Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Spectrum Needs for the Implementation of Positive Train Control Provisions of the Rail Safety Improvement Act of 2008	)))	WT Docket No. 11-79

COMMENTS
OF
THE METROPOLITAN TRANSPORTION AUTHORITY

SUMMARY

The Metropolitan Transportation Authority ("MTA") hereby respectfully submits its comments as solicited by the Commission in its May 5, 2011 Public Notice with respect to spectrum issues related to the implementation of Positive Train Control ("PTC"). The MTA has previously made several filings with the Commission seeking certain relief in connection with acquiring spectrum to meet the 2015 PTC implementation date imposed by Congress, dating back to June 2010. As discussed the need for concerted Commission action to provide spectrum to allow MTA to progress PTC implementation is becoming increasingly urgent.

Driven by the extremely tight PTC implementation deadline, MTA Long Island Rail Road and MTA Metro-North Railroad ("MTA Railroads") have progressed the design of their respective PTC systems. The design work has proceeded with the assumption that spectrum in the interoperable 217-222 MHz range will be acquired by the MTA Railroads. We have no alternative – interoperability is a statutory requirement

and the industry as a whole, led by the Class 1 freights, will utilize radios in this range. However, the finalization of the PTC designs, and in turn the procurement and installation of the systems themselves, is in immediate danger of coming to a complete halt, as the MTA Railroads have not been able to procure the needed spectrum.

The MTA Railroads have initiated a Request for Proposal process, in an attempt to acquire spectrum. This is a confidential public procurement, and we cannot discuss the details of the process; however, certain crucial facts can be discussed. First, the recently initiated Commission proceedings against MC/LM, a license holder in the 217/218 - 219/220 MHz band (the AMTS service), has placed a substantial cloud over our ability to complete a transaction involving AMTS spectrum within the tight timeframe imposed by the PTC requirements. This further constricts the already limited market of sellers who are able and willing to provide usable spectrum.

Moreover, even with AMTS in the picture, it has become clear that no one seller can provide spectrum to meet the complete needs of the MTA Railroads, both in our core operational areas and in required buffer areas. The MTA Railroads operate as hosts and tenants of various freight railroads and as partners and neighbors with other commuter and passenger operations. We must be interoperable with, and able to share limited spectrum resources with, all of these other railroads. If we are unable to acquire sufficient spectrum resources via the open market, and if the FCC will not provide relief, then PTC implementation in our entire region is adversely affected.

Besides spectrum, there are other challenges to meeting the 2015 implementation date, such as inadequate financial resources and continuing challenges in adopting and utilizing unproven technologies in extremely complex operational circumstances.

Nonetheless, spectrum acquisition is a major and increasingly critical impediment to timely and successful PTC implementation.

Accordingly, the MTA Railroads again request prompt action on our prior requests to the Commission. Without limitation, we urge the Commission to act on our prior request for a direct allocation of the spectrum required by the MTA Railroads in the interoperable range – a 500 kHz block. Without such action, the statutory mandate to implement PTC in our area is in increasing jeopardy. In the interim, the immediate allocation of unoccupied spectrum to the MTA Railroads without the necessity of auction or other competitive bidding process is also once again requested.

COMMENTS
OF
THE METROPOLITAN TRANSPORTION AUTHORITY

The Metropolitan Transportation Authority ("MTA"), through counsel and pursuant to Section 1.415 and 1.419 of the Commission's Rules, hereby submits its Comments in the above-captioned proceeding.

I. BACKGROUND

A. The Metropolitan Transportation Authority

The MTA is a public benefit corporation responsible for public transportation in twelve (12) counties in southeastern New York, along with two (2) counties in southwestern Connecticut. MTA Long Island Rail Road ("LIRR") and MTA Metro-North Railroad ("Metro-North") (collectively, "the Railroads" or "the MTA Railroads") are the two busiest commuter railroads in the United States. Together, the two railroads, which share track with Amtrak and freight carriers, provide a critical link between New York City's Central Business District and cities, towns and villages east and north of the City. They carry nearly 600,000 customers on an average weekday on over 2,000 rail cars that travel over nearly 1,500 miles of track.[1]

B. Prior MTA Filings with the Commission related to PTC

The MTA has made various filings before the FCC in connection with the PTC requirements of the Rail Safety Improvement Act of 2008. These filings are briefly summarized as follows:

[1] Our prior filings include a more complete description of the operations of the individual Railroads.

1. MTA's Comments re: Auction 218-219 MHz Services and Phase II 220 MHz Service Licenses - dated June 15, 2010: Consistent with the separately filed request pursuant to Section 337 of the Commission's Rules, the MTA requested that the Commission remove the "B" block from the 218-219 MHz Radio Service Auction, with respect to certain unassigned Cellular Marketing Areas. These are vacant areas where MTA Railroads provide service, and areas directly adjacent to service areas. The MTA requested that the Commission recognize the federal mandate to provide PTC was prompted by concerns for public safety; that the MTA Railroads must use compatible spectrum (within the 217-222 MHz spectrum range as established by the Class 1 freights), and that therefore the Commission should find that the provision of PTC is an appropriate circumstance for the allocation of spectrum by a mechanism other than auction.[2]

2. The MTA's Waiver Request Pursuant to Section 337(c) and Section 1.925 - dated June 18, 2010: Seeking the relief as set forth in (1), as eligible as a public safety system under Section 337(c), or in the alternative as a waiver pursuant to Section 1.925.

3. The MTA's Comments to the Review of the Commission's Part 95 Personal Radio Services - dated July 22, 2010: As the IVDS band has been largely dormant for 15 years, MTA urged that the Commission recognize the federal mandate to provide PTC,

[2] If the FCC makes the allocation of former IVDS spectrum for PTC use, the Commission should conduct an expedited rule making proceeding to revamp its technical rules for the band in order to harmonize PTC needs, which differ from the original conception of IVDS, with the need to ensure that no interference is caused to adjacent TV Channel 13.

which was prompted by concerns for public safety and requires interoperability amongst the railroads, mandates that the Commission make available radio spectrum; and therefore, requests that the Commission allocate one of the two blocks of 218-219 MHz spectrum for PTC use on a nationwide basis. The MTA also requested that the Commission conduct an audit to determine whether the remaining 218-219 MHz Radio Service licenses are in fact operational.

4. The MTA's Comments In the Matter of Amendments of numerous Parts, to establish certain uniform rules - dated August 6, 2010: Supporting the FCC's goals to establish uniform rules re construction, operation and renewal of licenses, to ensure that spectrum is not held for years by entities with no real intent to construct, operate and/or (where required) serve the public; and that the Commission be aggressive in seeking recovery of spectrum where the licensee has done nothing more than make minimal efforts to meet construction rules, and then has de-constructed the facilities for years without any attempt to re-construct. The MTA urged that the Commission not reward spectrum warehousing where it may affect the nation's safety and economy.

Respectfully, we note that here has been no action by the Commission with respect to the MTA filings and requests. As noted in these comments, the urgency of these requests grows every day.

C. The MTA's Attempt at Spectrum Acquisition

The MTA has been pursuing the acquisition of spectrum since the PTC mandate was imposed. We have previously informed the Commission of our difficulties given the limited licenses that may be available in our region. More recently, in February, 2011, the MTA Railroads jointly issued an RFP seeking 500 kHz of spectrum in the interoperable 217-222 MHz range, for an area covering our core operating territories and needed buffer areas. This procurement is ongoing, and we are not at liberty to discuss any of the specifics concerning this ongoing public procurement.

Nonetheless, certain crucial facts can be discussed. As we have previously written, the only substantial blocks available within the interoperable range for our core operating areas, or at least part of our core areas, are in the IVDS and AMTS ranges, and there are incumbent license holders in these areas. However, there are substantial issues with respect to these licenses that greatly impact our ability to purchase required spectrum.

First, the recently initiated Commission proceedings against MC/LM, a license holder in the 217-219MHz range (the AMTS service), has placed a substantial cloud over our ability and the ability of other passenger rail operations we share territory with to complete a transaction involving AMTS spectrum within the tight timeframe imposed by the PTC requirements. This further constricts the extremely limited market of sellers who are able and willing to provide usable spectrum.

Second, with respect to IVDS, we have raised before the Commission concerns about whether at least one of the two license holders in the New York City metropolitan region properly constructed the license, and whether if the license was constructed, it has

since been de-constructed and therefore not continually operated as required by the Commission's rules. The uncertain status of such license, and indeed questions about the interpretation of the rules concerning construction status as applied to IVDS, creates additional uncertainty in this process.

Moreover, it has become clear that no one seller of either IVDS or AMTS spectrum in the New York City metropolitan region can provide spectrum to meet the complete needs of the MTA Railroads. Of the core Metro-North operating counties, four counties in the IVDS service are vacant (New Haven, Fairfield, Duchess and Rockland) and not held by licensees, and we have previously requested assignment of those vacant counties directly from the FCC. In terms of offers received by the MTA Railroads, AMTS does not cover all of these vacant counties, and of course AMTS is otherwise under the cloud of the FCC's Order to Show Cause. The problem is exacerbated when important buffer counties are considered.

In sum, issues of cost aside (which are substantial and not at all insignificant for the MTA Railroads), it is apparent that under the best of circumstances we do not have the ability to make a purchase that will meet all or even substantially most of our PTC spectrum needs. Without the ability to do so, the entire PTC project is put at risk.

D. Design, Procurement and Installation of the MTA PTC Systems

Following the imposition of the PTC mandate, the MTA Railroads contracted with a joint venture of major engineering firms (AECOM/Systra) to design their respective PTC systems. Our consultant has progressed this work, defining the Railroad's spectrum needs and system design as it relates to the deployment of the PTC

radio system. As we have had no choice, this work has been done under the assumption that the MTA Railroads would acquire sufficient spectrum in the interoperable range.

The MTA Railroads have followed this up with requests to the Commission for limited licenses to accomplish testing on our lines. We appreciate the Commission's prompt response to these requests.

However, with the design virtually complete, we are now at a crucial juncture. In order to have any chance of meeting the 2015 deadline, the Railroads must solicit contracts for the procurement, integration and installation of the PTC systems. This includes wayside systems covering hundreds of miles of tracks and radios that must be installed in thousands of train cars.

Overall, the MTA Railroads anticipate expenditures of at least $650 million in order to implement PTC. There is an extremely high level of risk if we are to proceed with this huge public investment without reasonable assurance that we will be able to obtain spectrum in the interoperable range. On the other hand, not proceeding will delay the project and increase the risk of not complying with the deadline.

Thus, the MTA Railroads are in need of immediate relief with respect to the acquisition of spectrum.

E. <u>Response to Specific Technical Questions</u>

The Commission's Public Notice seeking comment included requests for certain technical information related to the Railroads' operations and requirements. Generally, this information has already been provided by the MTA Railroads in prior filings (see, e.g., Waiver Request of MTA Pursuant to Section 337(c) and Section 1.925, dated June

18, 2010, pp. 6-8). The following response summarizes and/or augments the previously provided information, as follows:

(1) General PTC requirements and the MTA Railroads' area of operation:

The Rail Safety Improvement Act of 2008 ("RSIA") and subsequent 49 CFR Part 236 Subpart I define the responsibilities of each railroad in providing for an interoperable PTC system. As defined (and subject to cost apportionment between the railroads), the Host is responsible for providing a PTC system for its operation and any Tenant that operates over the Host's railroad. Securing any radio spectrum required to operate the PTC system is the responsibility of the Host. The Host is also responsible for ensuring that each tenant operates trains equipped with interoperable PTC systems when operating on the Host's railroad. A significant challenge is ensuring that the radio system operated by each Host is compatible at the transition for one railroad to the adjacent railroad. The specific challenge for the MTA Railroads is the interfaces between Metro-North, LIRR and the Tenants.

Listed below are the tenants for Metro-North and LIRR.

Metro-North Tenants:

a) Amtrak
b) CSX Transportation
c) Norfolk Southern
d) Canadian Pacific Railway
e) New York, Susquehanna & Western
f) Pan American Railway
g) Providence & Worcester
h) New Jersey Transit Rail Operations
i) Housatonic Railroad

LIRR Tenants:

a) New York and Atlantic

b) Amtrak

To provide for a uniform and consistent PTC system, each of the railroads on the North East Corridor has agreed to utilize the Advanced Civil Speed Enforcement System (ACSES). This PTC system is an overlay on the current cab signal system already deployed by each railroad. The ACSES system requires information to be conveyed from the wayside to the train dynamically as the train is operating at speed. The information includes Temporary Speed restrictions and interlocking status (position of switches and status of wayside signals).

Providing the necessary radio coverage within the New York City area is especially difficult. The combined train operation of Amtrak, New Jersey Transit, Metro-North and LIRR alone (not even including the freights) represent the largest density of trains operated in the United States within a 10 mile radius. Operations in the core counties of Bronx, Kings, Queens and New York are the most dense, involving the largest number of trains and railroads. Under the ACSES PTC system, each interlocking will receive a minimum of one radio base with a unique channel and will be capable of communicating with up to 12 trains. Given the unique geography and railroad configurations of the Metro-North and LIRR interlocking layout and locations, as many as 6 unique channels will be required within a 5 mile segment. This is due to the separation between interlocking being approximately one-half mile in many cases. Channel reuse will be a challenge.

The attached map depicts the counties within which the Railroads have trackage operations, as well as the buffer areas needed to protect operations. Table 1 represents a summary listing of trackage counties and buffer counties, and indicates which counties are allocated or unallocated to licensees within the IVDS band.

(2) Required bandwidth: In order to meet the radio coverage necessary to implement PTC, the MTA Railroads have performed a preliminary propagation study. Given the density and location of interlockings and the distance between various rail divisions, the Railroads will require 40 - 12.5 KHz channels, approximately 20 for Metro-North and 20 for LIRR – a minimum total of 500 KHz. The 12.5 KHz channel is consistent with other North East Corridor railroad operation.

(3) Specific operational factors affecting spectrum requirements: The MTA Railroads operate trains up to 90 MPH with a majority of train speeds at 60 MPH. Metro-North supports over 660 trains per day, while LIRR supports 750 trains per day. The MTA Railroads have a total of 150 interlockings (not including Amtrak interlockings). The majority of rail operations occur on 4-track mainlines. Mott Haven and Harold interlockings are a sample of the 4-track mainline operation. The outer territories operate on 2-track mainlines with some single track operations. The number of channels at each interlocking is driven by rush hour operations. During the AM and PM rush hours, the quantities of trains significantly increase. A minimum of 12 trains can be scheduled to be adjacent to a single interlocking. As the train approaches the interlocking it is assigned a hailing channel. Once the initial connection is made with the base radio, a time slot will

be assigned to the train. The train relinquishes the slot when it enters the interlocking and requests the slot at the next interlocking. Freight train operation occurs during off-peak times (10 AM to 4 PM) and a night time (12 Midnight to 5 AM).

(4) Required the spectrum coverage: Referring to the attached map, the location of the MTA Railroads' right-of-way requires radio coverage in a significant portion of most referenced counties. The right-of-way locations for the Railroads can best be described as a "tree" configuration. Originating in Grand Central Terminal or Penn Station, each rail line divides and runs parallel to adjacent lines. In many cases, the distance between lines is 3 to 6 miles. Use of overlapping channels is expected. Additionally, the right-of-ways are not linear. Given the curves approaching the interlocking, it is necessary to direct the antenna coverage in a wide pattern. All of this results in the need for significant areas of total spectrum needs, both in terms of primary operating counties and buffer counties.

(5) Availability of spectrum from other railroads and other sources: The MTA Railroads have spent over a year in attempting to obtain useable spectrum, without success. Our significant needs and the number of channels available limit the possible solutions. As previously indicated, the Host must provide the necessary radio channels. Other railroads, include the Class 1 freight consortium, cannot begin to address our needs.

(6) Status of Testing: With the assistance of the Commission, the MTA Railroads have gained access to frequencies for testing purposes. We are at the initial stages to testing the validity of our design and prototype systems.

V. CONCLUSION

As demonstrated herein, the need for spectrum to support PTC implementation by the MTA Railroads is urgent. Without limitation, we urge the Commission to act on our prior request for a direct allocation of a block of 500 kHz of spectrum to the MTA Railroads in the interoperable range. Without such action the Congressional mandate to implement PTC in our area is in increasing jeopardy. On an interim basis, the immediate allocation of unoccupied spectrum to the MTA Railroads without the necessity of an auction or other competitive bidding process is also once again requested.

WHEREFORE, the premises considered, it is respectfully requested that the Commission act in accordance with the views expressed herein.

Respectfully submitted,

METROPOLITAN TRANSPORTATION AUTHORITY

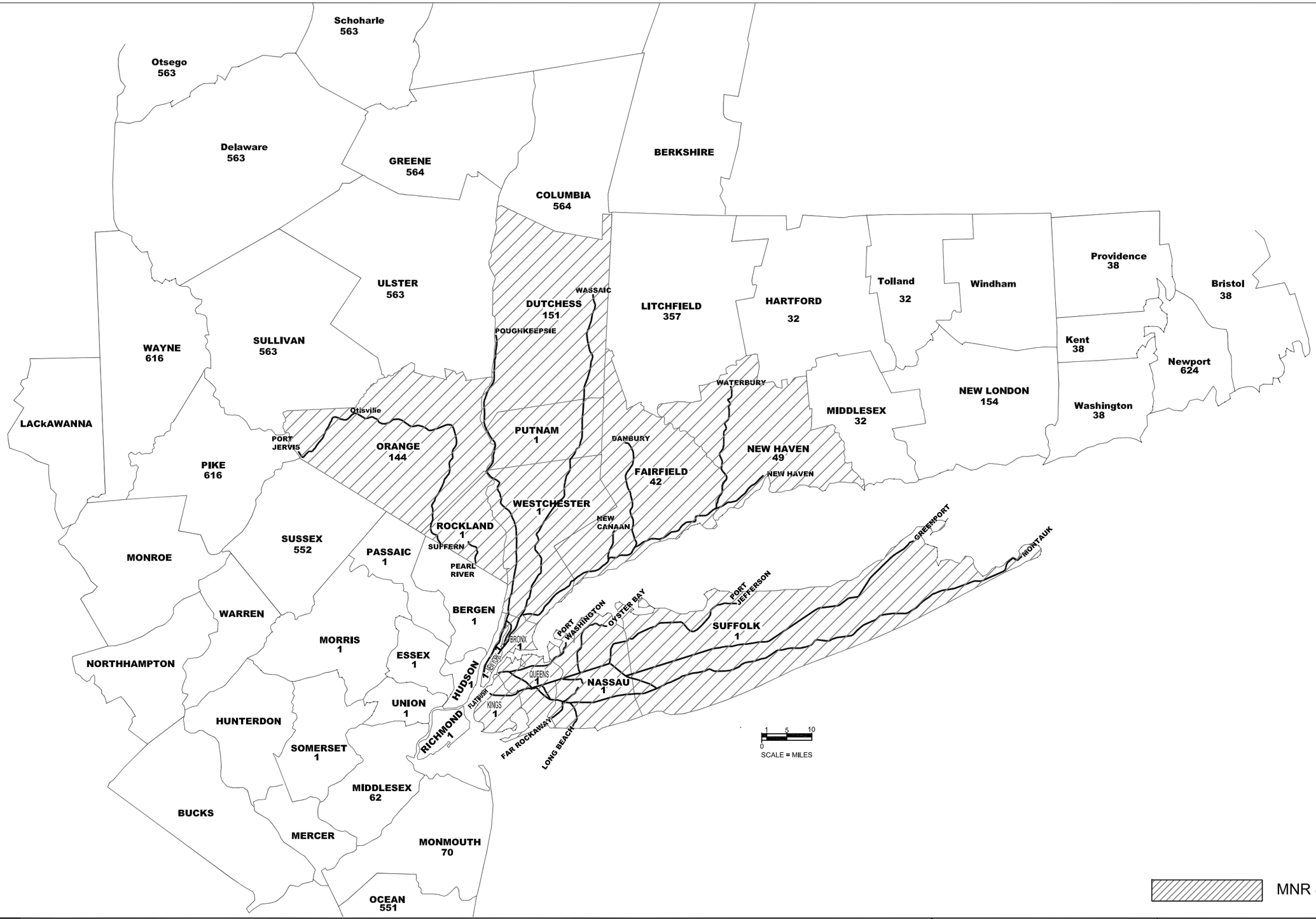
By: Seth Cummins
Vice President - General Counsel
MTA Metro-North Railroad

347 Madison Avenue
New York, NY 10017
212-340-4933

By: Catherine A. Rinaldi
Vice President - General Counsel & Secretary
MTA Long Island Rail Road

Jamaica Station
Jamaica, NY 11435
718-558-8264

Date: June 20, 2011



Long Island Rail Road

Metro-North Railroad

TITLE	CONTRACT NO. PTC	
MNR/LIRR IVDS COVERAGE TRACKAGE & BUFFER COUNTIES	SCALE: NONE	DATE: 06-20-2011
	DRAWING NO.	
	SHEET OF	

Table 1 – PTC Spectrum Requirements Within IVDS Blocks								
			IVDS		Metro-North Requirements		LIRR Requirements	
County	State	CMA Number	Block A	Block B	Trackage	Buffer	Trackage	Buffer
Orange	NY	144	U	U	X			
Dutchess	NY	151	U	U	X			
Bronx	NY	1	P	P	X			
Westchester	NY	1	P	P	X			
Rockland	NY	1	P	P	X			
Putnam	NY	1	P	P	X			
New York	NY	1	P	P	X		X	
Kings	NY	1	P	P			X	
Queens	NY	1	P	P			X	
Nassau	NY	1	P	P			X	
Suffolk	NY	1	P	P			X	
Richmond	NY	1	P	P		X		X
Sullivan	NY	563	U	U		X		
Ulster	NY	563	U	U		X		
Delaware	NY	563	U	U		X		
Columbia	NY	564	U	U		X		
Greene	NY	564	U	U		X		
Bergen	NJ	1	P	P		X		X
Essex	NJ	1	P	P		X		X
Hudson	NJ	1	P	P		X		X
Morris	NJ	1	P	P		X		X
Passaic	NJ	1	P	P		X		X
Somerset	NJ	1	P	P		X		X
Union	NJ	1	P	P		X		X
Middlesex	NJ	62	U	U		X		X
Monmouth	NJ	70	U	U		X		X
Ocean	NJ	551	U	U				X
Sussex	NJ	552	U	U		X		
Warren	NJ	58	U	U		X		
Fairfield	CT	42	U	U	X			
New Haven	CT	49	U	U	X			
Hartford	CT	32	U	U		X		
Middlesex	CT	32	U	U		X		
Tolland	CT	32	U	U		X		
Litchfield	CT	357	U	U		X		
New London	CT	154	U	U				X
Pike	PA	616	U	U		X		
Monroe	PA	56	U	U		X		
Wayne	PA	616	U	U		X		
Bristol	RI	38	U	U				X
Kent	RI	38	U	U				X
Providence	RI	38	U	U				X
Washington	RI	38	U	U				X
Newport	RI	624	U	U				X

U = Unassigned counties controlled by the FCC (yellow highlighting)
P = Private licensees
X = Required trackage or buffer county (as indicated)