

Shainis & Peltzman, Chartered

Counselors at Law

Aaron P. Shainis
aaron@s-plaw.com

Lee J. Peltzman
lee@s-plaw.com

Suite 240
1850 M Street, N.W.
Washington, D.C. 20036

(202) 293-0011
Fax (202) 293-0810
e-mail: shainispeltzman@s-plaw.com

January 12, 2018

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington DC 20554

**Re: In the Matter of Modernization of
Media Regulation Initiative
MB Docket 17-105
Ex Parte Notice**

Dear Ms. Dortch:

On Wednesday, January 10th, 2018, Aaron P. Shainis, on behalf of the law firm Shainis & Peltzman, Chartered ("S&P"), and Geo Broadcast Solutions, LLC ("GBS"), Christopher F. Devine, a principal of GBS, Andrew Barrett, also a GBS principal, Bert Goldman, GBS consulting engineer, and William Hieatt, GBS Chief Technology Officer, met with Media Bureau representatives James Bradshaw, Robert Gates, and Larry Hannif-Ali.

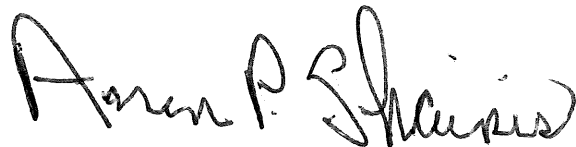
At the meeting, the pending Comments filed by S&P and GBS were discussed. The background to the filing of the Comments, as well as the merits of the comments, specifically, the far-reaching implications dealing with the modification of Section 74.1231(i) of the Commission's Rules to allow FM Booster Stations to originate programming. It was explained that allowing such origination would promote local business and significantly benefit a financially challenged radio industry. In addition, it would have far reaching implications relative to stations serving various audiences through public service announcements and other non-commercial messaging.

At the meeting, a brief visual slide presentation was presented along with audio clips demonstrating the minimal interference which would be occasioned by the utilization of the GBS technology. The issue of interference did not appear to be an issue of concern for the Commission's staff. The Commission personnel emphasized that the ultimate decision as to whether a rulemaking would be put out for comment would be up to the Commission. GBS was encouraged to continue its efforts to obtain Commission support for the issuance of a Notice of Proposed Rulemaking.

Attached to this letter are the handouts that were provided at the meeting. In addition, one of the handouts entitled "*Ex Parte Comments*" was provided in advance of the meeting.

This letter is being filed electronically, pursuant to Section 1206 of the Commission's Rules.

Sincerely,

A handwritten signature in black ink, appearing to read "Aaron P. Shainis". The signature is fluid and cursive, with the first name "Aaron" and last name "Shainis" being clearly legible, and "P." as a small middle initial.

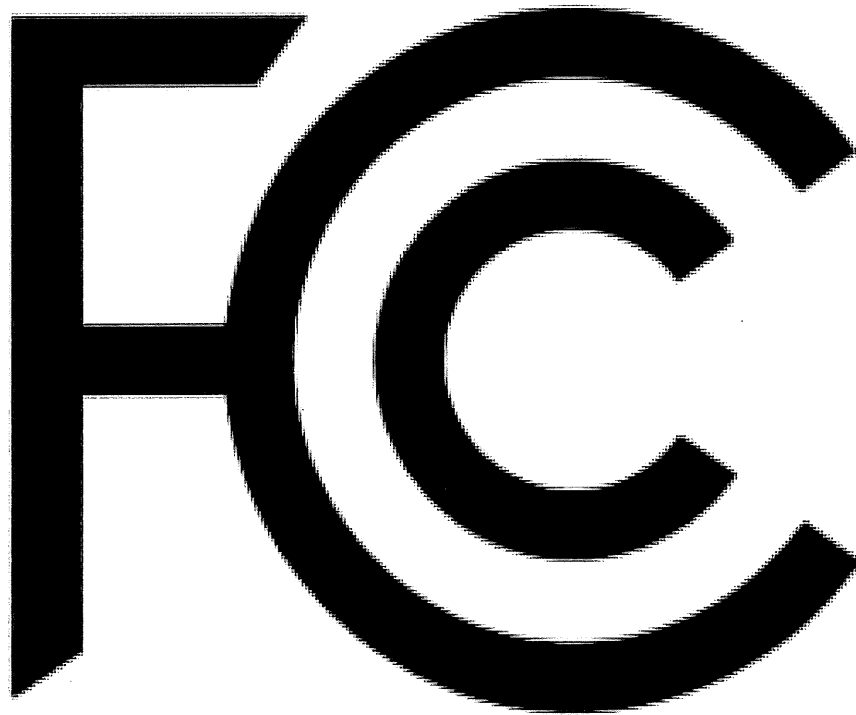
Aaron P. Shainis
President, Shainis & Peltzman, Chartered
Counsel to Geo Broadcast Solutions, LLC

cc: Chairman Ajit Pai
Alison Nemeth, Esq.
James Bradshaw
Robert Gates
Larry Hannif-Ali,
Christopher Devine
Andrew Barrett
Bert Goldman
William Hieatt

http://www.insideradio.com/free/radio-lines-up-in-support-for-booster-proposal/article_412c2bd4-80b5-11e7-abd2-1f275c0ec408.html

Radio Lines Up In Support For Booster Proposal.

Aug 14, 2017



Translator or Booster: What's the Difference?

TRANSLATORS:

Translator stations simultaneously rebroadcast the signal of a primary AM or FM station on a different frequency. Those translator stations that provide service within the primary station's protected service area are classified as "fill-in" stations. The maximum effective radiated power permitted for a translator station is 250 watts. Translators rebroadcasting a commercial AM or FM station may be authorized on 92.1 FM to 107.9 FM, while a translator rebroadcasting a noncommercial station may use any frequency from 88.1 FM to 107.9 FM. Fill-in translators can be owned by the main station or by an independent entity.

BOOSTERS:

Booster stations are essentially "fill-in" translator stations on the same frequency as the main station. Booster stations must be owned by the licensee of the primary FM station. The maximum effective radiated power for a booster station is 20% of the main station's maximum class power.

Source: FCC

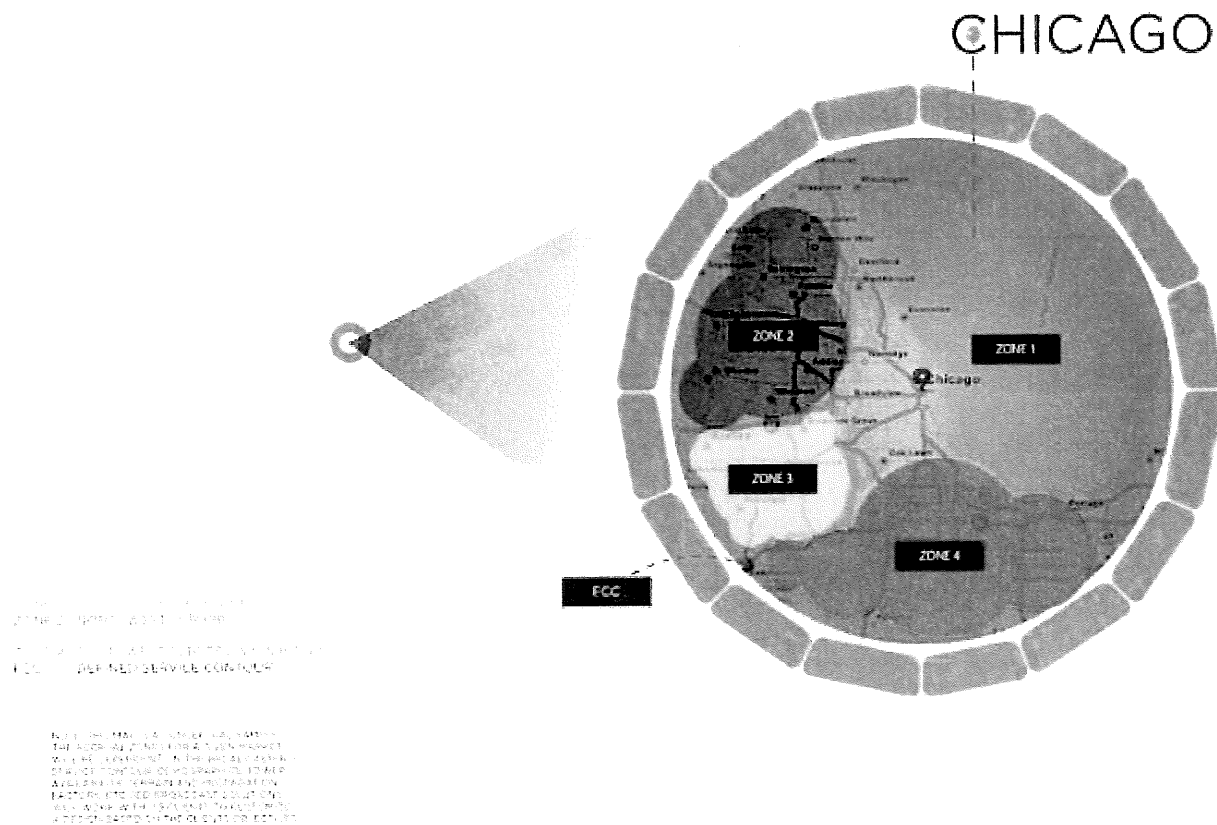
Broadcasters are lining up behind a proposal to allow FM booster stations to originate programming. The idea—floated by the law firm Shainis & Peltzman as part of the Federal Communications Commission's wide-ranging review of its media regulations—has drawn more support than any other proposed change.

In allowing the idea to be advanced, the firm says it would enable FMs to provide "targeted 'hyperlocal' programming" directed to specific portions of their service area, something it notes fits rights into the FCC's longstanding goal to improve broadcast localism. It also says it would help put the radio industry on firmer financial ground.

If the idea sounds familiar, it may be because Shainis & Peltzman first proposed such a system be allowed in 2012 on behalf of its client Geo Broadcast Solutions, which developed a system to use several boosters around a main transmitter to produce geo-targeted programming. The so-called ZoneCasting technology has already been used in three FCC sanctioned field tests. Unlike FM translators, which simultaneously rebroadcast the signal of a primary AM or FM station on a different frequency, booster stations essentially "fill in" translator stations on the same frequency as the main station. Under FCC rules, booster stations' coverage is also restricted to the protected service contour of the primary station.

With the use of 11 booster signals, Alpha Media's rock WII-FM Milwaukee (95.1) was the site of a three-month test last autumn using ZoneCasting and director of engineering Mike Everhart tells the FCC it made him a believer. Everhart did, however, stop short of saying Alpha would use the technology on any of its 242 stations, adding that FCC rules preventing technological changes do little to serve the

public interest. "We believe that a radio station should be allowed to use its signal to the maximum benefit to the station and the public, as long as it does not violate indecency rules or create interference," Everhart said.



Salt Lake City market regional Mexican “La Gran D” KDUT (102.3) is today owned by Alpha Media but when ZoneCasting’s first field test was conducted using the station five years ago it was owned by Bustos Media. With a company that offers ethnic programming in a variety of languages, CEO Amador Bustos sees possibilities for hyper-targeting listeners. “I believe adoption of this minor rule change will turn into a big benefit for all concerned, without any negative impact to any other industry players,” he told the FCC.

Edgewater Broadcasting, which operates more than 100 religious-formatted stations across the country, sees similar deployment of the technology that it says would allow operators to make their content more relevant to listeners. “The use of different programming on our stations’ booster would allow us to maximize our message using different languages directed to certain areas and different messages where appropriate,” Edgewater executive director Steven Atkin said in a filing.

Spanish Broadcasting System is also among the companies throwing its support behind the FCC allowing the proposal to move on to a formal rulemaking review. “I have no doubt that the system used to deliver different programming on multiple boosters works and strongly support the new technology,” SBS VP of engineering Erik Peterson told the FCC.

But it's not just the large companies that came out in support of the rule change. Chicago low-power station operator Urban Media One said its R&B "J-99 Jams" WJPC-LP could offer highly localized content in a way no other station could.

Radio's financial backers even weighed in. Monroe Capital, which has been lending money to radio companies for two decades, tells the FCC even if it's only for spot breaks, such technology would help the industry overcome recent revenue challenges by attracting advertisers who may avoid radio since they don't target an entire metro area. "This would enable radio stations and their advertisers to geographically target the commercials, allowing radio stations to compete with TV, cable, internet and mobile," Monroe Capital president/CEO Ted Koenig tells the FCC in a filing.

The last time Geo Broadcast Solutions met with the FCC to discuss its ZoneCasting proposal was in July 2013 and it has since submitted the result of its three field tests to the agency. "The results demonstrate that the technology works," the company tells the FCC. It hopes that evidence, as well as the backing of a range of broadcasters, will be enough to help kick-start its effort to have the FCC rule changes in order to allow the technology to be used.



MaxxCasting | ZoneCasting

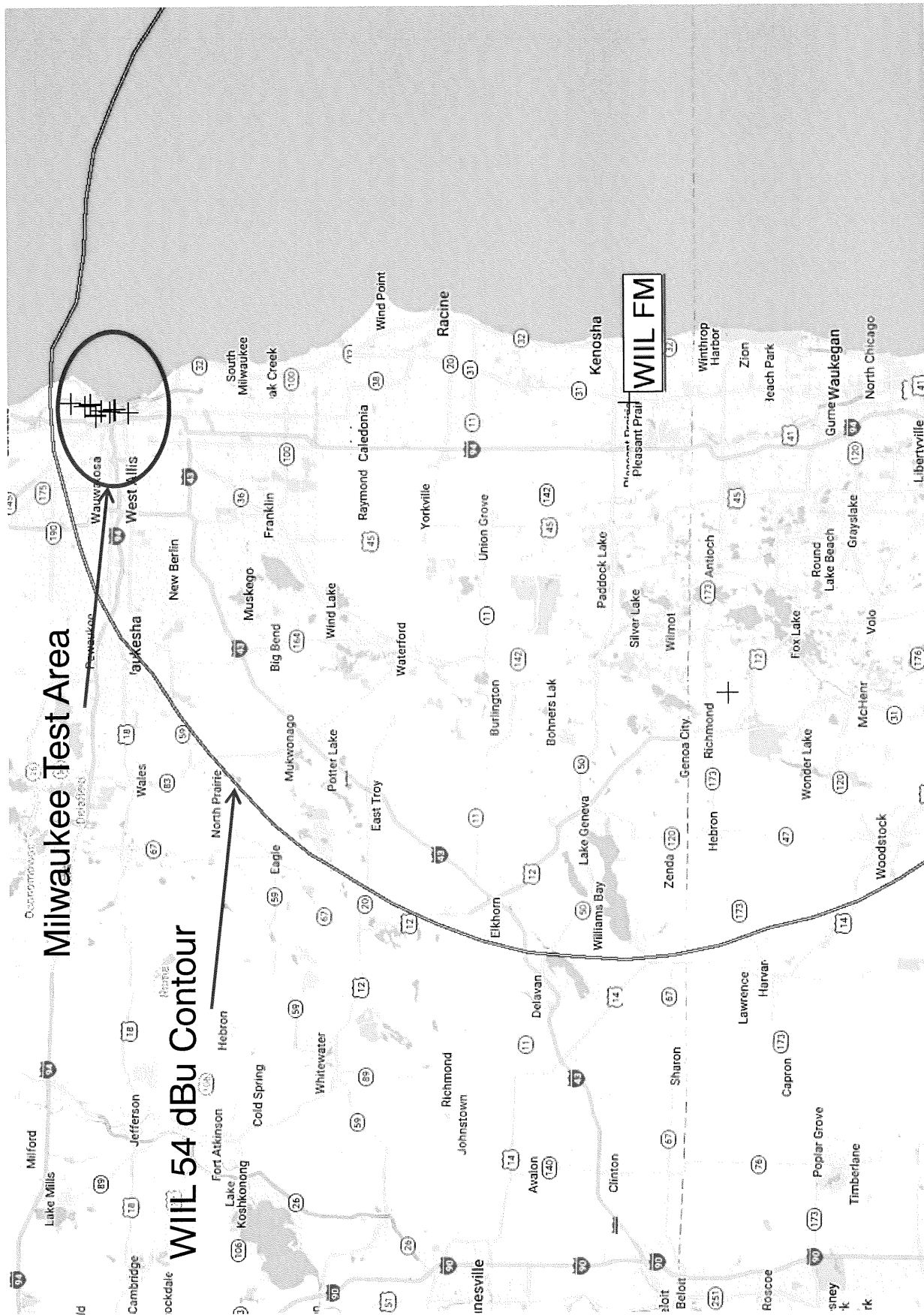
Zone Audio Transitions

WILL Channel: 236B 95.1 MHz

Union Grove, Wisconsin

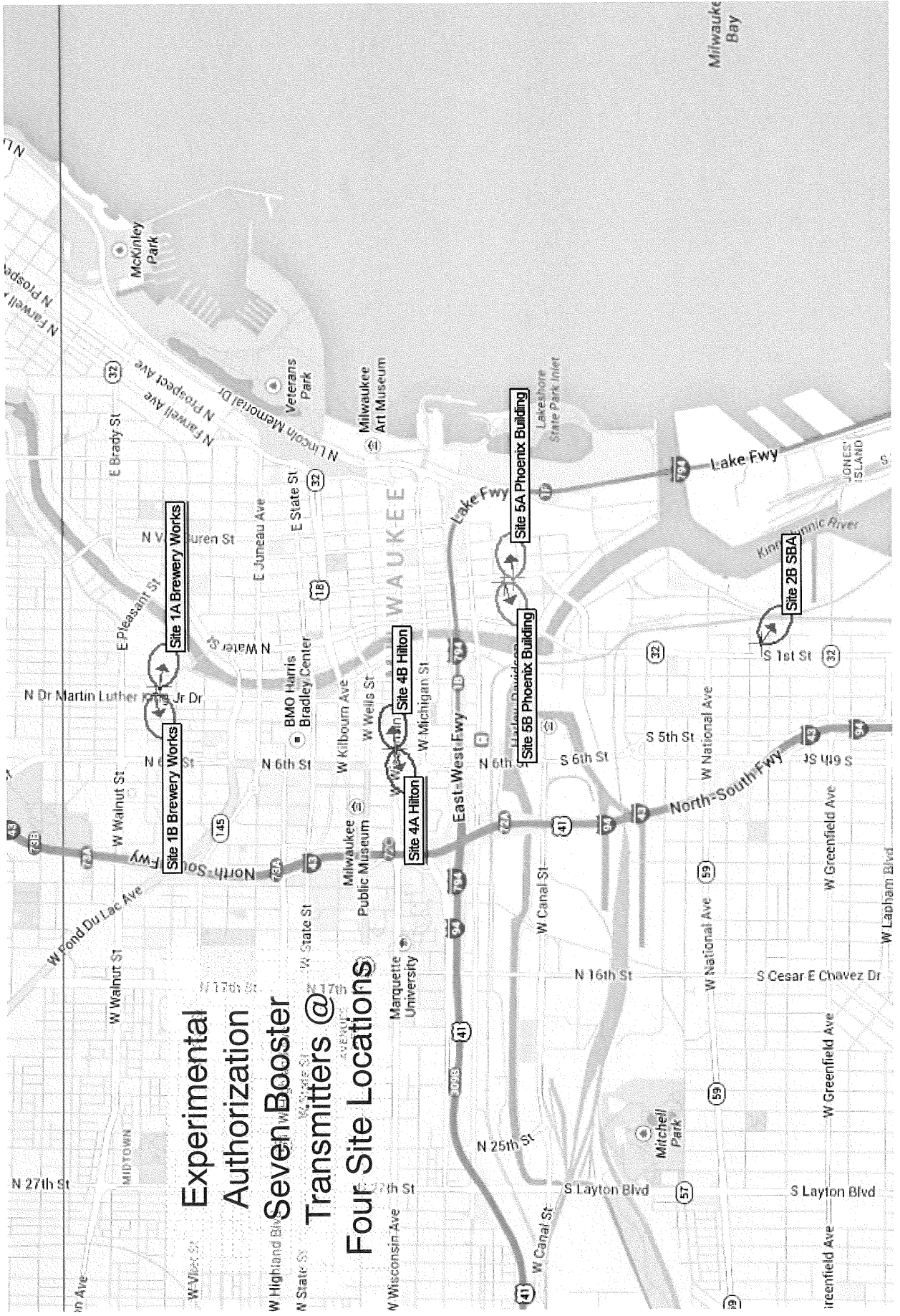
Field Tests Performed 12/2017

WIL FM Service Contour



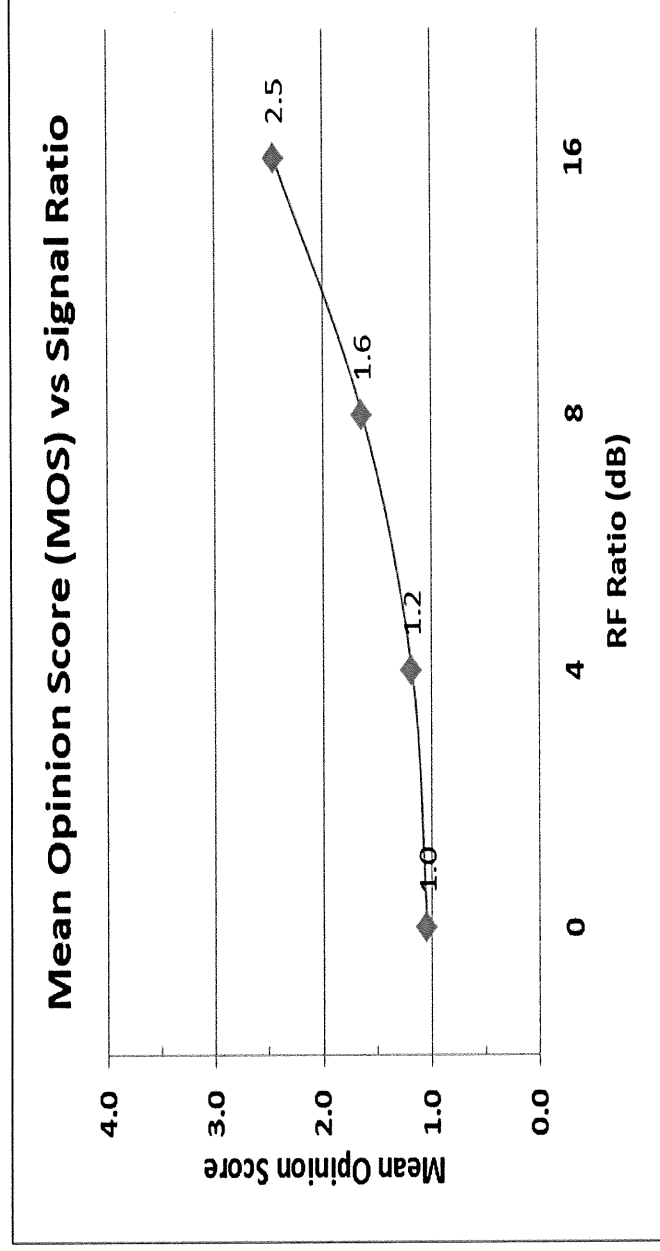
WILL Booster Transmission Locations

**Experimental
Authorization
Seven Booster
Transmitters @
Four Site Locations**

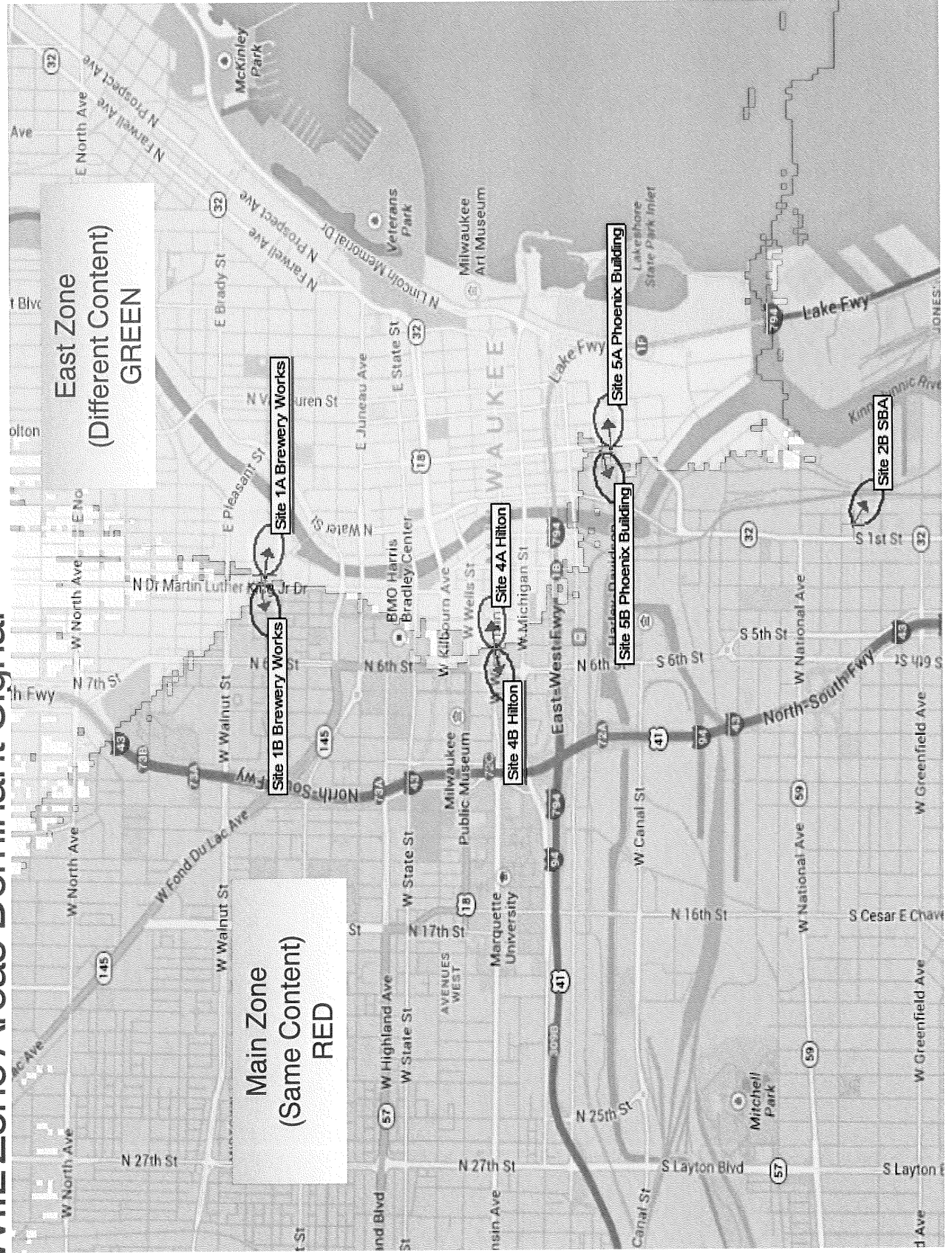


WILL Zone Area Example

- A “zone” is a geographical area where the booster audio content is different than the primary transmit site audio
- Physically determined by the receiver “capture” effect
- A “transition area” occurs where signal powers are less than 16 dB for analog monophonic FM
 - Audio sounds like multipath interference
 - HD digital transition performance considerably better



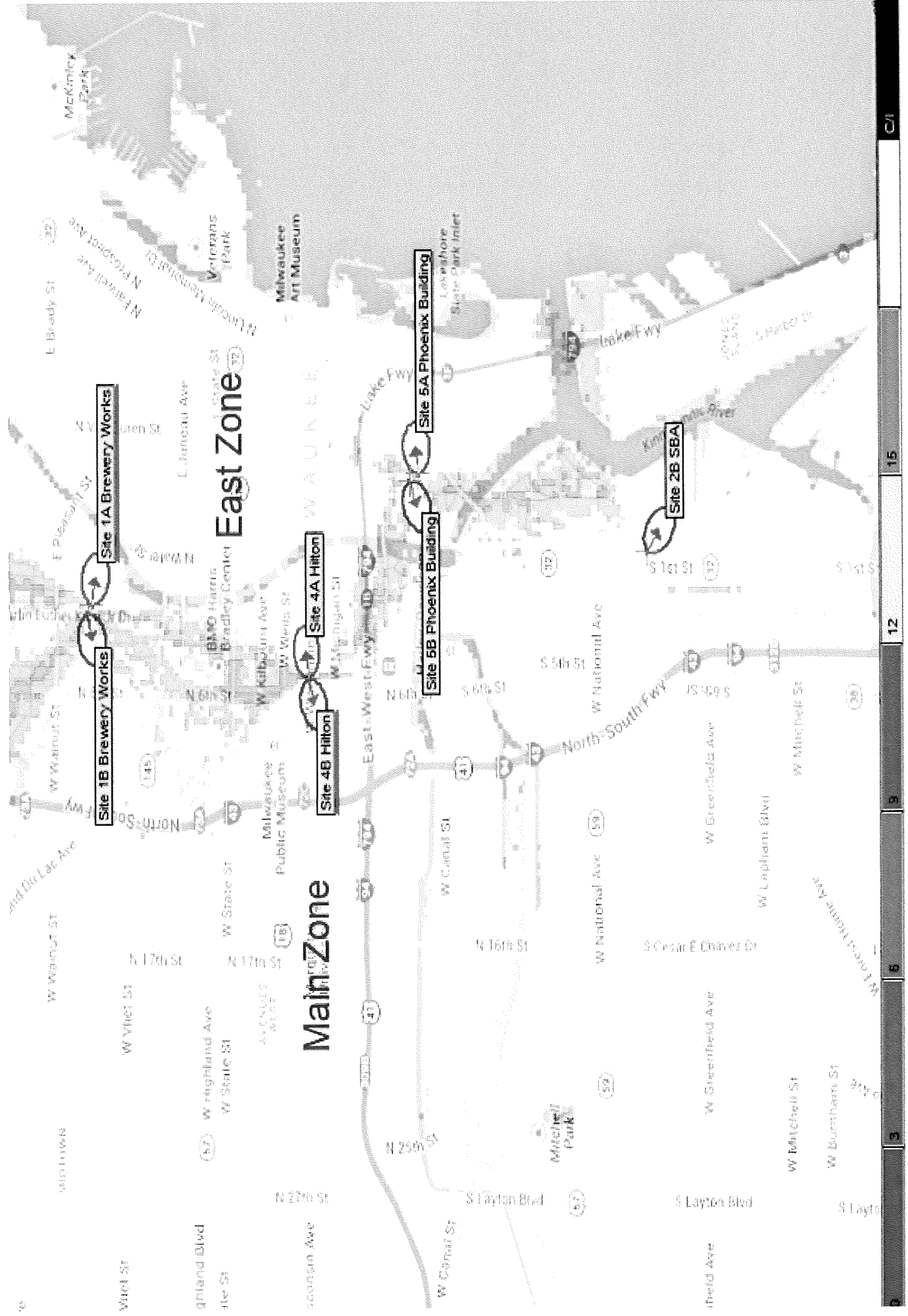
WILL Zone Areas Dominant Signal



WIIJ Booster Transmit Antenna Configuration



WIIL Zone "Transition Area" Map



Transition Area
to Public Service Announcement
Duration 10 seconds



Route Begin
Main Zone



Route Begin

Route End

Transition Area

Main Zone

to Public Service Announcement

Duration 7 seconds

Site 4A Hilton

Site 4B Hilton

Site 5A Phoenix Building

Site 5B Phoenix Building

Route End East Zone

Discovery World

Milwaukee Art Museum

Milwaukee River

Marquette University

Harley-Davidson Museum

North-South Fwy

East-West Fwy

Wells St

W Wisconsin Ave

W Clybourn St

W Vernon Ave

W National Ave

W Bruce St

W Pierce St

W 1st St

W 2nd St

W 3rd St

W 4th St

W 5th St

W 6th St

W 7th St

W 8th St

W 9th St

W 10th St

W 11th St

W 12th St

W 13th St

W 14th St

W 15th St

W 16th St

W 17th St

W 18th St

W 19th St

W 20th St

W 21st St

W 22nd St

W 23rd St

W 24th St

W 25th St

W 26th St

W 27th St

W 28th St

W 29th St

W 30th St

W 31st St

W 32nd St

W 33rd St

W 34th St

W 35th St

W 36th St

W 37th St

W 38th St

W 39th St

W 40th St

W 41st St

W 42nd St

W 43rd St

W 44th St

W 45th St

W 46th St

W 47th St

W 48th St

W 49th St

W 50th St

W 51st St

W 52nd St

W 53rd St

W 54th St

W 55th St

W 56th St

W 57th St

W 58th St

W 59th St

W 60th St

W 61st St

W 62nd St

W 63rd St

W 64th St

W 65th St

W 66th St

W 67th St

W 68th St

W 69th St

W 70th St

W 71st St

W 72nd St

W 73rd St

W 74th St

W 75th St

W 76th St

W 77th St

W 78th St

W 79th St

W 80th St

W 81st St

W 82nd St

W 83rd St

W 84th St

W 85th St

W 86th St

W 87th St

W 88th St

W 89th St

W 90th St

W 91st St

W 92nd St

W 93rd St

W 94th St

W 95th St

W 96th St

W 97th St

W 98th St

W 99th St

W 100th St

W 101st St

W 102nd St

W 103rd St

W 104th St

W 105th St

W 106th St

W 107th St

W 108th St

W 109th St

W 110th St

W 111th St

W 112th St

W 113th St

W 114th St

W 115th St

W 116th St

W 117th St

W 118th St

W 119th St

W 120th St

W 121st St

W 122nd St

W 123rd St

W 124th St

W 125th St

W 126th St

W 127th St

W 128th St

W 129th St

W 130th St

W 131st St

W 132nd St

W 133rd St

W 134th St

W 135th St

W 136th St

W 137th St

W 138th St

W 139th St

W 140th St

W 141st St

W 142nd St

W 143rd St

W 144th St

W 145th St

W 146th St

W 147th St

W 148th St

W 149th St

W 150th St

W 151st St

W 152nd St

W 153rd St

W 154th St

W 155th St

W 156th St

W 157th St

W 158th St

W 159th St

W 160th St

W 161st St

W 162nd St

W 163rd St

W 164th St

W 165th St

W 166th St

W 167th St

W 168th St

W 169th St

W 170th St

W 171st St

W 172nd St

W 173rd St

W 174th St

W 175th St

W 176th St

W 177th St

W 178th St

W 179th St

W 180th St

W 181st St

W 182nd St

W 183rd St

W 184th St

W 185th St

W 186th St

W 187th St

W 188th St

W 189th St

W 190th St

W 191st St

W 192nd St

W 193rd St

W 194th St

W 195th St

W 196th St

W 197th St

W 198th St

W 199th St

W 200th St

W 201st St

W 202nd St

W 203rd St

W 204th St

W 205th St

W 206th St

W 207th St

W 208th St

W 209th St

W 210th St

W 211st St

W 212nd St

W 213rd St

W 214th St

W 215th St

W 216th St

W 217th St

W 218th St

W 219th St

W 220th St</

Transition Area
to Public Service Announcement
Duration 7 seconds

Route End
East Zone

Site 4B Hilton

Site 5B Phoenix Building

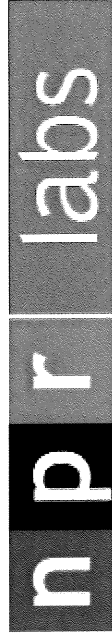
Site 5A Phoenix Building

NPR Labs (National Public Radio) Research

- Partnership Goal:
 - Create Standardized System Design Criteria for Geo Broadcast Solutions: MaxxCasting™ and ZoneCasting™ Networks
- RF Lab Simulations of Main Transmitter and MaxxCasting™ ZoneCasting™ Configurations
- 19,000 Audio samples evaluated by 80+ listeners- one of the largest studies ever for analog FM radio- Towson University by Dr. Ellyn Sheffield
- Design standards for acceptable interference thresholds developed for simulcast and CoChannel transmission
 - 16 dB C/I for monophonic FM ZoneCasting™
 - See Technical Papers and Reports



NPR is a nationally acclaimed, non-profit multimedia organization and the leading provider of non-commercial news, information and entertainment programming to the American public. Each week 26 million people listen to NPR programs and newscasts on 975 public radio stations nationwide. NPR Labs was established on October 1, 2005 as America's only not-for-profit broadcast technology research and development center.



ZoneCasting
GEO BROADCAST SOLUTIONS

Ex Parte Comments
Geo Broadcast Services
Re: Petition for Rulemaking RM No. 11659

1) These comments are being filed in conjunction with an *Ex Parte* meeting with Mr. James Bradshaw on January 10, 2018 at the FCC offices. In the meeting, representatives of Geo Broadcast Services (GBS) are providing additional data to Mr. Bradshaw and FCC staff in support of a request to modify 47 C.F.R. § 74.1231(i) to allow for booster stations to originate programming (or broadcast different audio content). The request appeared on an April 23, 2012 Public notice, see Public Notice, Consumers and Governmental Affairs Bureau, Reference Information Center, Petitions for Rulemaking Filed, Rpt. No. 2949. Many comments were filed, all of which were in support of the Petition. The Petition remains pending.

2) The proposed Petition would enable FM stations to provide targeted programming directed to specific portions of their service area, thereby furthering the Commission's longstanding localism goals¹.

3) Different audio content for FM booster signals is allowed on the digital HD2 or HD3 channels or Radio Broadcast Data System (RDBS) subcarrier. It is not expressly allowed on the primary analog or digital HD1 channel. This is a basis for the GBS Petition.

4) In November 2017 GBS had a meeting with former FCC Commissioner Andrew Barrett, FCC Council Arron Shainis and FCC Chairman Ajit Pai and his staff. The primary concern with broadcasting different audio content on the booster was interference. Thus, the main purpose of this meeting is to provide additional information on such interference.

5) GBS has performed booster tests with different audio content under FCC experimental authorizations on three occasions. These tests occurred in Salt Lake City, Utah in mountainous terrain (with KDUT in 2010), in Sebring, Florida in flat terrain (with WWOJ in 2011), and in Milwaukee, Wisconsin in an urban mobile environment (with WIIL in 2016). In each instance the test results and recorded audio have been submitted to the FCC by the respective broadcaster.

6) At the time of the most current rules (1987) the knowledge base was relatively minimal regarding avoiding self-interference to the primary FM station from the booster(s). The FCC rules properly noted "the licensee is in the best position to determine the appropriate balance between increased coverage from a booster and increased interference

¹ It would enable a station to target disparate information to listeners simultaneously in various parts of a stations service area. For example, a station could target an emergency warning where it would have the most immediate and direct impact to the listeners in the directly affected locale.

to the signal of the full-service station and there is adequate incentive for licensees to seek to avoid interference to areas served by their primary station's signal.”²

7) Since the 1987 rules, many stations have constructed boosters with mixed results, and those with high levels of interference have ceased booster operation. This illustrates the “self-policing” aspect of self-interference of the FCC rules. It should be specifically noted that the rules of interference to other FM broadcast stations have been quite successful and that the GBS Petition does not request any change to this aspect of the rules. The result is no increase in interference to other broadcast stations.

8) In addition to the experimental field authorizations, GBS, NPR Labs, Towson University, manufacturers and associated broadcasters have invested significant time, resources, and publications to the industry on this subject. It has been revealed that when received signal delays between the primary transmitter site and the booster site reach 50 microseconds or more the interference is comparable to having different audio content. This amount of delay is quite common in many booster implementations, in effect broadcasting “different” audio on boosters is already occurring and allowed in the rules.

9) It is important to note that interference in this case is *subjective*³ as stated in the field trial reports. GBS commissioned the largest known FM listening study in simulcast to develop standards based on subjective interference. These tests were developed and published by NPR Labs and Towson University⁴. The results of this study, along with GBS field trials, serve as a basis for determining interference design parameters.

10) Because of technical advancements to reduce interference to the primary station, it is believed that the requirement to program the same audio on the booster as the primary site has outlived its usefulness. As noted in the Docket 87-13, broadcasters should be able to determine what constitutes too much interference within their own protected contour and if the public can be better served by using different programming then this should be allowed. It has been shown that the broadcasters will self-regulate interference and is self-evident.

² FCC MM Docket No 87-13, Paragraph 28

³ ITU-R BS.1284-1 General methods for the subjective assessment of sound quality

⁴ The methodology for laboratory and listener testing of both ZoneCasting and MaxxCasting is described in “Design Parameters for FM Signal Repeaters Based on Listener Testing”, Dr. Ellyn Sheffield, Melinda Hines and John Kean, NAB 2013 Broadcast Engineering Conference Proceedings.

11) The GBS design and field tests reduce interference to a “Non-Harmful”⁵ level such that they would be commercially deployed by the broadcaster, and this will not expand interference to other FM stations as this is already covered in the rules. GBS seeks modification of the Commission’s rules to allow FM booster stations to broadcast different audio or a waiver to that effect.

⁵ In “The Office of Engineering and Technology seeks comment on spectrum policy recommendations that the FCC’s Technological Advisory Council (TAC)” (ET Docket No. 17-34, December 1, 2017). “Principle #2 states that all services should plan for non-harmful interference from nearby signals, now and in the future. The TAC posits that some interference can be expected and tolerable (non-harmful interference), up to a limit (interference limit).”. GBS believes that interference in its field trials can be designated as non-harmful.