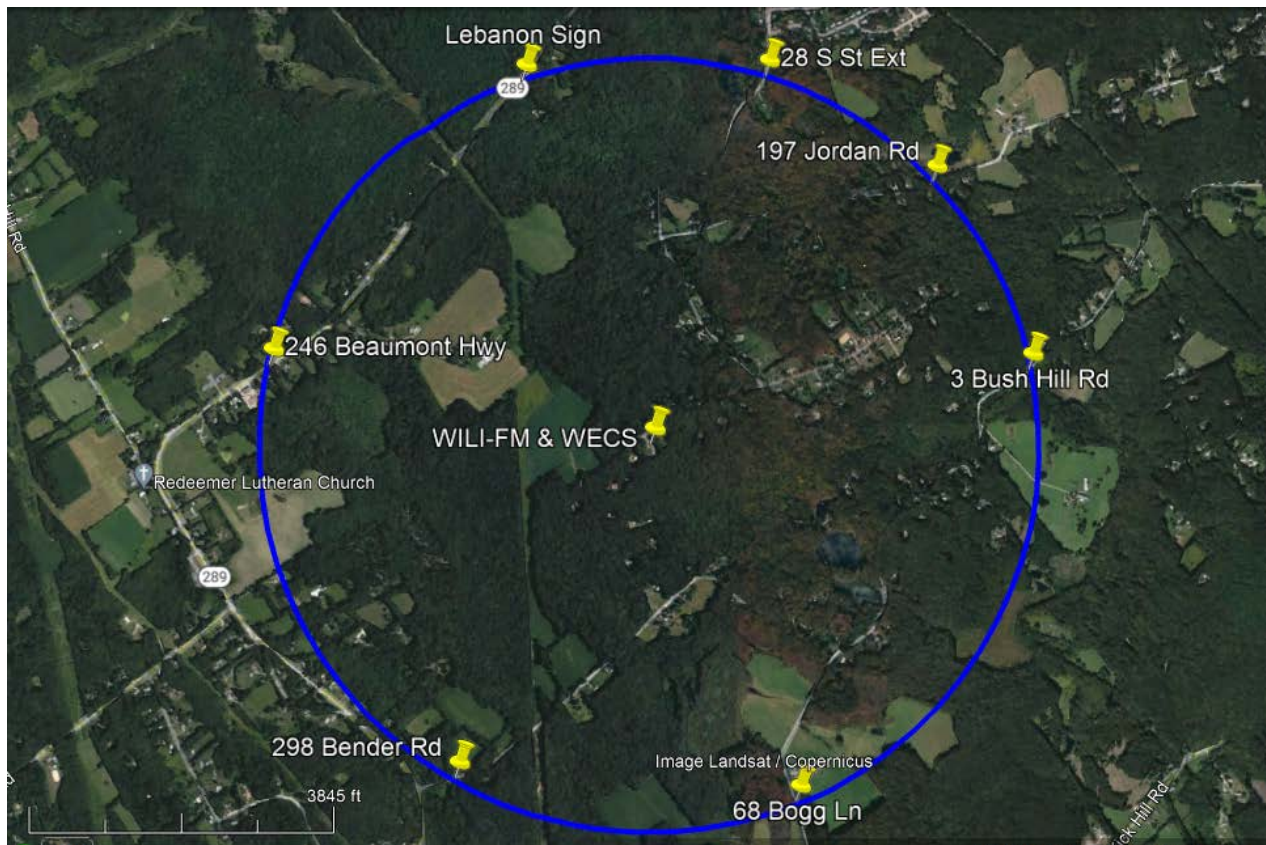
MAP OF MONITORING POINTS USED FOR WNHA-LP

ATTACHMENT “C”



MAP OF MONITORING POINTS USED FOR W252AS

ATTACHMENT “D”



MAP OF MONITORING POINTS USED FOR WILI-FM AND WECS