

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	File Nos. _____
Request of Progeny LMS, LLC)	
)	WT Docket No. 12-202
For Waiver and Limited Extension of Time)	

**AMENDMENT AND RESTATEMENT TO
REQUESTS FOR WAIVER AND
EXTENSION OF TIME**

Bruce A. Olcott
Preston N. Thomas
Jones Day
51 Louisiana Ave. NW
Washington, D.C. 20001
(202) 879-3630

Its Attorneys

March 27, 2015

SUMMARY

Following the adoption of the Commission's indoor wireless location accuracy rules, Progeny seeks to consolidate, restate, and streamline its requests for waiver and extension of the construction milestone deadlines for its M-LMS licenses.

First, in response to guidance from Commission staff, Progeny seeks to amend its pending first extension request regarding the initial milestone for its 40 largest Economic Areas ("EAs"). Progeny clarifies that it sought extension of its initial milestone deadline until the Commission granted authority for Progeny to begin commercial operation using its M-LMS network. Grant of this extension is warranted because Progeny completed construction of its network in these 40 EAs and therefore was not warehousing spectrum. Furthermore, Progeny refrained from commencing commercial operations because it was complying with a Commission directive and was therefore subject to circumstances beyond Progeny's control. In connection with this amendment to its extension request, Progeny requests several waivers to accommodate the procedural circumstances resulting from Progeny's supplemental extension request and duplicate milestone notifications.

Second, Progeny seeks to amend its pending second extension request regarding its remaining milestones. Progeny proposes to conform its construction deadlines to the five, six, and eight year timeline set out in the Indoor Location Accuracy Order. In addition, Progeny requests a unified single milestone deadline for each of its 75 licensed EAs that were not covered by Progeny's initial milestone showing for its top 40 EAs.

Extension on this proposed schedule is warranted because the Indoor Location Accuracy Order directly affects the market demand and use case for Progeny's E911 indoor location service. The public interest would not have been served by requiring Progeny to have

constructed a network in advance of the rules because such a network would not have been responsive to the Commission's requirements or the needs of wireless carrier customers. Linking Progeny's M-LMS construction deadlines to the rules going forward will ensure that Progeny can expand its coverage at the rate prescribed by the Commission, public safety, and its carrier customers. Such an extension is warranted in part because Progeny remains the only location service that has been demonstrated in industry-wide testing to offer horizontal and vertical location capabilities sufficient to meet the Commission's indoor location accuracy requirements.

TABLE OF CONTENTS

I.	THE COMMISSION SHOULD EXTEND PROGENY’S INITIAL MILESTONE DEADLINE FOR ITS TOP 40 ECONOMIC AREAS UNTIL SHORTLY AFTER THE COMMISSION ISSUED ITS AUTHORITY FOR PROGENY TO BEGIN COMMERCIAL OPERATIONS	3
A.	Progeny’s Initial Request for a 90 Day Extension Was Justified by the Commission’s Policy of Using its Milestone Rules to Ensure that Licensee are Proceeding With Construction of Their Networks	6
B.	Progeny’s Supplemental Request for an Extension Until the Commission Granted Authority to Begin Commercial Operations Was Justified Due to Circumstances Beyond Progeny’s Control	8
C.	The Commission is Justified in Granting Certain Waivers of its Milestone Extension and Electronic Notification Filing Requirements	11
II.	THE COMMISSION SHOULD EXTEND PROGENY’S REMAINING MILESTONES TO ALIGN ITS BUILDOUT WITH THE COMMISSION’S INDOOR LOCATION ACCURACY MILESTONES	14
A.	The Needs of Public Safety Would Not Have Been Served by Requiring Progeny to Begin Construction Prior to the Issuance of the Indoor Location Accuracy Order.....	18
B.	Aligning Progeny’s M-LMS Construction Milestones with the Wireless Location Accuracy Rules Will Permit Progeny to Meet the Needs of Public Safety and Wireless Carriers	20
C.	The Adoption of a Unified Milestone Deadline for Progeny’s Remaining EAs Would Serve the Public Interest.....	25
III.	CONCLUSION.....	27
	Attachment A – All Progeny Call Signs	
	Attachment B – Top 40 EAs (First Milestone Extension until June 21, 2013)	
	Attachment C – 24 EAs (Second Milestone Extension until April 3, 2020)	
	Attachment D – 22 EAs (Second Milestone Extension until April 3, 2021)	
	Attachment E – 69 EAs (Extension until April 3, 2023)	

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	File Nos. _____
Request of Progeny LMS, LLC)	
)	WT Docket No. 12-202
For Waiver and Limited Extension of Time)	

**AMENDMENT AND RESTATEMENT TO
REQUESTS FOR WAIVER AND
EXTENSION OF TIME**

Progeny LMS, LLC (“Progeny”), by its attorneys, hereby submits this filing to amend its pending requests for wavier and extension of time that were filed on June 21, 2012¹ (“First Extension Request”) and July 17, 2014² (“Second Extension Request”) regarding the construction deadlines³ for its 900 MHz Multilateration Location and Monitoring Service (“M-LMS”) Economic Area (“EA”) licenses.⁴ To clarify and streamline this proceeding, this request

¹ Request of Progeny LMS, LLC For Waiver and Limited Extension of Time, File Nos.0005273211 et al. (Filed June 21, 2012) (“*First Extension Request*”) (seeking to extend the first milestone deadline for all of Progeny’s M-LMS licenses, and also seeking to extend the second milestone deadline for all but Progeny’s licenses in its top 40 EAs).

² Request of Progeny LMS, LLC For Waiver and Extension of Time, File Nos. 0006383272 et al. (Filed July 17, 2014) (“*Second Extension Request*”) (seeking to revise Progeny’s pending request to extend the first milestone for all but Progeny’s top 40 EAs, seeking an extension of the second milestone for its licenses in its top 40 EAs, and seeking to revise its extension request for its second milestone in its remaining 75 EAs).

³ 47 C.F.R. § 90.155(d).

⁴ Attachments A - E list the licensed call signs that are addressed by this Petition.

addresses all of Progeny's licenses and milestones, and supersedes all pending requests pertaining to the waiver and extension of its M-LMS construction deadlines.

First, in response to guidance from Commission staff, Progeny seeks to amend its First Extension Request with respect to the first milestone for its 40 largest Economic Areas ("EAs"). Specifically, Progeny seeks to clarify that it requested an extension of its initial milestone deadline until shortly after the Commission granted authority for Progeny to begin commercial operations using its M-LMS network. The Commission granted authority on June 6, 2013 and Progeny promptly notified the Commission on June 21, 2013 that it had begun commercial operations in its top 40 EAs. Progeny therefore requests herein that its initial milestone deadline for its top 40 EAs be extended to the June 21, 2013 filing date.⁵

Second, Progeny seeks to amend its Second Extension Request for its remaining milestones to conform Progeny's construction deadlines to the timeline set out in the Commission's recent Fourth Report and Order concerning wireless E911 indoor location accuracy ("Indoor Location Accuracy Order").⁶ This order directly affects the market demand and use case for Progeny's E911 indoor location service, and linking Progeny's M-LMS construction deadlines to the indoor location deadlines will further the Commission's public safety goals as well as promoting use of M-LMS spectrum.

⁵ The Commission's ULS filing system will not accept a request for extension to a date in the past. Therefore, the electronic version of this application requests an extension until June 21, 2015. Alternatively, Progeny requests that an extension of its initial milestone for its top 40 EAs be granted to a date that is 60 days after an order is released in response to this filing.

⁶ Wireless E911 Location Accuracy Requirements, PS Docket No. 07-114, Fourth Report and Order, FCC 15-9 (2015) ("*Indoor Location Accuracy Order*").

I. THE COMMISSION SHOULD EXTEND PROGENY'S INITIAL MILESTONE DEADLINE FOR ITS TOP 40 ECONOMIC AREAS UNTIL SHORTLY AFTER THE COMMISSION ISSUED ITS AUTHORITY FOR PROGENY TO BEGIN COMMERCIAL OPERATIONS

On June 21, 2012, Progeny timely filed its First Extension Request seeking extension and waiver of its July 19, 2012 milestone deadline for each of its M-LMS licenses.⁷ With respect to Progeny's licenses in its largest 40 EAs, Progeny sought an extension of 90 days for its initial milestone.⁸ As Progeny explained in its First Extension Request, such an extension was need for two reasons.

First, although Progeny completed its initial network construction and filed build out notifications for 27 of its top 40 EAs by the July 19, 2012 milestone deadline,⁹ Progeny required a brief additional period to complete construction and file build out notifications in the remaining 13 heavily urban EAs in its top 40 licensed areas.¹⁰ Second, although Progeny was constructing its network and beginning operations, the Commission had precluded Progeny from providing commercial service in any of its EAs until the Commission completed its review of Progeny's Part 15 test demonstration.¹¹ When Progeny filed its First Extension Request, the Commission

⁷ *First Extension Request* at 2.

⁸ *Id.*

⁹ *See* Construction Notifications of Progeny, LMS, LLC, File Nos. 0005337947-0005338058 et al. (non-continuous file numbers), filed Aug. 3, 2012.

¹⁰ *See* Construction Notifications of Progeny, LMS, LLC, File Nos. 0005337965-0005650656 et al. (non-continuous file numbers), filed Sep. 12, 2012 – Feb. 14, 2013.

¹¹ *First Extension Request* at 2 (*citing* Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules, Order, WT Docket No. 11-49, DA 11-2036, ¶ 29 (rel. Dec. 20, 2011) (“*M-LMS Waiver Order*”)).

was expected to grant this commercial operating authority to Progeny shortly.¹² In reality, however, the Commission granted authority for Progeny to begin commercial operations on June 6, 2013, approximately one year later.¹³

As a result of this delay and at the request of Commission staff, Progeny filed a supplement to its First Extension Request on November 21, 2012 (“Supplement”) noting that it had completed construction within the specified 90 day period in 39 of its top 40 EAs (the fortieth EA, Orlando, was further delayed by a nesting eagle), but the Commission still had not granted authority for Progeny to begin commercial service.¹⁴ Progeny therefore requested in its Supplement that the Commission extend Progeny’s initial milestone in its top 40 EAs until 60 days after the Commission granted commercial authority to Progeny.¹⁵

On June 6, 2013, the Commission granted authority for Progeny to begin commercial operations.¹⁶ In that order, the Commission directed Progeny to file by June 21, 2013 a formal notification identifying each of the EAs where Progeny had completed its initial buildout of its

¹² See *id.* at 2 (noting Progeny’s expectation that it would receive Commission consent to begin commercial operations “shortly”).

¹³ Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules Progeny LMS, LLC Demonstration of Compliance with Section 90.353(d) of the Commission’s Rules, WT Docket No. 11-49, Order, FCC 13-78 (June 6, 2013) (“*Progeny Commercial Service Order*”).

¹⁴ See Letter from Bruce A. Olcott, Counsel, Progeny LMS, LLC to Marlene H. Dortch, Secretary, Federal Communications Commission, Regarding Supplement to Progeny Request for Waiver and Limited Extension of Time, FCC File Numbers 0005273211 et al., at 2 (November 21, 2012).

¹⁵ *Id.* at 2 (Progeny also requested until March 30, 2013 to complete construction and begin operations in Orlando).

¹⁶ *Progeny Commercial Service Order*, ¶ 1.

network and was providing commercial operations.¹⁷ Progeny filed this notice by the specified deadline indicating that, in accordance with the milestone requirements for M-LMS licensees, Progeny had completed construction of its initial network in each of its top 40 EAs and had placed into operation a sufficient number of base stations that utilize multilateration technology to provide multilateration location service to at least one-third of the population in each EA.¹⁸ Progeny later used FCC Form 601 to amend its initial buildout notifications,¹⁹ formally updating the Commission's records to reflect that, as of June 21, 2013, Progeny was authorized to provide commercial service and Progeny had satisfied its initial buildout milestones for its top 40 EAs.²⁰

Given the fact that Progeny formally notified the Commission on June 21, 2013 that it had satisfied its initial build out requirement in each of its top 40 EAs, Progeny requests that the Commission grant an extension of Progeny's initial milestone deadline for its top 40 EAs until the June 21, 2013 filing date.²¹ Such an extension is justified for several reasons.

¹⁷ *Id.*, ¶ 34.

¹⁸ Letter from Bruce A. Olcott, Counsel, Progeny LMS, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, Regarding Notification of Completion of Initial Buildout in 40 Economic Areas and Establishment of Website and Toll-Free Help Desk, WT Docket No. 11-49 (Jun. 21, 2013).

¹⁹ For the Orlando EA, where completion of construction was delayed significantly by a nesting eagle, the buildout notification that identifies June 21, 2013 as the milestone compliance date was filed as an initial notification and not as an amendment to a previous notification. *See* Construction Notifications of Progeny, LMS, LLC, File Nos. 0006728192 and 0006728198 (Mar. 27, 2015).

²⁰ *See supra* notes 9, 10 and 19 for FCC file numbers for buildout notifications and amendments.

²¹ If, however, the Commission concludes that Progeny's June 21, 2013 notice and subsequent amendments to its FCC Form 601 buildout notifications were inadequate to comply with the Commission's buildout notification requirements, Progeny requests that the Commission grant an extension of Progeny's initial milestone deadline for its top 40 EAs until 60 days after an extension order is issued in response to this petition.

First, as explained in a later section of its request, Progeny is seeking to provide critically needed indoor location services to support E911 emergency response. Grant of the requested extensions would enable Progeny to make that service available to public safety and wireless carriers. Second, Progeny's June 21, 2012 request for a 90 day extension to complete construction in 13 heavily urban EAs was fully consistent with the Commission's policy of enforcing its milestone requirements in a manner that ensures that spectrum licensees are proceeding with the construction of their networks. Third, Progeny's November 21, 2012 Supplement requesting an extension beyond 90 days until the Commission granted authority for Progeny to begin commercial operations was justified because this further delay was beyond Progeny's control. In seeking this extension, Progeny also requests waiver of certain of the Commission's extension and build out notification filing requirements to address the unique circumstances of this proceeding.

A. Progeny's Initial Request for a 90 Day Extension Was Justified by the Commission's Policy of Using its Milestone Rules to Ensure that Licensee are Proceeding With Construction of Their Networks

As explained in Progeny's First Extension Request, Progeny has been making substantial investment and progress in developing and constructing its M-LMS network.²² After protracted difficulties attempting to procure M-LMS equipment, Progeny undertook to design its own custom hardware and arranged for the fabrication of purpose-built M-LMS beacons, the first of which OET certified on February 3, 2012.²³ Progeny, working with its sister company, NextNav

²² *First Extension Request* at 11-12.

²³ See Grant of Equipment Authorization, Certification, to NextNav LLC, FCC Identifier A4P-100-0004-05 (Feb. 3, 2012).

LLC,²⁴ has also worked closely with handset and chip manufacturers to incorporate Progeny's technology into user terminals. Progeny has been active in standard setting bodies, such as the Open Mobile Alliance ("OMA"), the Alliance for Telecommunications Industry Solutions ("ATIS"), and the Third Generation Partnership Project ("3GPP"), to establish open standards for Progeny's location technology, enabling its development and use by any party.

Progeny also constructed a full commercial-grade M-LMS location network in the San Francisco Bay Area, and completed construction of its initial networks in another 26 EAs prior to its July 19, 2012 deadline for making M-LMS service available to at least one third of the population in each EA. Although Progeny required additional time to complete construction of its initial networks in the remaining 13 of its top 40 EAs, these brief periods – ranging from a few weeks to eight months in Orlando – are consistent with Commission precedent that its milestone rules should be used to ensure that licensees are actively proceeding with the construction of their networks and are not leaving valuable spectrum resources fallow.

For example, the Commission has granted waivers of a licensee's milestone deadlines because the licensee had shown "diligence towards meeting its construction requirements, including identifying tower sites, conducting propagation studies and beginning the process of installing transmission equipment" by the milestone deadline.²⁵ The Commission also granted an extension of more than two years to a licensee that had constructed nearly 400 sites over a

²⁴ Progeny and NextNav LLC are both wholly owned subsidiaries of NextNav Holdings LLC, which was previously named Progeny Holdings LLC.

²⁵ See Letter from Thomas P. Derenge, Deputy Chief, Mobility Division, to Gunnar W. Halley, Counsel, Access 220, LLC, regarding Access 220, LLC Request for Extension of Time to Construct Seven Phase II 220 MHz Licenses, DA 09-1121 at 2 (WTB, May 21, 2009).

seventeen state region.²⁶ The Commission explained that a major justification for the grant in this second case was the fact that the licensee, NRTC LLC, was going to use the network to coordinate electric utility transmissions to ensure “reliable power service to the public.”²⁷

In comparing NRTC’s case to that of Progeny, it should be noted that, even though NRTC constructed a significant number of transmitter sites, it had ready access to equipment from manufacturers, an opportunity that remains unavailable to Progeny. Further, Progeny’s beacon sites already number in the hundreds as well, and the potential public interest benefits of Progeny’s service are at least as compelling as those of NRTC, thereby providing further justification for the grant of Progeny’s extension.

B. Progeny’s Supplemental Request for an Extension Until the Commission Granted Authority to Begin Commercial Operations Was Justified Due to Circumstances Beyond Progeny’s Control

Pursuant to Section 1.946(e)(4) of the Commission’s rules, a licensee’s construction period is automatically extended pending the disposition of an extension request that is filed based on circumstances beyond a licensee’s control.²⁸ In this case, Progeny was prohibited by the Commission from initiating commercial operations until after the Commission issued an order finding that Progeny’s location service would not cause unacceptable levels of interference to Part 15 devices. Progeny could not control the timing of this grant of authority.

²⁶ See NRTC LLC, Demonstration of Five-Year Construction Requirements and Request for Extension of Construction Deadlines, Order, DA 09-1459, ¶ 11 (WTB, June 26, 2009).

²⁷ *Id.*

²⁸ 47 C.F.R. § 1.946(e)(4).

Section 90.353(d) of the Commission's rules states that EA-based M-LMS licenses are "conditioned upon the licensee's ability to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to 47 C.F.R. part 15 devices."²⁹ The Commission expanded on this requirement as applied to Progeny's licenses by requiring Progeny to "file a report...that provides details on the M-LMS system design, describes the process by which it carried out the field testing...and demonstrates that its M-LMS system will not cause unacceptable levels of interference to Part 15 devices that operate in the 902-928 MHz band."³⁰ The Commission further explained that it would place Progeny's report on public notice for comment and, "if no significant interference issues are raised," the Commission would "promptly notify Progeny that it may commence commercial operations."³¹

Pursuant to these requirements, Progeny engaged in multiple months of test preparation (including about two months attempting to secure the cooperation of a Part 15 device manufacturer) followed by field testing, and Progeny filed its Part 15 test report with the Commission on January 27, 2012 demonstrating that its M-LMS network would not cause unacceptable levels of interference to Part 15 devices in the 902-928 MHz band.³²

²⁹ 47 C.F.R. § 1.353(d).

³⁰ *M-LMS Waiver Order*, ¶ 29.

³¹ *Id.*

³² See Letter from Bruce A. Olcott, Counsel, Progeny LMS, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, Regarding Demonstration of Compliance with Section 90.353(d) of the Commission's Rules, WT Docket No. 11-49 (Jan. 27, 2012).

The Commission placed Progeny's test report on public notice and interested parties filed comments, including three parties that argued that additional testing was needed.³³ At the urging of the Commission, Progeny agreed to additional testing involving three parties, Itron, Landis+Gyr, and WISPA. After a lengthy negotiation process to develop a test plan, the actual testing was intermittently conducted beginning in late July and extending into late September because of scheduling difficulties for one of the three Part 15 parties. The joint test process resulted in the preparation of three joint test reports, which were filed with the Commission on October 31, 2012.³⁴

The Commission placed these additional test reports on public notice on November 20, 2012 and, following the filing of another round of comments, the status of Progeny's authority to provide commercial operations remained pending before the Commission until nearly one year after Progeny's initial milestone deadline. Thus, although Progeny diligently continued the development and construction on its network, it could not initiate commercial operations until the Commission issued its June 6, 2013 grant of authority.

These delays were completely outside of Progeny's ability to control. Progeny engaged in tremendous efforts to encourage the prompt issuance of a decision, including the filing of countless technical responses to filings by Part 15 opponents. In the end, however, the ultimate timing of the decision rested with the Commission. Therefore, Progeny's request for an

³³ *The Wireless Telecommunications Bureau and the Office of Engineering and Technology Seek Comment on Progeny's M-LMS Field Testing Report*, WT Docket No. 11-49, Public Notice, 27 FCC Rcd 1579 (WTB/OET 2012).

³⁴ *See* Joint Part 15 Test Reports of Progeny LMS, LLC with the Wireless Internet Service Providers Association, Landis+Gyr Company, and Itron, Inc., WT Docket No. 11-49 (each filed Oct. 31, 2012).

extension of its initial milestone showing for its top 40 EAs until after the Commission granted its authority for Progeny to begin commercial operations is justified by the Commission's rules.

C. The Commission is Justified in Granting Certain Waivers of its Milestone Extension and Electronic Notification Procedural Requirements

To the extent deemed necessary by the Commission, Progeny also requests waiver of certain of the Commission's requirements for the electronic filing of milestone extension requests and notifications.

First, if deemed necessary, Progeny requests a waiver of the Commission's requirement that milestone extension requests should be filed electronically with the Commission using FCC Form 601.³⁵ Progeny did file its First Extension Request and its Second Extension Request electronically using FCC Form 601. Progeny, did not, however, file its November 21, 2012 Supplement using FCC Form 601. Progeny notes that the Commission's rules state only that licensees "*may* request to extend a construction period or coverage period by filing FCC Form 601."³⁶ Further, the rule appears to apply only to initial extension requests and not to supplements or amendments thereof. Nevertheless, to the extent that the Commission deems this to have been a requirement that was applicable to Progeny's November 21, 2012 Supplement, Progeny requests a waiver of that requirement.

Second, Progeny seeks a waiver of the Commission's requirement that build out notifications be filed electronically within 15 days of the expiration of the applicable

³⁵ 47 C.F.R. § 1.946(e).

³⁶ *Id.* (*emphasis added*).

construction or coverage period using FCC Form 601.³⁷ With the sole exception of the Orlando EA, Progeny filed a completion of construction notification for each of its top 40 EAs using FCC Form 601 when Progeny completed the initial build out of its network and began operations using mobile devices. These notifications indicated that Progeny had completed construction, but was precluded by the Commission from commencing commercial service. Progeny, however, did not initially file a second notification for each license using FCC Form 601 following the Commission's grant of authority for Progeny to begin commercial operations. Instead, Progeny filed its June 21, 2013 notice in FCC docket 11-49, which is the docket in which the Commission issued its order directing Progeny to file its notice. Progeny later amended its initial completion of construction notifications to reflect Progeny's commencement of full operations following the Commission's grant of commercial operating authority.³⁸ To the extent that the Commission concludes that Progeny's subsequent amendments to its milestone completion notices must have been filed within 15 days of its actual commencement of service, Progeny herein seeks a waiver of that requirement.

Alternatively, if the Commission concludes that Progeny's June 21, 2013 notice and its individual milestone notifications, as amended, were inadequate to comply with the Commission's requirements for buildout notifications, Progeny urges the Commission to grant an extension of Progeny's initial milestone deadline for its top 40 EAs until 60 days after an extension order is issued in response to this petition. This would give Progeny an opportunity to

³⁷ 47 C.F.R. § 1.946(d).

³⁸ As noted *supra* in note 19, the notification filing for the Orlando EA is an initial filing, rather than an amendment to a previous filing.

file a corrected notice in a format and manner that is consistent with the Commission's requirements.

Pursuant to Section 1.925 of the Commission's rules, the Commission may grant waivers of its rules if it is shown that the underlying purpose of the rule would not be served and granting the waiver would be in the public interest, or that application of the rule would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.³⁹

Waiver of these rules is warranted because Progeny's transmitters were constructed and capable of providing M-LMS to one or more mobile units in most of its top 40 EAs prior to its July 19, 2012 milestone deadline, with construction in the remaining top 40 EAs completed in the weeks and months thereafter, in satisfaction of the milestone requirements as described in the Commission's rules. Thus, the underlying purpose of the rules is well served in this case. Further, no party would be harmed by the grant of such waivers. Moreover, Progeny refrained from beginning commercial service because it was awaiting authorization from the Commission, meaning that Progeny was complying with a specific Commission directive and that any failure to meet the construction deadline was due to causes beyond Progeny's control.⁴⁰ Finally, as discussed further below, Progeny is proposing to provide critically needed indoor location services to support E911 emergency responders. The availability of such highly beneficial services should not be inhibited by inflexible enforcement of administrative filing requirements.

³⁹ 47 C.F.R. § 1.925.

⁴⁰ See 47 C.F.R. § 1.946(e).

II. THE COMMISSION SHOULD EXTEND PROGENY'S REMAINING MILESTONES TO ALIGN ITS BUILDOUT WITH THE COMMISSION'S INDOOR LOCATION ACCURACY MILESTONES

Progeny requests extension of its remaining M-LMS construction milestones to align with the indoor wireless location accuracy milestones established by the Commission in its Indoor Location Accuracy Order. In addition, Progeny requests a unified single milestone deadline for each of its 75 licensed EAs that were not covered by Progeny's milestone showing for its top 40 EAs.

Consolidating and aligning Progeny's buildout milestones with the Commission's indoor location accuracy timeline would serve the Commission's "ultimate objective" in the indoor location proceeding of ensuring that "all Americans using mobile phones – whether calling from urban or rural areas, from indoors or outdoors – have technology that is capable of providing accurate location information in times of an emergency."⁴¹ Progeny is the only company that has demonstrated in industry-wide testing that it can meet the Commission's 50 meter horizontal accuracy requirement for a high percentage of wireless E911 calls made from urban indoor environments. Progeny is also the only company that has demonstrated the vertical location capability necessary to provide E911 location in tall buildings typical of major urban areas. Thus, the public interest will be served by permitting Progeny adequate time to work with its potential wireless carrier customers to identify the accuracy level and areas of coverage required to meet the timeframes identified in the indoor location accuracy rules, particularly in the most challenging indoor and vertical environments in which Progeny's beacon system excels. Thus, Progeny requests waiver and extension for its remaining EAs as follows:

⁴¹ *Indoor Location Accuracy Order*, ¶ 10.

Licensed Economic Areas	Unified Milestone Deadline⁴²
Largest 24 EAs (corresponding to top 25 CMAs) ⁴³	April 3, 2020 ⁴⁴
Next 22 EAs (corresponding to the 26-50 CMAs) ⁴⁵	April 3, 2021
Remaining 69 EAs ⁴⁶	April 3, 2023

Progeny's extension request is intended to align directly with the milestones that the Commission adopted in its Indoor Location Accuracy Order. In its February order, the Commission adopted a carefully designed balance between the critical needs of public safety and the expressed ability of wireless carriers to deploy highly accurate indoor location solutions. The Commission's compromise relied heavily on a voluntary agreement reached between the major wireless carriers and two representatives of the public safety community – APCO and NENA, both of which applauded the compromise (and the Commission's order) as providing significant and achievable benefits to assist emergency first responders in locating wireless callers to E911 emergency services.

The Commission's indoor location rules included a series of timeframes extending for eight years, with escalating requirements for horizontal and vertical location accuracy throughout

⁴² Although this is described as a unified milestone deadline, all but three of Progeny's top 24 EAs and most of Progeny's next 22 EAs were covered by Progeny's initial build out showing for its top 40 EAs.

⁴³ The Washington/Baltimore EA includes two top 25 CMAs.

⁴⁴ April 3, 2015 is the effective date of the Commission's indoor location accuracy rules.

⁴⁵ Several of the 26-50 CMAs will already be covered by Progeny's build out in its top 24 EAs.

⁴⁶ Two of the 69 EAs in this group (Grand Rapids and Syracuse) were addressed in Progeny's initial showing for its top 40 EAs and do not require a consolidated first and second milestone.

this period.⁴⁷ Although the Commission was originally considering a compliance requirement based solely on performance with indoor calls,⁴⁸ the adopted rules are based on a test of combined indoor and outdoor calls.⁴⁹ The effect of this change in the requirements, as Progeny has previously explained, is that carriers will likely be able to meet the first milestones primarily through modest improvements to their existing location technologies.⁵⁰ Specifically, it appears likely that the wireless carriers will be able to satisfy the second and third year milestones for horizontal accuracy (covering 40 percent and 50 percent of all wireless calls, respectively) using refinements to existing technology – such as A-GPS – and other location technologies that are already being deployed – such as OTDOA.

The Commission did not adopt a fourth year benchmark for horizontal accuracy. Instead, the rules skip to the fifth year, at which time wireless carriers are required to provide either a dispatchable address solution or an x/y-axis location of within 50 meters for 70 percent of all wireless 911 calls. It is at this fifth year benchmark that the carriers are likely to need the assistance of Progeny’s highly accurate indoor location technology to provide greater indoor penetration in heavily urban areas, conditions corresponding with the top 25 Cellular Market Areas (“CMAs”).

The Commission’s Indoor Location Accuracy Order further requires wireless carriers to provide dispatchable location or compliant x/y-axis location for 80 percent of all wireless calls

⁴⁷ *Indoor Location Accuracy Order*, ¶ 6.

⁴⁸ *Id.*, ¶ 80.

⁴⁹ *Id.*

⁵⁰ Comments of NextNav, LLC, PS Docket No. 07-114, at 23-24 (Dec. 15, 2014).

by the sixth year, as well as compliant z-axis location in the top 25 CMAs.⁵¹ The requirement to achieve compliance for 80 percent of all wireless calls is likely to expand the indoor location needs of wireless carriers beyond the top 25 CMAs and across all top 50 urbanized CMAs. Therefore, Progeny proposes to complete construction and begin commercial operations in each of the top 50 CMAs (corresponding to Progeny's top 46 EAs) by the sixth year deadline.

Finally, the Commission's indoor location rules require wireless carriers to provide highly accurate z-axis location information in each of the top 50 CMAs within eight years. Progeny anticipates that, concurrent with achieving this requirement, the significant public safety benefits of using z-axis information to assist with E911 emergency response will encourage wireless carriers to deploy z-axis location capabilities outside the top 50 CMAs and across all urban and semi-urban locations. Therefore, Progeny seeks a waiver and extension for its remaining 69 EAs until eight years after the effective date of the Commission's indoor location rules.

As explained below, grant of Progeny's waiver and extension request is warranted by the facts of both Progeny's performance to date and by developments in the Commission's indoor location accuracy proceeding. Because M-LMS development has explicitly responded to the Commission's call for improvements in E911 location accuracy, any major deployment of service was premature until the Commission's E911 location accuracy requirements were finalized. Now that they have been, it is appropriate to link the M-LMS milestones to the E911 requirements that the service will be used to fulfill. Grant of the request will therefore greatly serve the public interest by ensuring that Progeny's highly accurate horizontal and vertical

⁵¹ *Indoor Location Accuracy Order*, ¶ 6.

location services are available to wireless carriers when the carriers will need such technical capabilities to comply with the Commission's indoor location requirements.

A. The Needs of Public Safety Would Not Have Been Served by Requiring Progeny to Begin Construction Prior to the Issuance of the Indoor Location Accuracy Order

Progeny's M-LMS beacon system was designed to solve the longstanding problem of inadequate location capabilities for wireless E911.⁵² The development of Progeny's system capabilities has proceeded in parallel with and in response to the Commission's desire for accurate, rapid, and reliable location capabilities in "challenging indoor environments" such as deep inside large and multistory buildings.⁵³ Progeny has undertaken significant effort and expense to ensure that its M-LMS network will be capable of meeting the Commission's E911 needs, including working closely with the Communications Security, Reliability, and Interoperability Council ("CSRIC") to facilitate benchmark testing, and improving the accuracy of its M-LMS network to meet or exceed the Commission's accuracy benchmarks.⁵⁴ Progeny has already installed initial beacons in the country's major cities and has repeatedly expressed its

⁵² See, e.g. Letter from Bruce A. Olcott, Counsel, Progeny LMS, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 & WT Docket No. 11-49, at Attachment 1, slide 2 (June 10, 2012) (illustrating the "Position Technology State of Affairs").

⁵³ *Indoor Location Accuracy Order*, ¶ 19 n.36 (noting research that acknowledges that "GPS does not perform well in urban canyons, close to walls, buildings, trees, indoors, and in underground environments").

⁵⁴ See Letter from Bruce A. Olcott, Counsel for NextNav, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 07-114 (Aug. 14, 2013) ("*Rev-2 Performance Update*") (providing a report on the independent test results of NextNav's Rev-2 location technology improvements).

capability and willingness to expand its coverage based on demand from wireless carrier customers that may wish to use its network.⁵⁵

Despite Progeny's significant investment to date, the actual market for its location service could not be known until the Commission established the geographic coverage and location accuracy requirements for E911 indoor location services. Thus, it would be inequitable, unduly burdensome, and not in the public interest to have required Progeny to undertake the majority of its construction prior to this point, when the coverage requirements, accuracy level, and other critical criteria for indoor location capabilities remained a matter of speculation and debate. As Progeny has explained, its buildout will be in close collaboration with and in response to the needs of its wireless carrier customers, which would themselves be unable to plan a response to E911 rules that remained under discussion.

The Commission's rule regarding requests for extension provides that an extension may be granted if a licensee shows that its failure to meet the construction deadline is due to "causes beyond its control."⁵⁶ In this case, although Progeny's decision to focus its service on providing E911 is undoubtedly a business decision, it has continually reaffirmed its preparedness to proceed with construction at whatever pace the Commission determined was appropriate to address this critical public safety gap. In granting Progeny's request for waiver of certain M-LMS rules, the Commission explicitly acknowledged Progeny's value in "improve[ing] delivery of E911 emergency services."⁵⁷ Progeny has undertaken substantial effort to ensure that its

⁵⁵ See, e.g. Reply Comments of NextNav, LLC, PS Docket No. 07-114, at 23 (July 14, 2014); Comments of NextNav, PS Docket No. 07-114, at 10 (May 12, 2014).

⁵⁶ 47 C.F.R. § 1.946(e)(1).

⁵⁷ *M-LMS Waiver Order*, ¶ 29.

service is responsive to the needs of public safety and the Commission. A direct result of this close link between Progeny's service and E911, however, is that the market for Progeny's service could not be known until after the Commission had concluded its E911 proceeding. This situation is distinguishable from mere regulatory uncertainty, which exists with any ongoing proceeding; in this case the Commission's decision in the indoor wireless location accuracy proceeding would directly dictate not only the timeline but also the performance criteria of the network to be built and the service to be provided.

Extension is also consistent with the Commission's aversion to construction that is undertaken merely for the purpose of satisfying milestone requirements. In decisions regarding the value of the substantial service standard, the Commission has explicitly expressed its preference for licensees providing tailored, well-considered services "rather than focusing their resources on meeting population coverage criteria and channel usage requirements."⁵⁸ In furtherance of this goal, the Commission is fully justified in extending Progeny's buildout milestones until after its indoor location rules were adopted.

B. Aligning Progeny's M-LMS Construction Milestones with the Wireless Location Accuracy Rules Will Permit Progeny to Meet the Needs of Public Safety and Wireless Carriers

Now that the Commission has adopted its indoor location rules, it would serve the public interest to align Progeny's milestone extension schedule with the indoor location requirements in order to preserve the continued availability of Progeny's service for E911 emergency response.

⁵⁸ Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *Memorandum Opinion and Order on Reconsideration*, 99-270, ¶ 16 (1999).

Pursuant to Section 1.925 of the Commission's rules, the Commission may grant a waiver of its milestone rules if it is shown that:

- the underlying purpose of the rule would not be served and granting the waiver would be in the public interest, or
- application of the rule would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.⁵⁹

Grant of the requested waiver would clearly serve the public interest and the underlying purpose of the Commission's milestone requirements. The Commission has repeatedly confirmed that improved indoor wireless location accuracy is a critical public safety need.⁶⁰ The steadily increasing prevalence of wireless phones "increases the likelihood that wireless 911 calls will come from indoor environments where traditional location accuracy technologies optimized for outdoor calling often do not work effectively or at all."⁶¹ As a result, the limitations of current indoor location accuracy have become increasingly evident.⁶² Based on the record, the Commission has unequivocally concluded that "[t]his gap in the performance of 911 location service needs to be closed: the public rightfully expects 911 location technologies to work

⁵⁹ See 47 C.F.R. § 1.925(b)(3).

⁶⁰ Wireless E911 Location Accuracy Requirements, PS Docket No. 07-114, Third Report and Order, and Second Further Notice of Proposed Rulemaking, 26 FCC Rcd 10074 (2011) (noting that effective E911 operation "requires development of indoor technical solutions").

⁶¹ *Indoor Location Accuracy Order*, ¶ 2; Wireless E911 Location Accuracy Requirements, WT Docket No. 07-114, Further Notice of Proposed Rulemaking, FCC 14-13, ¶¶ 22, 28 (Feb. 21, 2014).

⁶² *Id.*, ¶ 31 (noting that "indoor locations pose particular challenges for first responders in finding the caller" because "indoor incidents are often not visible to the first responder, and a city block in an urban environment could potentially contain thousands of apartments").

effectively regardless of whether a 911 call originates indoors or outdoors.”⁶³ The Indoor Location Accuracy Order adopts concrete requirements to meet these expectations, and challenges the wireless industry to identify and deploy technology to achieve substantial improvements over current performance.

The ultimate goal for horizontal location capabilities in indoor locations was specifically addressed by the public safety community in its Foreword to the Commission’s CSRIC Test Bed Report.⁶⁴ Ideally, public safety seeks the identification of a “specific dispatchable building (and floor in multi-story environments).”⁶⁵ Quantifying this requirement, the public safety community explains

[h]orizontal positional fixes that substantially exceed 50 meter accuracy, provides only general location information. Tighter performance is required, particularly in urban and dense urban environments to narrow the search ring to a single building or a more reasonable number of adjacent buildings.⁶⁶

NextNav’s indoor location technology is the only technology that has been demonstrated in industry-wide testing to satisfy this 50 meter accuracy requirement in a large percentage of instances. The CSRIC Test Bed Report verified that NextNav’s technology could achieve horizontal accuracy findings that were either in or adjacent to the building of the test location in more than 80 percent of tests conducted. Further, as NextNav explained in a report that it filed

⁶³ *Indoor Location Accuracy Order*, ¶ 2.

⁶⁴ See *Indoor Location Test Bed Report*, The Communications Security, Reliability and Interoperability Council III, Working Group 3 – E9-1-1 Location Accuracy, at 9 (March 14, 2013) (“*CSRIC Test Bed Report*”).

⁶⁵ *Id.*

⁶⁶ *Id.*

with the Commission on August 14, 2013,⁶⁷ subsequent enhancements to NextNav’s technology consistently surpassed public safety’s goal of at least 50 meter accuracy, providing search rings of less than 50 meters for at least 67 percent of the calls in each of the critical morphologies – dense urban, urban, and suburban environments, and search rings of less than 35 meters for at least 90 percent of calls in suburban environments.

With respect to vertical location accuracy, the Public Safety Foreword to the CSRIC Test Bed Report observed that “floor level vertical accuracy is valuable in large multi-story structures common in urban and dense urban morphologies.”⁶⁸ CSRIC’s conclusion in this regard is consistent with the long standing position of the public safety community, the representatives of which have been arguing for years that the delivery of vertical-axis position information should be “required for future-generation networks and devices, under uniform standards.”⁶⁹

Here again, NextNav has developed the only location technology that has been demonstrated to provide highly accurate vertical location information. The CSRIC Test Bed Report documented that NextNav’s technological approach could achieve very precise vertical accuracy across all locations, with a median accuracy of 2 meters (essentially “floor level”), even in large multistory buildings. As detailed in NextNav’s August 14, 2013 report to the Commission, subsequent enhancements to NextNav’s technology have improved on its

⁶⁷ *Rev-2 Performance Update* at 1.

⁶⁸ *CSRIC Test Bed Report* at 8.

⁶⁹ Comments of NENA, the E9-1-1 Association, Docket Nos. 05-196 & 07-114, at 11 (filed Jan. 19, 2011).

capabilities, demonstrating reliability of about 1 to 2 meter vertical accuracy for at least 67 percent of E911 calls regardless of urban morphology.⁷⁰

Only Progeny offers technology that has been demonstrated in industry-wide testing to achieve the Commission's indoor location accuracy requirements. Therefore, in order for the Commission to ensure that it can achieve its "ultimate objective" of ubiquitous, reliable, and accurate location technology for all Americans, it must ensure that the necessary technology is available to the market when the deadline for implementing this objective triggers. Progeny is capable of providing its services when and where required to address those areas most critically unserved by currently-used technologies. Thus, Progeny proposes an extension schedule mirroring the Commission's indoor location accuracy timeline for the most difficult cases.

Moreover, as explained above, application of the current deadlines would be inequitable and unduly burdensome given how closely aligned the development of Progeny's system has been with the development of the Commission's indoor wireless location accuracy rules. Extension is also consistent with the Commission's policy goals because, as Progeny has explained, it has diligently constructed an initial buildout across 40 EAs as well as completing a full commercial-grade network in the San Francisco Bay Area to facilitate E911 accuracy testing by CSRIC. Progeny continues to be willing and able to expand its coverage to meet demand from any and all wireless carrier customers who wish to use its network to meet wireless indoor accuracy needs, either by the Commission's deadlines or before.

⁷⁰ *Rev-2 Performance Update* at 7-8.

Finally, due to the unique spectrum sharing requirements of the 902–928 MHz band, the spectrum will continue to be used by other services and will not be left fallow while Progeny completes the construction of its M-LMS network. As Progeny explained in its First Extension Request, M-LMS licensees share the band with Federal Government radiolocation systems, ISM devices, licensed amateur radio operations, and unlicensed Part 15 equipment.⁷¹ The Commission has determined that “the 902–928 MHz band is already heavily used by other licensed and unlicensed services for a wide variety of purposes. Consequently, even if a multilateration LMS licensee fails to build out its system, the possibility that the spectrum will go under-utilized is negligible.”⁷²

C. The Adoption of a Unified Milestone Deadline for Progeny’s Remaining EAs Would Serve the Public Interest

As noted above, Progeny seeks a unified milestone deadline for its 75 licensed EAs that were not covered by Progeny’s initial milestone showing for its top 40 EAs.⁷³ A unified milestone would reflect the reality of M-LMS buildout to support E911 emergency location

⁷¹ See, e.g., *First Extension Request* at i-ii, 3, 12-15 (citing *M-LMS Waiver Order*, ¶ 4).

⁷² See Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, Second Report and Order, 13 FCC Rcd 15182, 15197, ¶ 30 (1998)

⁷³ There are three EAs in Progeny’s top 24 EAs for which Progeny has not yet completed initial construction, each identified with an asterisk in Attachment C. Progeny proposes a single unified milestone of 5 years for these EAs, which include Minneapolis-St. Paul (EA107), Sacramento-Yolo (EA164), and Puerto Rico/U.S. Virgin Islands (EA174). There are five EAs in Progeny’s next 22 EAs for which Progeny has not completed initial construction, each identified with an asterisk in Attachment D. Progeny proposes a single unified milestone of 6 years for these EAs, which include Rochester (EA7), Buffalo-Niagara Falls (EA8), Norfolk-Virginia Beach-Newport News (EA20), Louisville (EA70), and Austin-San Marcos (EA130). In the last group of 69 EAs, two EAs, marked with an asterisk in Attachment E, were included in the showings for Progeny’s top 40 EAs (Grand Rapids (EA62) and Syracuse (EA6)) and the remaining 67 EAs require consolidated milestones.

service. In Progeny's experience, the construction of an M-LMS network to support public safety does not take place in stages in each community. Instead, Progeny begins construction of its network in a community and continues that effort until the network deployment has achieved the desired level of location accuracy and reliability to achieve public safety requirements. Therefore, rather than continue to maintain a phased milestone schedule based on percentages of population, it would be more appropriate to identify a single milestone deadline for each of Progeny's M-LMS licenses.

Progeny's proposal for a single unified deadline for each license is also based on the acknowledgement that Progeny's carrier customers are likely to seek the assistance of Progeny's service to provide advanced location capabilities primarily in urban centers, and the carriers may be less likely to need Progeny's service in suburban and rural areas. As a result, Progeny's service in many EAs may not achieve sufficient coverage outside of the main population centers to reach two thirds of the population to the EA.⁷⁴ In areas where carrier customer demand does not support coverage of two thirds of the population by the unified milestone deadline, Progeny may seek to satisfy its milestone requirements through a showing of substantial service.⁷⁵ In any event, Progeny fully intends to demonstrate that its M-LMS construction and operations satisfy the milestone requirements that are adopted by the Commission for Progeny's licensed EAs. Therefore, Progeny urges the Commission to grant the extensions and waivers detailed herein.

⁷⁴ 47 C.F.R. § 90.155(d).

⁷⁵ 47 C.F.R. § 90.155(e).

III. CONCLUSION

The Commission should grant Progeny's requested extensions and waivers because application of the current construction deadlines would be inequitable and unduly burdensome, and the grant of these waivers and extensions would serve the public interest.

In addition, grant of Progeny's amendment to its First Extension Request is warranted because Progeny seeks to address the period during which it was actively bringing its licenses in its top 40 EAs into operation but was prevented from offering service due to the Commission's deliberations regarding its commercial service authorization. Progeny made substantial and successful efforts to complete construction by the milestone deadline in most of its largest EAs, while at the same time complying with the Commission's restriction on commercial service.

For Progeny's remaining EAs, grant of Progeny's request to align its buildout milestones with the Commission's indoor location accuracy milestones is warranted because of the close linkage between the development of Progeny's M-LMS service and the Commission's E911 objectives. Prior to the Indoor Location Accuracy Order, Progeny could not have known where, how, or when to construct its network in support of the wireless carriers' fulfillment of the E911 requirements, imposing a delay that was beyond Progeny's control.

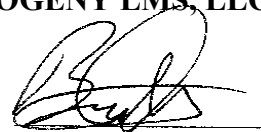
With the adoption of these requirements, it is now appropriate to permit Progeny to expand its network at the pace dictated by the Commission and in response to the needs of its wireless carrier customers. Thus, Progeny's proposal for unified milestones at five, six, and eight years is warranted, as they reflect the E911 coverage requirements of the Indoor Location Accuracy Order. Extension is further warranted because Progeny has demonstrated significant investment in developing and deploying its M-LMS service, and the spectrum sharing requirements of the 902–928 MHz band ensure that the spectrum is intensively used and will not

be left fallow. Accordingly, grant of Progeny's waiver and extension request would serve the Commission's policies and the public interest, and should be granted.

Respectfully submitted,

PROGENY LMS, LLC

By:

A handwritten signature in black ink, appearing to read "Bruce A. Olcott", is written over a horizontal line.

Bruce A. Olcott

Preston N. Thomas

Jones Day

51 Louisiana Ave NW

Washington, D.C. 20001

(202) 879-3630

Its Attorneys

March 27, 2015

Attachment A
All Progeny LMS, LLC Call Signs

BEA001	WPQP845	Bangor, ME
BEA001	WPQP846	Bangor, ME
BEA002	WPQP847	Portland, ME
BEA002	WPQP848	Portland, ME
BEA003	WPQP849	Boston-Worcester-Lawrence, ME
BEA003	WPQP850	Boston-Worcester-Lawrence, ME
BEA004	WPQP851	Burlington, VT-NY
BEA004	WPQP852	Burlington, VT-NY
BEA005	WPQP853	Albany-Schenectady-Troy, NY
BEA005	WPQP854	Albany-Schenectady-Troy, NY
BEA006	WPQP855	Syracuse, NY-PA
BEA006	WPQP856	Syracuse, NY-PA
BEA007	WPQP857	Rochester, NY-PA
BEA007	WPQP858	Rochester, NY-PA
BEA008	WPQP859	Buffalo-Niagara Falls, NY-PA
BEA008	WPQP860	Buffalo-Niagara Falls, NY-PA
BEA009	WPQP861	State College, PA
BEA009	WPQP862	State College, PA
BEA010	WPQP863	New York-North New Jersey, NY-NJ
BEA010	WPQP864	New York-North New Jersey, NY-NJ
BEA011	WPQP865	Harrisburg-Lebanon-Carlisle, PA
BEA011	WPQP866	Harrisburg-Lebanon-Carlisle PA
BEA012	WPQP867	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
BEA012	WPQP868	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
BEA013	WPQP869	Washington-Baltimore, DC-MD
BEA013	WPQP870	Washington-Baltimore, DC-MD
BEA015	WPQP871	Richmond-Petersburg, VA
BEA015	WPQP872	Richmond-Petersburg, VA
BEA017	WPQP873	Roanoke, VA-NC-WV
BEA017	WPQP874	Roanoke, VA-NC-WV
BEA018	WPQP875	Greensboro-Winston-Salem-High Point, NC-VA
BEA018	WPQP876	Greensboro-Winston-Salem-High Point, NC-VA
BEA019	WPQP877	Raleigh-Durham-Chapel Hill, NC
BEA019	WPQP878	Raleigh-Durham-Chapel Hill, NC
BEA020	WPQP879	Norfolk-Virginia Beach-Newport, VA
BEA020	WPQP880	Norfolk-Virginia Beach-Newport, VA
BEA021	WPQP881	Greenville, NC
BEA021	WPQP882	Greenville, NC
BEA023	WPQP883	Charlotte-Gastonia-Rock Hill, SC
BEA023	WPQP884	Charlotte-Gastonia-Rock Hill, SC
BEA024	WPQP885	Columbia, SC
BEA024	WPQP886	Columbia, SC
BEA025	WPQP887	Wilmington, NC-SC

BEA025	WPQP888	Wilmington, NC-SC
BEA026	WPQP889	Charleston-North Charleston, SC
BEA026	WPQP890	Charleston-North Charleston, SC
BEA027	WPQP891	Augusta-Aiken, GA-SC
BEA027	WPQP892	Augusta-Aiken, GA-SC
BEA028	WPQP893	Savannah, GA-SC
BEA028	WPQP894	Savannah, GA-SC
BEA029	WPQP895	Jacksonville, FL-GA
BEA029	WPQP896	Jacksonville, FL-GA
BEA030	WPQP897	Orlando, FL
BEA030	WPQP898	Orlando, FL
BEA031	WPQP899	Miami-Fort Lauderdale, FL
BEA031	WPQP900	Miami-Fort Lauderdale, FL
BEA032	WPQP901	Fort Myers-Cape Coral, FL
BEA032	WPQP902	Fort Myers-Cape Coral, FL
BEA033	WPQP903	Sarasota-Bradenton, FL
BEA033	WPQP904	Sarasota-Bradenton, FL
BEA034	WPQP905	Tampa-St. Petersburg-Clearwater, FL
BEA034	WPQP906	Tampa-St. Petersburg-Clearwater, FL
BEA035	WPQP907	Tallahassee, FL-GA
BEA035	WPQP908	Tallahassee, FL-GA
BEA038	WPQP909	Macon, GA
BEA038	WPQP910	Macon, GA
BEA040	WPQP911	Atlanta, GA-AL-NC
BEA040	WPQP912	Atlanta, GA-AL-NC
BEA041	WPQP913	Greenville-Spartanburg-Anderson, SC-NC
BEA041	WPQP914	Greenville-Spartanburg-Anderson, SC-NC
BEA043	WPQP915	Chattanooga, TN-GA
BEA043	WPQP916	Chattanooga, TN-GA
BEA044	WPQP917	Knoxville, TN
BEA044	WPQP918	Knoxville, TN
BEA045	WPQP919	Johnson City-Kingsport-Bristol, TN-VA
BEA045	WPQP920	Johnson City-Kingsport-Bristol, TN-VA
BEA047	WPQP921	Lexington, KY-TN-VA-WV
BEA047	WPQP922	Lexington, KY-TN-VA-WV
BEA048	WPQP923	Charleston, WV-KY-OH
BEA048	WPQP924	Charleston, WV-KY-OH
BEA049	WPQP925	Cincinnati-Hamilton, OH-KY-IN
BEA049	WPQP926	Cincinnati-Hamilton, OH-KY-IN
BEA050	WPQP927	Dayton-Springfield, OH
BEA050	WPQP928	Dayton-Springfield, OH
BEA051	WPQP929	Columbus, OH
BEA051	WPQP930	Columbus, OH
BEA053	WPQP931	Pittsburgh, PA-WV
BEA053	WPQP932	Pittsburgh, PA-WV
BEA054	WPQP933	Erie, PA

BEA054	WPQP934	Erie, PA
BEA055	WPQP935	Cleveland-Akron, OH-PA
BEA055	WPQP936	Cleveland-Akron, OH-PA
BEA056	WPQP937	Toledo, OH
BEA056	WPQP938	Toledo, OH
BEA057	WPQP939	Detroit-Ann Arbor-Flint, MI
BEA057	WPQP940	Detroit-Ann Arbor-Flint, MI
BEA059	WPQP941	Green Bay, WI-MI
BEA059	WPQP942	Green Bay, WI-MI
BEA062	WPQP943	Grand Rapids-Muskegon-Holland, MI
BEA062	WPQP944	Grand Rapids-Muskegon-Holland, MI
BEA063	WPQP945	Milwaukee-Racine, WI
BEA063	WPQP946	Milwaukee-Racine, WI
BEA064	WPQP947	Chicago-Gary-Kenosha, IL-IN-WI
BEA064	WPQP948	Chicago-Gary-Kenosha, IL-IN-WI
BEA065	WPQP949	Elkhart-Goshen, IN-MI
BEA065	WPQP950	Elkhart-Goshen, IN-MI
BEA066	WPQP951	Fort Wayne, IN
BEA066	WPQP952	Fort Wayne, IN
BEA067	WPQP953	Indianapolis, IN-IL
BEA067	WPQP954	Indianapolis, IN-IL
BEA068	WPQP955	Champaign-Urbana, IL
BEA068	WPQP956	Champaign-Urbana, IL
BEA069	WPQP957	Evansville-Henderson, IN-KY-IL
BEA069	WPQP958	Evansville-Henderson, IN-KY-IL
BEA070	WPQP959	Louisville, KY-IN
BEA070	WPQP960	Louisville, KY-IN
BEA071	WPQP961	Nashville, TN-KY
BEA071	WPQP962	Nashville, TN-KY
BEA073	WPQP963	Memphis, TN-AR-MS-KY
BEA073	WPQP964	Memphis, TN-AR-MS-KY
BEA074	WPQP965	Huntsville, AL-TN
BEA074	WPQP966	Huntsville, AL-TN
BEA075	WPQP967	Tupelo, MS-AL-TN
BEA075	WPQP968	Tupelo, MS-AL-TN
BEA077	WPQP969	Jackson, MS-AL-LA
BEA077	WPQP970	Jackson, MS-AL-LA
BEA078	WPQP971	Birmingham, AL
BEA078	WPQP972	Birmingham, AL
BEA080	WPQP973	Mobile, AL
BEA080	WPQP974	Mobile, AL
BEA081	WPQP975	Pensacola, FL
BEA081	WPQP976	Pensacola, FL
BEA083	WPQP977	New Orleans, LA-MS
BEA083	WPQP978	New Orleans, LA-MS
BEA084	WPQP979	Baton Rouge, LA-MS

BEA084	WPQP980	Baton Rouge, LA-MS
BEA085	WPQP981	Lafayette, LA
BEA085	WPQP982	Lafayette, LA
BEA086	WPQP983	Lake Charles, LA
BEA086	WPQP984	Lake Charles, LA
BEA088	WPQP985	Shreveport-Bossier City, LA-AR
BEA088	WPQP986	Shreveport-Bossier City, LA-AR
BEA090	WPQP987	Little Rock-North Little Rock, AR
BEA090	WPQP988	Little Rock-North Little Rock, AR
BEA094	WPQP989	Springfield, MO
BEA094	WPQP990	Springfield, MO
BEA096	WPQP991	St. Louis, MO-IL
BEA096	WPQP992	St. Louis, MO-IL
BEA099	WPQP993	Kansas City, MO-KS
BEA099	WPQP994	Kansas City, MO-KS
BEA100	WPQP995	Des Moines, IA-IL-MO
BEA100	WPQP996	Des Moines, IA-IL-MO
BEA101	WPQP997	Peoria-Pekin, IL
BEA101	WPQP998	Peoria-Pekin, IL
BEA102	WPQP999	Davenport-Moline-Rock Island, IA-IL
BEA102	WPQQ200	Davenport-Moline-Rock Island, IA-IL
BEA104	WPQQ201	Madison, WI-IA-IL
BEA104	WPQQ202	Madison, WI-IA-IL
BEA107	WPQQ203	Minneapolis-St. Paul, MN-WI-IA
BEA116	WPQQ204	Sioux Falls, SD-IA-MN-NE
BEA116	WPQQ205	Sioux Falls, SD-IA-MN-NE
BEA118	WPQQ206	Omaha, NE-IA-MO
BEA118	WPQQ207	Omaha, NE-IA-MO
BEA122	WPQQ208	Wichita, KS-OK
BEA122	WPQQ209	Wichita, KS-OK
BEA124	WPQQ210	Tulsa, OK-KS
BEA124	WPQQ211	Tulsa, OK-KS
BEA125	WPQQ212	Oklahoma City, OK
BEA125	WPQQ213	Oklahoma City, OK
BEA127	WPQQ214	Dallas-Fort Worth, TX-AR-OK
BEA127	WPQQ215	Dallas-Fort Worth, TX-AR-OK
BEA130	WPQQ216	Austin-San Marcos, TX
BEA130	WPQQ217	Austin-San Marcos, TX
BEA131	WPQQ218	Houston-Galveston-Brazoria, TX
BEA131	WPQQ219	Houston-Galveston-Brazoria, TX
BEA132	WPQQ220	Corpus Christi, TX
BEA132	WPQQ221	Corpus Christi, TX
BEA133	WPQQ222	McAllen-Edinburg-Mission, TX
BEA133	WPQQ223	McAllen-Edinburg-Mission, TX
BEA134	WPQQ224	San Antonio, TX
BEA134	WPQQ225	San Antonio, TX

BEA141	WPQQ226	Denver-Boulder-Greeley, CO-KS-NE
BEA141	WPQQ227	Denver-Boulder-Greeley, CO-KS-NE
BEA147	WPQQ228	Spokane, WA-ID
BEA147	WPQQ229	Spokane, WA-ID
BEA150	WPQQ230	Boise City, ID-OR
BEA150	WPQQ231	Boise City, ID-OR
BEA151	WPQQ232	Reno, NV-CA
BEA151	WPQQ233	Reno, NV-CA
BEA152	WPQQ234	Salt Lake City-Ogden, UT-ID
BEA152	WPQQ235	Salt Lake City-Ogden, UT-ID
BEA153	WPQQ236	Las Vegas, NV-AZ-UT
BEA153	WPQQ237	Las Vegas, NV-AZ-UT
BEA156	WPQQ238	Albuquerque, NM-AZ
BEA156	WPQQ239	Albuquerque, NM-AZ
BEA157	WPQQ240	El Paso, TX-NM
BEA157	WPQQ241	El Paso, TX-NM
BEA158	WPQQ242	Phoenix-Mesa, AZ-NM
BEA158	WPQQ243	Phoenix-Mesa, AZ-NM
BEA159	WPQQ244	Tucson, AZ
BEA159	WPQQ245	Tucson, AZ
BEA160	WPQQ246	Los Angeles-Riverside-Orange County, CA-AZ
BEA160	WPQQ247	Los Angeles-Riverside-Orange County, CA-AZ
BEA161	WPQQ248	San Diego, CA
BEA161	WPQQ249	San Diego, CA
BEA162	WPQQ250	Fresno, CA
BEA162	WPQQ251	Fresno, CA
BEA163	WPQQ252	San Francisco-Oakland-San Jose, CA
BEA163	WPQQ253	San Francisco-Oakland-San Jose, CA
BEA164	WPQQ254	Sacramento-Yolo, CA
BEA166	WPQQ255	Eugene-Springfield, OR-CA
BEA166	WPQQ256	Eugene-Springfield, OR-CA
BEA167	WPQQ257	Portland-Salem, OR-WA
BEA167	WPQQ258	Portland-Salem, OR-WA
BEA169	WPQQ259	Richland-Kennewick-Pasco, WA
BEA169	WPQQ260	Richland-Kennewick-Pasco, WA
BEA170	WPQQ261	Seattle-Tacoma-Bremerton, WA
BEA170	WPQQ262	Seattle-Tacoma-Bremerton, WA
BEA171	WPQQ263	Anchorage, AK
BEA171	WPQQ264	Anchorage, AK
BEA172	WPQQ265	Honolulu, HI
BEA172	WPQQ266	Honolulu, HI
BEA173	WPQQ267	Guam and Northern Mariana Islands
BEA173	WPQQ268	Guam and Northern Mariana Islands
BEA174	WPQQ269	Puerto Rico and the U.S. Virgin Islands
BEA174	WPQQ270	Puerto Rico and the U.S. Virgin Islands
BEA176	WPQQ271	Gulf of Mexico

BEA176 WPQQ272 Gulf of Mexico

Attachment B
Progeny Call Signs in Top 40 EAs
First Milestone Extension until June 21, 2013

BEA003	WPQP849	Boston-Worcester-Lawrence, ME
BEA003	WPQP850	Boston-Worcester-Lawrence, ME
BEA006	WPQP855	Syracuse, NY-PA
BEA006	WPQP856	Syracuse, NY-PA
BEA010	WPQP863	New York-North New Jersey, NY-NJ
BEA010	WPQP864	New York-North New Jersey, NY-NJ
BEA012	WPQP867	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
BEA012	WPQP868	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
BEA013	WPQP869	Washington-Baltimore, DC-MD
BEA013	WPQP870	Washington-Baltimore, DC-MD
BEA018	WPQP875	Greensboro-Winston-Salem-High Point, NC-VA
BEA018	WPQP876	Greensboro-Winston-Salem-High Point, NC-VA
BEA019	WPQP877	Raleigh-Durham-Chapel Hill, NC
BEA019	WPQP878	Raleigh-Durham-Chapel Hill, NC
BEA023	WPQP883	Charlotte-Gastonia-Rock Hill, SC
BEA023	WPQP884	Charlotte-Gastonia-Rock Hill, SC
BEA029	WPQP895	Jacksonville, FL-GA
BEA029	WPQP896	Jacksonville, FL-GA
BEA030	WPQP897	Orlando, FL
BEA030	WPQP898	Orlando, FL
BEA031	WPQP899	Miami-Fort Lauderdale, FL
BEA031	WPQP900	Miami-Fort Lauderdale, FL
BEA034	WPQP905	Tampa-St. Petersburg-Clearwater, FL
BEA034	WPQP906	Tampa-St. Petersburg-Clearwater, FL
BEA040	WPQP911	Atlanta, GA-AL-NC
BEA040	WPQP912	Atlanta, GA-AL-NC
BEA049	WPQP925	Cincinnati-Hamilton, OH-KY-IN
BEA049	WPQP926	Cincinnati-Hamilton, OH-KY-IN
BEA051	WPQP929	Columbus, OH
BEA051	WPQP930	Columbus, OH
BEA053	WPQP931	Pittsburgh, PA-WV
BEA053	WPQP932	Pittsburgh, PA-WV
BEA055	WPQP935	Cleveland-Akron, OH-PA
BEA055	WPQP936	Cleveland-Akron, OH-PA
BEA057	WPQP939	Detroit-Ann Arbor-Flint, MI
BEA057	WPQP940	Detroit-Ann Arbor-Flint, MI
BEA062	WPQP943	Grand Rapids-Muskegon-Holland, MI
BEA062	WPQP944	Grand Rapids-Muskegon-Holland, MI
BEA063	WPQP945	Milwaukee-Racine, WI
BEA063	WPQP946	Milwaukee-Racine, WI
BEA064	WPQP947	Chicago-Gary-Kenosha, IL-IN-WI
BEA064	WPQP948	Chicago-Gary-Kenosha, IL-IN-WI

BEA067	WPQP953	Indianapolis, IN-IL
BEA067	WPQP954	Indianapolis, IN-IL
BEA071	WPQP961	Nashville, TN-KY
BEA071	WPQP962	Nashville, TN-KY
BEA073	WPQP963	Memphis, TN-AR-MS-KY
BEA073	WPQP964	Memphis, TN-AR-MS-KY
BEA083	WPQP977	New Orleans, LA-MS
BEA083	WPQP978	New Orleans, LA-MS
BEA096	WPQP991	St. Louis, MO-IL
BEA096	WPQP992	St. Louis, MO-IL
BEA099	WPQP993	Kansas City, MO-KS
BEA099	WPQP994	Kansas City, MO-KS
BEA125	WPQQ212	Oklahoma City, OK
BEA125	WPQQ213	Oklahoma City, OK
BEA127	WPQQ214	Dallas-Fort Worth, TX-AR-OK
BEA127	WPQQ215	Dallas-Fort Worth, TX-AR-OK
BEA131	WPQQ218	Houston-Galveston-Brazoria, TX
BEA131	WPQQ219	Houston-Galveston-Brazoria, TX
BEA134	WPQQ224	San Antonio, TX
BEA134	WPQQ225	San Antonio, TX
BEA141	WPQQ226	Denver-Boulder-Greeley, CO-KS-NE
BEA141	WPQQ227	Denver-Boulder-Greeley, CO-KS-NE
BEA152	WPQQ234	Salt Lake City-Ogden, UT-ID
BEA152	WPQQ235	Salt Lake City-Ogden, UT-ID
BEA153	WPQQ236	Las Vegas, NV-AZ-UT
BEA153	WPQQ237	Las Vegas, NV-AZ-UT
BEA158	WPQQ242	Phoenix-Mesa, AZ-NM
BEA158	WPQQ243	Phoenix-Mesa, AZ-NM
BEA160	WPQQ246	Los Angeles-Riverside-Orange County, CA-AZ
BEA160	WPQQ247	Los Angeles-Riverside-Orange County, CA-AZ
BEA161	WPQQ248	San Diego, CA
BEA161	WPQQ249	San Diego, CA
BEA163	WPQQ252	San Francisco-Oakland-San Jose, CA
BEA163	WPQQ253	San Francisco-Oakland-San Jose, CA
BEA167	WPQQ257	Portland-Salem, OR-WA
BEA167	WPQQ258	Portland-Salem, OR-WA
BEA170	WPQQ261	Seattle-Tacoma-Bremerton, WA
BEA170	WPQQ262	Seattle-Tacoma-Bremerton, WA

Attachment C
Progeny Call Signs in 24 EAs
Second Milestone Extension until April 3, 2020*

BEA003	WPQP849	Boston-Worcester-Lawrence, ME
BEA003	WPQP850	Boston-Worcester-Lawrence, ME
BEA010	WPQP863	New York-North New Jersey, NY-NJ
BEA010	WPQP864	New York-North New Jersey, NY-NJ
BEA012	WPQP867	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
BEA012	WPQP868	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD
BEA013	WPQP869	Washington-Baltimore, DC-MD
BEA013	WPQP870	Washington-Baltimore, DC-MD
BEA031	WPQP899	Miami-Fort Lauderdale, FL
BEA031	WPQP900	Miami-Fort Lauderdale, FL
BEA034	WPQP905	Tampa-St. Petersburg-Clearwater, FL
BEA034	WPQP906	Tampa-St. Petersburg-Clearwater, FL
BEA040	WPQP911	Atlanta, GA-AL-NC
BEA040	WPQP912	Atlanta, GA-AL-NC
BEA053	WPQP931	Pittsburgh, PA-WV
BEA053	WPQP932	Pittsburgh, PA-WV
BEA057	WPQP939	Detroit-Ann Arbor-Flint, MI
BEA057	WPQP940	Detroit-Ann Arbor-Flint, MI
BEA064	WPQP947	Chicago-Gary-Kenosha, IL-IN-WI
BEA064	WPQP948	Chicago-Gary-Kenosha, IL-IN-WI
BEA096	WPQP991	St. Louis, MO-IL
BEA096	WPQP992	St. Louis, MO-IL
BEA107	WPQQ203	Minneapolis-St. Paul, MN-WI-IA*
BEA127	WPQQ214	Dallas-Fort Worth, TX-AR-OK
BEA127	WPQQ215	Dallas-Fort Worth, TX-AR-OK
BEA131	WPQQ218	Houston-Galveston-Brazoria, TX
BEA131	WPQQ219	Houston-Galveston-Brazoria, TX
BEA134	WPQQ224	San Antonio, TX
BEA134	WPQQ225	San Antonio, TX
BEA141	WPQQ226	Denver-Boulder-Greeley, CO-KS-NE
BEA141	WPQQ227	Denver-Boulder-Greeley, CO-KS-NE
BEA158	WPQQ242	Phoenix-Mesa, AZ-NM
BEA158	WPQQ243	Phoenix-Mesa, AZ-NM
BEA160	WPQQ246	Los Angeles-Riverside-Orange County, CA-AZ
BEA160	WPQQ247	Los Angeles-Riverside-Orange County, CA-AZ
BEA161	WPQQ248	San Diego, CA

* Progeny has not yet completed initial construction in the EAs marked with an asterisk, and therefore proposes to meet a single unified milestone in these EAs at five years.

BEA161	WPQQ249	San Diego, CA
BEA163	WPQQ252	San Francisco-Oakland-San Jose, CA
BEA163	WPQQ253	San Francisco-Oakland-San Jose, CA
BEA164	WPQQ254	Sacramento-Yolo, CA*
BEA167	WPQQ257	Portland-Salem, OR-WA
BEA167	WPQQ258	Portland-Salem, OR-WA
BEA170	WPQQ261	Seattle-Tacoma-Bremerton, WA
BEA170	WPQQ262	Seattle-Tacoma-Bremerton, WA
BEA174	WPQQ269	Puerto Rico and the U.S. Virgin Islands*
BEA174	WPQQ270	Puerto Rico and the U.S. Virgin Islands*

Attachment D
Progeny Call Signs in 22 EAs
Second Milestone Extension until April 3, 2021 *

BEA007	WPQP857	Rochester, NY-PA*
BEA007	WPQP858	Rochester, NY-PA*
BEA008	WPQP859	Buffalo-Niagara Falls, NY-PA*
BEA008	WPQP860	Buffalo-Niagara Falls, NY-PA*
BEA018	WPQP875	Greensboro-Winston-Salem-High Point, NC-VA
BEA018	WPQP876	Greensboro-Winston-Salem-High Point, NC-VA
BEA019	WPQP877	Raleigh-Durham-Chapel Hill, NC
BEA019	WPQP878	Raleigh-Durham-Chapel Hill, NC
BEA020	WPQP879	Norfolk-Virginia Beach-Newport, VA*
BEA020	WPQP880	Norfolk-Virginia Beach-Newport, VA*
BEA023	WPQP883	Charlotte-Gastonia-Rock Hill, SC
BEA023	WPQP884	Charlotte-Gastonia-Rock Hill, SC
BEA029	WPQP895	Jacksonville, FL-GA
BEA029	WPQP896	Jacksonville, FL-GA
BEA030	WPQP897	Orlando, FL
BEA030	WPQP898	Orlando, FL
BEA049	WPQP925	Cincinnati-Hamilton, OH-KY-IN
BEA049	WPQP926	Cincinnati-Hamilton, OH-KY-IN
BEA051	WPQP929	Columbus, OH
BEA051	WPQP930	Columbus, OH
BEA055	WPQP935	Cleveland-Akron, OH-PA
BEA055	WPQP936	Cleveland-Akron, OH-PA
BEA063	WPQP945	Milwaukee-Racine, WI
BEA063	WPQP946	Milwaukee-Racine, WI
BEA067	WPQP953	Indianapolis, IN-IL
BEA067	WPQP954	Indianapolis, IN-IL
BEA070	WPQP959	Louisville, KY-IN*
BEA070	WPQP960	Louisville, KY-IN*
BEA071	WPQP961	Nashville, TN-KY
BEA071	WPQP962	Nashville, TN-KY
BEA073	WPQP963	Memphis, TN-AR-MS-KY
BEA073	WPQP964	Memphis, TN-AR-MS-KY
BEA083	WPQP977	New Orleans, LA-MS
BEA083	WPQP978	New Orleans, LA-MS
BEA099	WPQP993	Kansas City, MO-KS
BEA099	WPQP994	Kansas City, MO-KS
BEA125	WPQQ212	Oklahoma City, OK

* Progeny has not yet completed initial construction in the EAs marked with an asterisk, and therefore proposes to meet a single unified milestone in these EAs at six years.

BEA125	WPQQ213	Oklahoma City, OK
BEA130	WPQQ216	Austin-San Marcos, TX*
BEA130	WPQQ217	Austin-San Marcos, TX*
BEA152	WPQQ234	Salt Lake City-Ogden, UT-ID
BEA152	WPQQ235	Salt Lake City-Ogden, UT-ID
BEA153	WPQQ236	Las Vegas, NV-AZ-UT
BEA153	WPQQ237	Las Vegas, NV-AZ-UT

Attachment E
Progeny Call Signs in Remaining 69 EAs
Extension until April 3, 2023*

BEA001	WPQP845	Bangor, ME
BEA001	WPQP846	Bangor, ME
BEA002	WPQP847	Portland, ME
BEA002	WPQP848	Portland, ME
BEA004	WPQP851	Burlington, VT-NY
BEA004	WPQP852	Burlington, VT-NY
BEA005	WPQP853	Albany-Schenectady-Troy, NY
BEA005	WPQP854	Albany-Schenectady-Troy, NY
BEA006	WPQP855	Syracuse, NY-PA*
BEA006	WPQP856	Syracuse, NY-PA*
BEA009	WPQP861	State College, PA
BEA009	WPQP862	State College, PA
BEA011	WPQP865	Harrisburg-Lebanon-Carlisle, PA
BEA011	WPQP866	Harrisburg-Lebanon-Carlisle, PA
BEA015	WPQP871	Richmond-Petersburg, VA
BEA015	WPQP872	Richmond-Petersburg, VA
BEA017	WPQP873	Roanoke, VA-NC-WV
BEA017	WPQP874	Roanoke, VA-NC-WV
BEA021	WPQP881	Greenville, NC
BEA021	WPQP882	Greenville, NC
BEA024	WPQP885	Columbia, SC
BEA024	WPQP886	Columbia, SC
BEA025	WPQP887	Wilmington, NC-SC
BEA025	WPQP888	Wilmington, NC-SC
BEA026	WPQP889	Charleston-North Charleston, SC
BEA026	WPQP890	Charleston-North Charleston, SC
BEA027	WPQP891	Augusta-Aiken, GA-SC
BEA027	WPQP892	Augusta-Aiken, GA-SC
BEA028	WPQP893	Savannah, GA-SC
BEA028	WPQP894	Savannah, GA-SC
BEA032	WPQP901	Fort Myers-Cape Coral, FL
BEA032	WPQP902	Fort Myers-Cape Coral, FL
BEA033	WPQP903	Sarasota-Bradenton, FL
BEA033	WPQP904	Sarasota-Bradenton, FL
BEA035	WPQP907	Tallahassee, FL-GA
BEA035	WPQP908	Tallahassee, FL-GA
BEA038	WPQP909	Macon, GA

* The licenses identified with an asterisk below were included in Progeny's initial showing for its top 40 EAs and therefore do not require a consolidated first and second milestone.

BEA038	WPQP910	Macon, GA
BEA041	WPQP913	Greenville-Spartanburg-Anderson, SC-NC
BEA041	WPQP914	Greenville-Spartanburg-Anderson, SC-NC
BEA043	WPQP915	Chattanooga, TN-GA
BEA043	WPQP916	Chattanooga, TN-GA
BEA044	WPQP917	Knoxville, TN
BEA044	WPQP918	Knoxville, TN
BEA045	WPQP919	Johnson City-Kingsport-Bristol, TN-VA
BEA045	WPQP920	Johnson City-Kingsport-Bristol, TN-VA
BEA047	WPQP921	Lexington, KY-TN-VA-WV
BEA047	WPQP922	Lexington, KY-TN-VA-WV
BEA048	WPQP923	Charleston, WV-KY-OH
BEA048	WPQP924	Charleston, WV-KY-OH
BEA050	WPQP927	Dayton-Springfield, OH
BEA050	WPQP928	Dayton-Springfield, OH
BEA054	WPQP933	Erie, PA
BEA054	WPQP934	Erie, PA
BEA056	WPQP937	Toledo, OH
BEA056	WPQP938	Toledo, OH
BEA059	WPQP941	Green Bay, WI-MI
BEA059	WPQP942	Green Bay, WI-MI
BEA062	WPQP943	Grand Rapids-Muskegon-Holland, MI*
BEA062	WPQP944	Grand Rapids-Muskegon-Holland, MI*
BEA065	WPQP949	Elkhart-Goshen, IN-MI
BEA065	WPQP950	Elkhart-Goshen, IN-MI
BEA066	WPQP951	Fort Wayne, IN
BEA066	WPQP952	Fort Wayne, IN
BEA068	WPQP955	Champaign-Urbana, IL
BEA068	WPQP956	Champaign-Urbana, IL
BEA069	WPQP957	Evansville-Henderson, IN-KY-IL
BEA069	WPQP958	Evansville-Henderson, IN-KY-IL
BEA074	WPQP965	Huntsville, AL-TN
BEA074	WPQP966	Huntsville, AL-TN
BEA075	WPQP967	Tupelo, MS-AL-TN
BEA075	WPQP968	Tupelo, MS-AL-TN
BEA077	WPQP969	Jackson, MS-AL-LA
BEA077	WPQP970	Jackson, MS-AL-LA
BEA078	WPQP971	Birmingham, AL
BEA078	WPQP972	Birmingham, AL
BEA080	WPQP973	Mobile, AL
BEA080	WPQP974	Mobile, AL
BEA081	WPQP975	Pensacola, FL
BEA081	WPQP976	Pensacola, FL
BEA084	WPQP979	Baton Rouge, LA-MS
BEA084	WPQP980	Baton Rouge, LA-MS
BEA085	WPQP981	Lafayette, LA

BEA085	WPQP982	Lafayette, LA
BEA086	WPQP983	Lake Charles, LA
BEA086	WPQP984	Lake Charles, LA
BEA088	WPQP985	Shreveport-Bossier City, LA-AR
BEA088	WPQP986	Shreveport-Bossier City, LA-AR
BEA090	WPQP987	Little Rock-North Little Rock, AR
BEA090	WPQP988	Little Rock-North Little Rock, AR
BEA094	WPQP989	Springfield, MO
BEA094	WPQP990	Springfield, MO
BEA100	WPQP995	Des Moines, IA-IL-MO
BEA100	WPQP996	Des Moines, IA-IL-MO
BEA101	WPQP997	Peoria-Pekin, IL
BEA101	WPQP998	Peoria-Pekin, IL
BEA102	WPQP999	Davenport-Moline-Rock Island, IA-IL
BEA102	WPQQ200	Davenport-Moline-Rock Island, IA-IL
BEA104	WPQQ201	Madison, WI-IA-IL
BEA104	WPQQ202	Madison, WI-IA-IL
BEA116	WPQQ204	Sioux Falls, SD-IA-MN-NE
BEA116	WPQQ205	Sioux Falls, SD-IA-MN-NE
BEA118	WPQQ206	Omaha, NE-IA-MO
BEA118	WPQQ207	Omaha, NE-IA-MO
BEA122	WPQQ208	Wichita, KS-OK
BEA122	WPQQ209	Wichita, KS-OK
BEA124	WPQQ210	Tulsa, OK-KS
BEA124	WPQQ211	Tulsa, OK-KS
BEA132	WPQQ220	Corpus Christi, TX
BEA132	WPQQ221	Corpus Christi, TX
BEA133	WPQQ222	McAllen-Edinburg-Mission, TX
BEA133	WPQQ223	McAllen-Edinburg-Mission, TX
BEA147	WPQQ228	Spokane, WA-ID
BEA147	WPQQ229	Spokane, WA-ID
BEA150	WPQQ230	Boise City, ID-OR
BEA150	WPQQ231	Boise City, ID-OR
BEA151	WPQQ232	Reno, NV-CA
BEA151	WPQQ233	Reno, NV-CA
BEA156	WPQQ238	Albuquerque, NM-AZ
BEA156	WPQQ239	Albuquerque, NM-AZ
BEA157	WPQQ240	El Paso, TX-NM
BEA157	WPQQ241	El Paso, TX-NM
BEA159	WPQQ244	Tucson, AZ
BEA159	WPQQ245	Tucson, AZ
BEA162	WPQQ250	Fresno, CA
BEA162	WPQQ251	Fresno, CA
BEA166	WPQQ255	Eugene-Springfield, OR-CA
BEA166	WPQQ256	Eugene-Springfield, OR-CA
BEA169	WPQQ259	Richland-Kennewick-Pasco, WA

BEA169	WPQQ260	Richland-Kennewick-Pasco, WA
BEA171	WPQQ263	Anchorage, AK
BEA171	WPQQ264	Anchorage, AK
BEA172	WPQQ265	Honolulu, HI
BEA172	WPQQ266	Honolulu, HI
BEA173	WPQQ267	Guam and Northern Mariana Islands
BEA173	WPQQ268	Guam and Northern Mariana Islands
BEA176	WPQQ271	Gulf of Mexico
BEA176	WPQQ272	Gulf of Mexico