April 25, 2000

D.T.E. 99-11

Petition of Lockheed Martin IMS, the North American Numbering Plan Administrator, for area code relief for the 508, 617, 781 and 978 area codes in Eastern Massachusetts.

D.T.E. 99-99

Proceeding by the Department of Telecommunications and Energy to conduct mandatory thousands-block number pooling trials pursuant to the authority delegated by the Federal Communications Commission In the Matter of Massachusetts Department of Telecommunications and Energy's Petition for Waiver of Section 52.19 to Implement Various Area Code Conservation Methods in the 508, 617, 781, and 978 Area Codes, CC Docket No. 96-98, FCC 99-246, NSD File No. L-99-19 (September 15, 1999).

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D.T.E. 99-11/99-99 Page i

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

Attorney General Attorney General of the Commonwealth

AT&T AT&T Communications of New England, Inc.

BA-MA Bell Atlantic Massachusetts

BAM Bell Atlantic Mobile

CLEC Competitive Local Exchange Carrier

Conversent Conversent Communications of Massachusetts, LLC

Department Department of Telecommunications and Energy

FCC Federal Communications Commission

Focal Focal Communications Corporation of Massachusetts

Global NAPS Global NAPS, Inc.

ILEC Incumbent Local Exchange Carrier

LATA Local Access Transport Area

LNP Local Number Portability

MBFAA Massachusetts Burglar and Fire Alarm Association

MCIW MCI Worldcom

MediaOne MediaOne Telecommunications of Massachusetts, Inc.

MSA Metropolitan Statistical Area

NANC North American Numbering Council

NANP North American Numbering Plan

NANPA North American Numbering Plan Administrator

NECTA New England Cable Television Association

Nextel Nextel Communications, Inc.

NPA Numbering Plan Area

NPAC Numbering Portability Administration Centers

Norfolk Norfolk County Internet

NXX Exchange Code, or the second three digits of a telephone number

Omnipoint Omnipoint Communications MB Operations, LLC

RCC Rate Center Consolidation

RCN RCN-BecoCom, LLC.

Sprint Sprint Spectrum L.P. d/b/a Sprint PCS

TNP Thousands-block Number Pooling

UNP Unassigned Number Porting

ORDER

I. INTRODUCTION

Over the past six years, a number of states across the country have implemented new area codes. In the ten-year period from 1984 to 1994, only nine new area codes were introduced in the United States. By contrast, in the six years between 1994 and 1999, demand for telephone numbers led to the creation of 126 new area codes.[(1)] The demand for these numbers is increasing each year.[(2)] In fact, it is projected that the supply of area codes in the North American Numbering Plan ("NANP") area, which includes North America and the Caribbean, may be depleted within the next ten years.[(3)]

The unprecedented strength of the nation's economy is exponentially driving demand in the telecommunication and information services sector. These new area codes are necessary to satisfy the ever-increasing demand for wireless services, fax lines, modems, pagers, Internet access lines, and distinctive ring service, as well as to serve the needs of dozens of new telephone companies who compete with established local exchange carriers. States and the FCC have devoted considerable resources to address the need for more numbers over the last several years to find solutions that will delay or prevent the need for new area codes. However, for many states like Massachusetts, the tools available to fashion the solutions have not been enough.[(4)]

After a comprehensive investigation, the Department of Telecommunications and Energy ("Department") has concluded that the available conservation measures, whether taken singly or combined, would not be sufficient to forestall the need for new area codes in Eastern Massachusetts. Therefore, to protect and propel the state's economic growth, the Department determines that new area codes are needed for the geographic areas served by the 508, 617, 781, and 978 area codes,[(5)] and will implement new area codes using the "overlay" method beginning May, 2001. No solution can satisfy everyone, on every

point, but the overlay method has near unanimous support among participants in the Department's investigation and has in the past enjoyed the support of public commenters.[(6)] Overlay also is the right technical and economic answer to the current problem.

In this Order, initially we discuss at length the steps the Department has taken over the last several years in an attempt to prevent the need for new area codes; the reasons why the most promising of these measures, thousands-block number pooling ("TNP"),[(7)] can not be successful in further delaying the need for new area codes in Eastern Massachusetts; and, finally, the reasons for selecting the overlay method as the preferred method of area code relief for Massachusetts telecommunications consumers and providers.

II. SUMMARY OF DEPARTMENT CONSERVATION ACTIVITIES

On January 23, 1997, the Department ordered a geographic split of the 617 and 508 area codes to create two new area codes -- 781 and 978 -- to be fully implemented beginning May 1, 1998. Investigation by the Department of Public Utilities on its Own Motion to Adopt a Plan for Addressing the Limited Number of Exchange Codes Remaining in Eastern Massachusetts' 617 and 508 Area Codes, D.P.U. 96-61 (1997) ("Area Code Relief"). These new area codes were expected to alleviate the need for further area code relief for several years. However, on March 4, 1998, a little less than two months before the new areas codes were to be implemented, the NPA Code Administrator[(8)] notified the Department that an unexpectedly high demand for new exchange codes[(9)] put the 508 and 617 area codes in jeopardy[(10)] of exhausting the available supply of exchange codes. Then, on May 12, 1998, the NPA Code Administrator notified the Department that the 781 and 978 area codes were also in jeopardy. Thus, even as telephone numbers were first being assigned from the new area codes, the four area codes in Eastern Massachusetts were in danger of exhausting, absent effective conservation measures. Since early 1998, when the prospect of area code exhaustion became manifest, the Department, in conjunction with the carriers, has devoted substantial effort to averting the need for area code relief.

In response to the jeopardy declarations, the industry immediately implemented mandatory rationing procedures for the four area codes.[(11)] Under those procedures, carriers submitted requests for exchange codes to NeuStar. NeuStar assigned exchange codes on a lottery basis at the rate of six codes per month for the 508 and 617 area codes, eight codes per month for the 781 area code, and ten codes per months for the 978 area code.

Simultaneously with the adoption of these rationing procedures, the Department pursued conservation measures to extend the lives of the area codes and, if possible, to push out, to a much later date, the need for new area codes altogether. On April 24, 1998, the Department opened its Area Code Conservation docket, D.T.E. 98-38. The investigation was to address, among other things, three issues: (1) where and how the existing telephone numbers have been used; (2) whether measures could be implemented to

conserve exchange codes within Eastern Massachusetts; and (3) whether there is a need for area code relief at this time. The initial scope of the investigation was broad, examining a variety of methods to conserve exchange codes,including virtual number pooling,[(12)] rate center consolidation,[(13)] and unassigned number porting ("UNP").[(14)] Virtual number pooling initially showed some promise. The Department examined proposals for virtual number pooling filed by NeuStar, the Attorney General of the Commonwealth, and an industry group. The Attorney General and industry proposals had similarities, and the industry proposal has been in use since August, 1998**.**

On September 28, 1998, the FCC issued its Pennsylvania Numbering Order,[(15)] which greatly restricted the ability of state commissions to implement code conservation methods, including virtual number pooling, without prior FCC approval.[(16)] The FCC continued to allow states to order rate center consolidation without prior FCC approval, however.

In response, the Department shifted its focus in D.T.E. 98-38 on (1) investigating rate center consolidation and other code conservation methods, (2) encouraging voluntary code conservation, and (3) pursuing additional delegation of authority from the FCC to conserve exchange codes.

The rate center consolidation investigation has assessed two alternative plans: a regional-consolidation plan and a single-rate-center plan. The regional call plan would consolidate the existing 202 rate centers in Eastern Massachusetts into 25 rate centers. The single rate center plan would consolidate the 202 rate centers into one rate center for all of Eastern Massachusetts. Feasibility studies were submitted by New England Telephone and Telegraph Company d/b/a Bell Atlantic-Massachusetts ("BA-MA") addressing these two plans. To date, the Department has conducted extensive discovery, taken testimony and comments, and held hearings and technical sessions to evaluate the merits of the two rate center consolidation proposals.

On February 18, 1999, to encourage voluntary code conservation efforts, the Department issued a request to carriers to return voluntarily exchange codes they no longer needed. This effort proved fruitful: two carriers - Level 3 Communications ("Level 3") and LBC Telephony ("LBC") - returned a number of exchange codes. In February 1999, LBC returned 60 exchange codes in the 781 and 978 area codes, extending the lives of the 781 and 978 area codes by several months. In May 1999, Level 3 returned 164 exchange codes from the 508 and 617 area codes, extending the lives of those area codes by about a year, to the current exhaust dates of first quarter 2002 and second quarter 2001, respectively.

In conjunction with its D.T.E. 98-38 investigation, the Department sought to obtain additional code conservation authority from the FCC. The Department filed a petition with the FCC on February 17, 1999, seeking additional authority to: (1) reclaim unused and reserved exchange codes; (2) maintain the current rationing measures for at least six months after implementation of all the area code relief plans; (3) revise rationing procedures; (4) hear and address claims of carriers seeking additional codes outside of the

rationing plan; (5) set code allocation standards; (6) institute TNP; (7) implement extended local calling areas; (8) implement inconsistent rate centers (i.e., where the rate center boundaries of a competitive local exchange carrier ("CLEC") do not match the rate center boundaries of the incumbent local exchange carrier ("ILEC") in a given area); and (9) implement UNP.

On May 4, 1999, the Department, concerned that the industry would weaken the rationing rules, issued a letter to the industry alerting carriers to the need to retain the current rationing system and to return more unused exchange codes. Then, on May 10, 1999, the Department sent a supplemental request to the FCC, asking the FCC to require NeuStar and the industry to maintain the current rationing system.

On June 18, 1999, commissioners and staff from the Department, along with others from New England, met with members of the FCC and members of the Massachusetts congressional delegation to gather support for the Department's petition for additional conservation authority. On September 15, 1999, the FCC, in large part, granted the Department's petition. In the Matter of Massachusetts Department of Telecommunications and Energy's Petition for Waiver of Section 52.19 to Implement Various Area Code Conservation Methods in the 508, 617, 781, and 978 Area Codes, CC Docket No. 96-98, FCC 99-246, NSD File No. L-99-19 (September 15, 1999). Specifically, the FCC gave the Department conditional authority to "institute thousands-block pooling trials; reclaim unused and reserved exchange codes, and portions of those codes; maintain rationing procedures for six months following area code relief; set numbering allocation standards; and hear and address claims of carriers seeking numbering resources outside of the rationing process." Id. at 1. The FCC found that the Department already had the authority to authorize carriers to use inconsistent rate centers and extended local calling areas. Id. Finally, the FCC denied the Department's request for authority to implement UNP and declined to address the Department's request to revise NXX code rationing procedures. Id.

Using this grant of additional authority from the FCC, the Department opened docket D.T.E. 99-99 on October 12, 1999, to institute TNP trials for Eastern Massachusetts. Proceeding by the Department of Telecommunications and Energy to Conduct Mandatory Thousands-block Number Pooling Trials, D.T.E. 99-99 (1999) ("Number Pooling Order"). The Number Pooling Order required all LNP-capable carriers in Massachusetts to participate in mandatory TNP trials. Id. at 7. The Department proposed to conduct the first pooling trial in the Metropolitan Statistical Area ("MSA") encompassing the Greater Boston region (comprising the 617 and 781 areas in their entirety as well as significant portions of the 508 and 978 areas) ("Greater Boston MSA"). Id. at 5.

Until recently, industry procedures neither required carriers to prove--nor required NeuStar to verify--actual carrier need for numbering resources. Over the last year, the Department has gathered and analyzed extensive evidence to verify industry forecasts of demand for numbering resources and to determine whether actual utilization is consistent

with projected carrier demand. The Department issued four sets of data requests and one subpoena to carriers and NeuStar.[(17)]

On January 27, 2000, the Department ordered all carriers to meet certain "fill-rate"[(18)] requirements and to demonstrate need before receiving additional codes. See January 27, 2000 Letter Order. The Department required carriers to achieve a 75 percent fill-rate in all NXX codes in a given rate center before obtaining additional NXX codes in that same rate center. Id. at 3. Since beginning to enforce fill-rate requirements, the Department has denied exchange codes to four carriers.[(19)],[(20)]

Finally, in response to concerns that certain carriers might be selling exchange codes, in violation of code assignment guidelines, the Department issued subpoenas to all exchange code holders in Eastern Massachusetts on February 24, 2000. Responses from MediaOne of Massachusetts, Inc. ("MediaOne") and Norfolk County Internet ("Norfolk") indicated that Norfolk had contacted MediaOne in late January and early February, 2000 for the apparent purpose of offering the sale of Norfolk, including exchange codes already assigned to Norfolk, to MediaOne.

III. THOUSANDS-BLOCK NUMBER POOLING (D.T.E. 99-99)

A. Procedural History

As noted above, the Department opened D.T.E. 99-99 by Order dated October 12, 1999. In that Order, the Department requested comments on cost recovery, fill-rate ratios, and the extent, if any, that TNP would require carriers to alter their operations support systems and Year 2000 preparations. Comments were filed by the Attorney General and the following carriers: Allegiance Telecom, Inc. ("Allegiance"), AT&T Communications of New England, Inc. ("AT&T"), BA-MA, Bell Atlantic Mobile ("BAM"), Conversent Communications of Massachusetts, LLC ("Conversent"), Focal Communications Corp. of Massachusetts ("Focal"), MediaOne, MCI-Worldcom ("MCIW"), Nextlink Massachusetts, Inc., Nextel Communications, Inc. ("Nextel"), RCN-BecoCom, Inc. ("RCN"), Cellular One, and Sprint Spectrum L.P. d/b/a Sprint PCS ("Sprint PCS"). The Department held an implementation meeting on October 21, 1999 to discuss the details of implementing TNP in the Greater Boston MSA. The Department issued four sets of data requests to Massachusetts exchange code holders on November 18 and 24, 1999, and February 10 and 25, 2000. A technical session was held January 24, 2000 to discuss TNP implementation costs, particularly BA-MA's costs. On January 20, 2000, at the Department's request, BA-MA filed a proposed implementation schedule for industry-wide TNP ("BA-MA TNP Proposal"). Comments on BA-MA's TNP Proposal were filed by the Attorney General and the following carriers: Allegiance, AT&T, Focal, MediaOne, MCIW, NEXTLINK, Nextel, and RCN. In its proposal, BA-MA estimates that its cost to implement TNP would be $7.9 million, of which $5.2 million would be specific to Massachusetts and $2.7 million would be shared costs for the states in the Bell Atlantic North region (id. at 4)[(21)]. B. Analysis and Findings

Of all the number conservation solutions investigated by the Department, mandatory TNP appeared to provide the most feasible method of delaying or preventing the need for new area codes with the least adverse effect on customers. Appearance was not reality, however. In order for TNP to be successful, TNP would have to provide adequate numbering resources to all carriers, both wireline and wireless. As we explain below, we find that TNP (as reflected in BA-MA's TNP Proposal) would ultimately be unsuccessful in providing adequate numbering resources for both wireless and wireline carriers in Eastern Massachusetts. Its initial promise cannot be realized in fact.

In its investigation of TNP, the Department first had to determine whether there were enough unused exchange codes in each area code to satisfy the needs of wireless carriers. The FCC has exempted wireless carriers from participating in LNP until at least November of 2002.[(22)] This exemption proved to be TNP's crippling constraint. As discussed above at note 7, TNP is based on LNP technology; therefore, any carrier that is exempt from LNP or otherwise not LNP-capable is unable to use numbering resources in blocks of 1,000 numbers and must continue to be assigned full exchange codes of ten thousand numbers until they become LNP-capable. This means that there has to be a sufficient supply of full (i.e., ten-thousands-block) exchange codes to serve those carriers until at least November of 2002, if they are to be able to serve their customer base. Current data, as displayed in Table 1 below, show that neither the 508 nor the 617 area code has a sufficient inventory of unassigned exchange codes available to meet the forecast demands of wireless carriers through the end of 2002.

Table 1

Total forecast NXX demand, wireless carriers: Available NXX Codes:

Area Code 2000 2001 2002 Total

508	18	17	19	54		0
617	26	27	30	83		7
781	8	11	9	28		138
978	11	12	14	37		191

Table 1's message is stark and inescapable. Unless new area codes are implemented as soon as possible, Massachusetts consumers would soon face a situation where new wireless service customers in 508 and 617 would be unable to receive service. Permitting such a situation to develop would be intolerable to Massachusetts consumers and would stifle telecommunications business development in the Commonwealth. The Department must act to prevent it.

Moreover, even if there were sufficient exchange codes for wireless carriers (which there are not in 617 and 508), we would then need to determine whether there is a sufficient quantity of uncontaminated or minimally-contaminated[(23)] thousands-blocks for use by wireline carriers, in order for TNP to be successful.[(24)] As Table 2 below demonstrates, wireline carriers reported a forecast thousands-block demand in 508 and 617 that exceeds the supply of thousands-blocks and full exchange codes available for assignment, reclamation, and pooling purposes. Because there is not a sufficient supply of thousands-blocks and full exchange codes to meet demand, the conclusion, though unwelcome, is also inescapable: TNP also cannot solve the numbering problems for wireline carriers in the 508 and 617 area codes.**Table 2**

Total forecast thousands-block Total thousands-block supply,

demand, wireline carriers: wireline carriers only:

Area Area ≤ 10%

Code 2000 2001 2002 Total Code Vacant Contaminated Total

508	452	644	637	1733	508	776	436	1218
617	634	598	703	1935	617	491	316	807
781	706	641	656	2003	781	1034	543	1577
978	456	553	563	1572	978	1250	441	1691

Accordingly, we find, based on these aggregate data, that TNP would not prolong the lives of the 617 and 508 area codes. The supply of exchange codes in the 508 and 617 area codes is far too depleted to benefit from TNP. Consequently, we conclude that new overlay area codes must be introduced for the 617 and 508 area codes.

While Tables 1 and 2 suggest that TNP possibly could be successful in delaying the need for new area codes in 781 and 978 for a short period of time, a careful analysis of those numbers in addition to other important factors convinces us that we should also adopt new overlay area codes for 781 and 978. In the interest of regulatory clarity and consumer certainty, we do so.

First, in the 781 area code, wireline carriers forecast their demand at 2003 thousands-blocks, while only 1577 thousands-blocks are available for pooling. This leaves a deficit of approximately 426 thousands-blocks in 781, or the equivalent of 43 full (i.e., 10,000-number block) exchange codes. This calculation means that an additional 43 full exchange codes will need to be drawn from the supply in 781. In the 978 area code, wireline carriers estimate their demand at 1572 thousands-blocks, compared with a supply of 1691 thousands-blocks. This only leaves a razor-thin margin of 119 thousands-blocks in 978 over the next three years. If past trends prove anything, hopeful reliance on a razor-thin margin is imprudence itself.

Second, even with the implementation of TNP, it is likely that any delay in the need for new area codes in 978 and 781 would be brief indeed. If the Department were to order mandatory TNP for 781 and 978, TNP could not be operational in less than six months. During the six month delay, full exchange codes would continue to be assigned at the rate of 8 per month from 781, and 10 per month from 978, according to the existing jeopardy procedures.

The arithmetic is relentless and unforgiving. We start from the current supply of 138 exchange codes in 781. We then subtract (1) the wireless demand for 28 full exchange codes in 781, (2) the 43 full exchange codes needed to make up the thousands-block shortfall for wireline carriers, and (3) the 48 exchange codes that would be assigned under jeopardy procedures while awaiting the implementation of TNP. We end up with only 19 full exchange codes remaining in 781. That is an extremely thin margin on which to rest an expectation that 781 will not exhaust its supply of exchange codes. Putting Eastern Massachusetts through another round of area code change in pursuit of so slim a hope would be vain and futile. In addition, the carriers' supply of available thousands-blocks has likely declined due to customer demand since the data were provided by the carriers in December, 1999. Furthermore, Tables 1 and 2 reflect the forecast demand of only those carriers already doing business in Massachusetts, *and necessarily omit the demand for numbering resources by new market entrants yet to be heard from (e.g., 89 new CLECs registered with the Department in the past two years)*. When still more new carriers emerge, those 19 exchange codes will disappear quickly. Therefore, the Department concludes that the 781 area code is too depleted to make TNP successful.

The outlook for mandatory TNP in the 978 area is similarly constrained. There are currently 191 full exchange codes remaining in 978. Once subtraction occurs for (1) the 37 exchange codes needed to meet wireless demand in 978 and for (2) the 60 exchange codes that would be assigned under jeopardy procedures while awaiting the implementation of TNP, there would only be 94 codes remaining in 978. As discussed above, we then need to take into account that the forecast demand listed in the above tables is several months old and includes only carriers that are currently in the market. Also, there is the possibility that, if technically feasible, we may need to take some of the remaining exchange codes in 978 to meet demand from wireless carriers in 617 and 508 until new area codes are fully implemented. Therefore, the Department concludes that 978 is also too depleted to benefit from TNP.

In addition to the threshold question of numbering resource supply, there are other important factors to consider in determining whether to implement TNP prior to the FCC's national TNP roll-out. BA-MA's TNP Proposal will cost approximately $8 million to implement, with most of that cost being passed on to Massachusetts ratepayers.[(25)] Given the very slight, if any, chance that TNP would make a difference in 781 and 978, imposition of these costs on Massachusetts ratepayers without a clear, corresponding benefit would be unreasonable.

Accordingly, we conclude that TNP is not a practical solution for prolonging the lives of any of the four Eastern Massachusetts area codes. The supply of exchange codes in Eastern Massachusetts is too far depleted to benefit from TNP. Consequently, we conclude that new overlay area codes must be introduced for the 508, 617, 781, and 978 area codes.[(26)]

As with mandatory TNP, we also note that rate center consolidation ("RCC") does not forestall the present need for these new area codes. As noted above, by reducing the number of rate centers, RCC reduces the number of exchange codes that carriers need to serve a give geographic area. Even if the DTE had ordered the implementation of either of the Attorney General's two RCC plans on the very date that they were filed (i.e., March 19, 1999), it would have taken a year to implement either plan, and we would still need to introduce new area codes. This is because RCC only reduces demand for numbers from wireline companies, it does not create any new exchange codes, which, as noted above, are needed to meet demand for wireless service. In addition, there is a significant drawback to RCC in that it requires an increase in the fixed monthly price that all customers pay for access to the network, in order to compensate for lost toll revenues that result from having larger local calling areas. We will, nevertheless, continue to investigate RCC in D.T.E. 98-38 to determine whether it will help to prolong the lives of the new overlay area codes and as a possibly more efficient rate structure.

The need for the new area codes in Massachusetts is being driven by the explosive demand for new and additional telecommunications services and the ever-increasing number of competitive providers in Massachusetts telecommunications markets. These trends reflect Massachusetts' strong economy and competitive communications marketplace--itself a very positive thing. Introducing new area codes may not be convenient; but it is, beyond doubt, unavoidable. But if the Department fails to provide sufficient

numbering resources for telecommunications demand, that failure would certainly harm consumers, the telecommunications industry that serves those consumers, and the state's economy as a whole. The initially-promising alternatives to area code relief in 508, 617, 781, and 978 have been explored thoroughly and found wanting. There is no alternative but to order area code relief.

IV. AREA CODE RELIEF (D.T.E. 99-11)

In this Section, the Department will discuss the various area code relief proposals and our reasoning for selecting the all-services overlay method (i.e., an overlay applied to all forms of telecommunications technologies, including residential and business wireline telephones, wireless phones, alarm systems, pagers, and fax machines).

A. Introduction and Procedural History

As noted above, NeuStar declared "jeopardy" for the 508 and 617 area codes on March 4, 1998, and declared jeopardy for the 781 and 978 area codes on May 12, 1998. Industry meetings to discuss various area code relief options were held in Boston for 508 and 617 on April 16-17, 1998, and for 781 and 978 on September 23-24, 1998. As a result of those meetings, NeuStar petitioned the Department to determine an area code relief plan from proposed alternatives for each of the four existing area codes. NeuStar filed proposals involving either an all-services overlay or a geographic split for each area code.[(27)]

On January 11, 1999, the Department opened the relief docket, Area Code Relief, D.T.E. 99-11, to gather public comment and to investigate the relief plans proposed by NeuStar. On February 12, 1999, the Department filed a petition with the FCC for additional authority to impose a technology-specific overlay.[(28)] In the Matter of the Massachusetts Department of Telecommunications and Energy's Petition for Waiver to Implement a Technology-Specific Overlay in 508, 617, 781, and 978 Area Codes) (NSD-L-99-17, DA 99-460, CC Docket 96-98).

Pursuant to notice duly issued, five public hearings were held on January 26, 1999, in Worcester; January 28, 1999, in Lawrence; February 2, 1999, in Plymouth; February 9, 1999, in Boston; and February 11, 1999, in Wakefield. The hearings allowed interested persons the opportunity to comment. The Department also accepted written comments by the general public and the carriers until March 19, 1999.

The participants are: the Attorney General, AT&T, BA-MA, BAM, Cellular One, MCIW, MediaOne, New England Cable Television Association ("NECTA"), Nextel, Omnipoint Communications MB Operations, LLC ("Omnipoint"), SAS Security Systems ("SAS"), SNET Cellular, Sprint Communications Company, LP ("Sprint"), Sprint PCS, Teligent Services, Inc. ("Teligent"), Level 3, Focal, Global NAPs, Network Plus, Inc. ("Network Plus"), RCN, Conversent, Nextlink, and Michael Sullivan, a member of the public. The record includes 13 exhibits, four information requests, and 62 separate public comments.

B. Standard of Review

The Department's authority to review the implementation methods for area code relief is provided by the Telecommunications Act of 1996 ("Act"), 47 U.S.C. §§ 151 et seq. and the FCC's decision implementing the Act, Second Report and Order, CC Docket 96-98, ¶ 272. Specifically, § 251(e)(1) of the Act states that "the [FCC] shall have exclusive jurisdiction over those portions of the North American Numbering Plan that pertain to the United States . . . [and may] delegat[e] to State commissions or other entities all or any portion of such jurisdiction." The FCC has delegated its authority to implement new area codes to state utility commissions. Second Report and Order, CC Docket 96-98, ¶ 268 (August 8, 1996). The FCC stated:

State commissions are uniquely positioned to understand local conditions

and what effect area codes will have on those conditions. Each state's

implementation method is, of course, subject to our guidelines for numbering administration . . . .

Second Report and Order at ¶ 268.

In that order, the FCC set forth specific guidelines that states must follow when implementing area code relief. Second Report and Order at ¶ 281. The guidelines provide that states should: (1) seek to facilitate entry into the communications marketplace by making numbering resources available on an efficient and timely basis; (2) not unduly favor or disadvantage any particular industry segment or group of consumers; and (3) not unduly favor one technology over another. Id.

The Department has previously addressed the propriety of changes in area codes in Walpole v. New England Telephone and Telegraph Company, D.P.U. 87-95 (1988) ("Walpole"), and in Area Code Relief, D.P.U. 96-61 (1997). In both instances (unlike today), the Department implemented geographic splits. In Area Code Relief, the Department followed the standard adopted in Walpole, which requires the Department to consider the following four criteria when evaluating geographic splits: (1) maintain an equitable distribution of telephone lines between the new and the old area codes; (2) minimize customer confusion and forced number changes; (3) consider socioeconomic factors such as community of interest, school districts and emergency services; and (4) consider the total cost of the project to the incumbent carrier (today, BA-MA, but then, NYNEX). Area Code Relief at 15, citing Walpole at 14.

C. Relief Proposals

1. Overlay Proposals

a. NeuStar's Proposal for an All-Services Overlay

i. Introduction

NeuStar submitted an overlay plan for each of the four area codes in the Eastern Massachusetts LATA, one overlay plan per area code. These overlay plans are all-services overlays, meaning all types of communication devices, including residential and business wireline telephones, wireless phones, alarm systems, pagers, and fax machines would be subject to the new overlay area code. The geographic boundaries of the overlays are completely congruent with the geographic boundaries of the current area codes.

ii. Positions of the Participants

The carriers are overwhelmingly in favor of an all-services overlay,[(29)] as proposed by NeuStar (AT&T Comments at 6, BA-MA Comments at 4, BAM Comments at 2, Cellular One Comments at 3, Focal Comments at 1, Omnipoint Comments at 2, Sprint PCS Comments at 9). They argue that such a plan would be less disruptive for consumers and businesses in the affected areas (AT&T Comments at 13, BA-MA Comments at 1). The carriers contend that an overlay is less costly for businesses, since businesses would not have to change stationery, signs, business cards, etc. (BA-MA Comments at 6, Cellular One/SNET Comments at 6, BAM Comments at 1, Sprint Comments at 9, Focal Comments at 2-3).

In addition, the carriers assert that under the overlay proposal, no existing customers would have to change their telephone numbers (BA-MA Comments at 15, AT&T Comments at 13, Sprint Comments at 9, BAM Comments at 2, Omnipoint Comments at 2, Focal Comments at 2, Cellular One/SNET Reply Comments at 6). They also argue that an overlay would not create new boundary lines, so communities with an interest in

preserving their original geographic code identity would be allowed to do so (BA-MA Comments at 6, Sprint Comments at 11).

Members of industry state that an overlay would standardize dialing patterns in the region and eliminate any dialing disparity concerns, since an overlay would move the entire region to ten-digit dialing (BA-MA Comments at 1, 7; BAM Comments at 3; Cellular One/SNET Comments at 5; Focal Comments at 1). Additionally, they contend that such a plan is not discriminatory to the wireless carriers and complies with FCC Guidelines (AT&T Comments at 15, BA-MA Comments at 7, BAM Comments at 3).

The carriers also state that an overlay provides a longer period of relief than a split (BA-MA Comments at 9, BAM Comments at 7, Cellular One/SNET Comments at 10; Focal Comments at 2). According to the carriers, an overlay plan can be implemented more quickly and provides more expeditious relief for carriers than a split (AT&T Comments at 13-14, BA-MA Comments at 8, BAM Comments at 2, Cellular One/SNET Comments at 11, Omnipoint Comments at 2, Focal Comments at 3). In addition, the carriers' note that subsequent overlay relief plans are easier to implement than geographic splits (AT&T Comments at 14, BA-MA Comments at 8, BAM Comments at 2, Focal Comments at 2, Sprint Comments at 12). Lastly, the carriers report that other states have had positive experiences in implementing overlays (BAM Comments at 9, Cellular One/SNET Comments at 14, Sprint Comments at 9, 11).

b. Omnipoint's Proposal for an All-Services Overlay

Omnipoint recommends two overlay proposals that are different from those proposed by NeuStar. In the first, Omnipoint proposes an expanded area code overlay encompassing what they have referred to as the Boston Major Trading Area. In the second option, Omnipoint recommends that an expanded area code overlay be adopted to cover all basic trading areas in the state. No other participants commented on Omnipoint's proposals.

2. Technology-Specific Overlay

a. Introduction

On February 9, 1999, the Department requested participants to comment on the merits of a technology-specific overlay. In addition, on February 11, 1999, Michael Sullivan, a member of the public, proposed a form of a technology-specific overlay.

b. Michael Sullivan's Proposal

Mr. Sullivan suggests that older-technology systems be separated from the newer-technology systems and recommends that all telephone subscribers declare a primary telephone number that would retain its existing area code (Tr. 5, at 20). Under his plan, all secondary, non-voice technology would be placed in a separate overlay area code (id. at 21). Mr. Sullivan states that although the FCC ruled that cellular phones could not be put into separate area codes, there was never a similar FCC ruling for other technologies such as facsimile machines, pagers, modems, or data lines (Tr. 3, at 13-17; Tr. 4, at 61-64; Tr. 5, at 20-23).

c. Positions of the Participants

The majority of the commenters oppose a technology-specific overlay. They argue that the FCC prohibits the use of technology-specific overlays because such overlays favor wireline carriers by imposing costs and burdens on wireless carriers not borne by wireline carriers (BA-MA Comments at 12-13; BAM Comments at 6; Cellular One/SNET Comments at 6; MCIW Comments at 12; Sprint Comments at 7, citing In the Matter of Proposed 708 Relief Plan and 630 Numbering Plan Area Code by Ameritech-Illinois ("Ameritech"), FCC 95-15 (1996)). They argue further that technology-specific overlays are discriminatory and anti-competitive (Cellular One/SNET Comments at 16; AT&T Comments at 16; BA-MA Comments at

13; BAM Comments at 6; Sprint Comments at 7, citing Local Competition Second Report and Order, ¶¶ 281, 285, 305-308). In addition, the participants argue that a technology-specific overlay will not significantly delay the exhaustion of area codes currently in jeopardy. BA-MA claims that, despite their recent and projected, robust growth, wireless carriers account for a relatively small percentage of the NXXs in the existing area codes[30] so "a service-specific overlay for wireless services would not significantly extend the life span of the 617, 508, 978, and 781 area codes" (BA-MA Comments at 13; see also AT&T Comments at 16-17). Nextel adds that after the implementation of a wireless-only NPA in New York, "wireline NXXs nonetheless continued to exhaust at such a rate that it was necessary for NXXs from the previously wireless-only NPA to be assigned to wireline carriers" (Nextel Comments at 4). Finally, MCIW argues that "isolating a class of service providers in their own area codes would create perverse incentive for increased reservation, assignment, and waste of numbers" (MCIW Comments at 13).

Omnipoint was the only participant (apart from Mr. Sullivan) in support of a technology-specific overlay. Omnipoint contended that putting wireless carriers in a different NPA would extend the life of the current area codes in jeopardy, and further argued that a wireless-only overlay would "highlight the high utilization and efficiencies that the wireless industry employs" (Omnipoint Comments at 3). The Department received numerous comments at public hearings in support of a technology-specific overlay (see e.g., Tr. 1, at 30-33; Tr. 3, at 16-19; Tr. 4, at 41-42, 60, 62-66, 70-71; Tr. 5, at 9-11, 20-24).

No participants commented on Mr. Sullivan's proposal.

3. Geographic Split[31] Proposals

a. NeuStar's Proposals

During relief planning meetings, the industry participants could not reach consensus on a single geographic split option for the four existing NPAs.[32] As a result, NeuStar, on behalf of the industry, submitted several alternative relief plans for a final determination by the Department.[33]

b. Senator Morrissey's Proposal

On March 5, 1999, State Senator Michael W. Morrissey, of the Norfolk and Plymouth District, filed comments regarding a geographic split of all four area codes in eastern Massachusetts. Senator Morrissey proposed that Boston alone be placed in the 617 area code, with three "suburban" area codes surrounding the city.

c. Positions of the Participants

MCIW was the only party in support of a geographic split. MCIW claims that a split is preferable to an overlay because it is less confusing to consumers, maintains the seven-digit dialing pattern, and maintains the unique association of area code and geographic boundary (MCIW Comments at 2, 4).

4. Proposed Exemption for Alarm Companies

a. Introduction

SAS and other alarm company representatives ("alarm companies")[34] request that the Department allow for a "carve out" of up to 200 telephone exchange lines by exempting them from any dialing changes required due to the introduction of new area codes (Tr. 4 at 25-31). These telephone exchange lines terminate at the computers of private dispatch centers and 19 alarm-monitoring companies (Exh. DTE-3).

Under a geographic split, some customers of alarm companies would end up being served by an area code that is different from that of the alarm-monitoring company. Customer monitoring equipment programmed

to dial only seven-digits to place a local call to telephone numbers associated with the alarm company's system would need to be reprogrammed to ten-digit dialing to incorporate the area code of the alarm company. To avoid the need to reprogram their monitoring equipment, the alarm companies seek to have their exchange lines exempted from the dialing changes.

The alarm companies seek a similar "carve out" if an overlay method is adopted and request that the 200 lines be exempt from the Federal ten-digit mandatory dialing requirement for a period of three to five years (Exhs. DTE-4, 5, 9, 11, 12, 13).[(35)] Members of the industry acknowledge that this "carve-out" exemption would require the FCC to waive its mandatory ten-digit dialing requirement for all calls (Tr. 4 at 25-31, 55-58, 78-80; February 23, 1999, SAS Comments; February 26, 1999, MBFAA Comments; Exh. DTE-7). No one made clear how the Department could waive a Federal mandate.

If neither of these technical exemptions can be implemented, the alarm industry supports an all-services overlay relief method, and requests a nine-month or longer permissive-dialing period[(36)] (Tr. 4 at 56; February 26, 1999, MBFAA Comments).[(37)]

b. Positions of the Participants

BA-MA opposes the creation of a "carve out" exception for alarm company members (BA-MA Comments at 14). BA-MA points out that this is the same request made by the alarm industry in D.P.U. 97-90 in connection with the previous Massachusetts area code split (id.). According to BA-MA, the requested "carve out" would require a considerable work effort by BA-MA, including a new routing scheme, software modifications and substantial reprogramming of switches to recognize the exemption telephone numbers (id.). BA-MA argues that the "carve-out" proposal is fraught with potential risks, including adverse public safety effects (BA-MA Reply Comments at 7; Exh. DTE-1). BA-MA contends that, instead of approving a "carve-out", the Department should expeditiously approve an overlay and allow the permissive-dialing period to begin as soon as possible, which would provide all business and industry groups sufficient time to perform system changes to implement ten-digit or eleven-digit dialing (BA-MA Reply Comments at 7).

V. ANALYSIS AND FINDINGS

For the reasons stated below, the Department adopts an all-services overlay method of relief for the 508, 617, 781, and 978 area codes. The record demonstrates overwhelming support for an overlay from the industry, the public, businesses, community organizations, etc. With an overlay, unlike a geographic split, no customers will have to change their current telephone numbers. An overlay also means that business customers will not face the expense and inconvenience of having to change their stationery, business cards, signs, trucks, and advertising. Under FCC mandate[(38)], an overlay requires that customers dial ten digits (area code plus seven-digit phone number) for all calls that are currently dialed with only seven digits.[(39)] But Massachusetts is far from alone in facing this requirement: the trend nationally is to ten-digit dialing. Additionally, Massachusetts consumers are already used to dialing ten digits for many of their calls because of the earlier split of the Eastern Massachusetts into four area codes and the change in 1994 to require 1+10-digit dialing for all toll calls

Using an overlay relief method also eliminates the difficulty and controversy of establishing new area code boundary lines and requires a shorter implementation period. In addition, the overlay method prevents the need to split Eastern Massachusetts into smaller and ever-smaller area codes, and from further splitting counties, municipalities and districts among different area codes calls.[(40)]

Moreover, as noted by a number of participants in this case, circumstances have changed since the Department last ordered geographic splits in 1997. Local number portability, unavailable in 1997, is key today. The implementation of LNP for wireline carriers has reduced the potential anticompetitive effect of an overlay plan by permitting customers to retain their existing telephone numbers when switching from one service provider to another. Another important advantage to an overlay is that there will be little disruption for customers in the future if more area codes are needed. After the initial overlay, future

overlays will require no changes in existing telephone numbers or dialing patterns. Calling patterns will be routine and stable.

Therefore, after considering all the evidence and argument, we conclude that NeuStar's proposal for an all-services overlay method for the 508, 617, 781, and 978 area codes, with mandatory ten-digit dialing for calls that are currently dialed using only seven digits, is -- all things considered -- in the public interest and shall be adopted as the area code relief method for the four existing Eastern Massachusetts NPAs. Carriers are directed to implement overlays in a manner that allows customers to dial 1+10 digits for all calls, including local calls, if the customers so choose.

Carriers also are directed to not change their rates for calls that are dialed differently as a result of this Order. See e.g., G.L. c. 159, § 19 (prohibition against new charges associated with introduction of 508 area code). All calls that were dialed as local calls, prior to introduction of new area codes, shall remain local after introduction of the new area codes.

To ease the transition to the new overlay area codes, we order a minimum four-month permissive dialing period to begin as soon as is technically feasible, but in no case later than January 1, 2001. During this period, customers calling from within the existing area codes can dial either the seven-, ten- or 1+ten-digit telephone number and still reach the party called. However, during the permissive period, carriers shall encourage customers to begin dialing ten digits or 1+ten-digits on all calls, so that they may become familiar with the new dialing plan for the existing and new overlay area codes. At the end of the permissive dialing period (on May 1, 2001), callers will be required to use the new ten-digit or 1+ten-digit dialing to complete their calls. After the permissive dialing period closes, callers who do not use the new dialing pattern shall receive a brief recorded message reminding them to dial ten digits or 1+ten digits, and will be required to redial the number. This reminder message will continue for three months (until July 31, 2001). Thus, the permissive dialing period, at a minimum, will run from January through April, 2001, immediately followed by mandatory dialing on May 1, 2001. Telephone numbers in the new overlay area codes will be available for assignment beginning May 1, 2001.

Also, to help consumers adjust to ten-digit dialing, the Department will require comprehensive customer education by local exchange carriers operating in the Eastern LATA. Carriers are required to develop advertising, including a notice (e.g., bill insert), to be distributed to customers no later than six months before mandatory dialing begins. The form and content of the notice must be approved by the Department's Telecommunications Division.

Regarding Mr. Sullivan's proposal, we determine that such a measure is prohibited by current FCC rules in that it would constitute a technology-specific overlay. Absent a waiver from the FCC, the Department, like other states, is not authorized to adopt a technology-specific overlay.[(41)] Non-voice technology would be placed into a separate overlay area code, thus creating a technology- or service-specific overlay. Such a proposal would also discriminate between wireless and wireline services and would segregate certain types of wireless services and exclude others.

With respect to Senator Morrissey's proposal, we note that it exhibits certain logical features. The proposal would be quite attractive, were our determination confined solely to choosing the best geographic split option. However, judging from their response in 1997, Massachusetts consumers would not favor a geographic split. The previous geographic split has been in effect now for two years, and consumers have become used to it. Moreover, certain costs in programming equipment have been incurred. We cannot easily disturb this settled pattern. Therefore, we cannot mandate the Senator's proposal.

In addition, as in 1997, the alarm companies have raised valid questions of public safety in responding to area code relief. Their suggested remedy is, however, not feasible; and so we must deny the alarm companies request for a "carve out." The alarm companies made a similar request in 1997 in connection with the previous Massachusetts area code split. The Department found that the "carve out" was not technically feasible and could harm BA-MA's network and its ability to serve consumers. Permissive

Dialing Period, D.P.U. 97-90-A at 7 n.6 (1997). This latest proposal suffers from the same technical infirmities. A "carve out" of this nature has never been attempted or implemented anywhere in the country with existing technical capabilities (Exh. DTE-1)[(42)] and has the potential to disrupt BA-MA's (and other carriers' and private switch owners') networks. We are also mindful of the paradoxical possibility that current technical limitations may put at risk the very system that the alarm companies wish to protect. Technical constraints of the existing telephone system cannot be ignored or wished away.

As an alternative to the "carve out", the alarm companies requested at least a nine-month permissive dialing period. However, we believe that a minimum four-month permissive dialing period should be sufficient to allow alarm companies to reprogram their equipment. We note that alarm companies were able to reprogram their equipment in five months when we implemented geographic splits in 1997, and there is much less reprogramming work associated with an overlay. To ensure that telecommunications carriers have adequate numbering resources as soon as possible (and thereby ensure the continued availability of telecommunications services for consumers), we find that the public interest is best served by maintaining the minimum four-month permissive dialing period. However, if carriers are able to complete their technical modifications sooner, they shall begin the permissive-dialing period earlier than January 1, 2001, for doing so would give alarm companies additional reprogramming time.[(43)]

Next we discuss implementation issues. According to industry guidelines, area code relief should be completed at least three months before existing area codes would exhaust using the highest growth projections (NPA Guidelines at 13). Based on the most recent data provided by Neustar, the likely exhaust date for the four Eastern Massachusetts area codes are: second quarter 2001 for 617; first quarter 2002 for 508; third quarter 2001 for 781; and fourth quarter 2001 for 978 (January 18, 2000 COCUS and NPA Exhaust Analysis Update). The difference in projected exhaustion dates is small enough that we believe that the new overlays for 508, 617, 781, and 978 should be implemented at the same time. Doing so will avoid customer confusion and enhance the success of customer education. Therefore, we direct NeuStar to begin immediately to take the appropriate steps to implement relief activities in the 508, 617, 781, and 978 area codes by May 1, 2001.

NeuStar shall develop a detailed plan for timely implementation of area code relief activities in accordance with appropriate industry and regulatory guidelines. That plan shall be filed with the Department within 21 days from the date of this Order. That plan shall include, but not be limited to, a description of each of the specific activities to be performed by NeuStar and the date by which it expects to complete each of the area code relief activities, including appropriate industry notification, so that area code relief may be completed prior to the projected exhaust date of the 617 area code. NeuStar is directed to provide copies of its plan, once filed, to all Massachusetts local exchange carriers.

In addition, we direct all local exchange carriers providing services in Eastern Massachusetts to develop and file within 30 days of this Order an implementation report detailing the activities, costs, and schedule for implementing the new area codes, including network changes and customer education plans. The report also should include drafts of any bill inserts and/or other notices to customers concerning the overlays. In particular, the report shall address ways that carriers plan to help the elderly and disabled in adapting to the need to dial more digits for local calls and address the needs of alarm companies and their customers. The report should include the name of one or more persons that the Department can contact with questions about the implementation report and customer education activities.

VI. ORDER

After due notice, hearing and consideration, it is

ORDERED: That NeuStar, Inc., serving as the North American Numbering Plan Administrator, shall simultaneously implement four separate overlays as the method of NPA relief for the 508, 617, 781, and 978 area codes by May 2001; and it is

FURTHER ORDERED: That NeuStar shall develop a detailed area code implementation plan, consistent with the directives of this Order, to be filed within 21 days; and it is

FURTHER ORDERED: That all local exchange carriers providing service in Eastern Massachusetts shall file an area code implementation report, consistent with the directives herein, within 30 days of the date of this Order; and it is

FURTHER ORDERED: That all local exchange carriers providing service in Eastern Massachusetts shall comply with all other directives herein.

By Order of the Department,

James Connelly, Chairman

W. Robert Keating, Commissioner

Paul B. Vasington, Commissioner

Eugene J. Sullivan, Jr., Commissioner

Deirdre K. Manning, Commissioner

In accordance with the authority delegated to the Department by the FCC in Second Report and Order, CC Docket 96-98, Paragraphs 268, 281, and In the Matter of Massachusetts Department of Telecommunications and Energy's Petition for Waiver of Section 52.19 to Implement Various Area Code

Conservation Methods in the 508, 617, 781, and 978 Area Codes, CC Docket 96-98, FCC 99-246, NSD File No. L-99-19 (September 15, 1999), appeal of this final Order may be taken to the Federal Communications Commission. Timing of the filing of such appeal is governed by the applicable rules of the appellate body to which the appeal is made or, in the absence of such, within 20 days of the date of this Order.

1. Within the past year, the Federal Communications Commission ("FCC") has described this explosion of numbering demand:

The pace of area code exhaust has accelerated exponentially in the

past few years. For example, in 1984, the entire NANP

[i.e., North American Numbering Plan] had 125 area codes, and by

December 1994, 134 area codes had been assigned, an increase of only

nine area codes in 10 years. In marked contrast, in 1996 alone,

22 area codes were added to the NANP, and in 1997, 43 area codes

were added. In 1998, 26 area codes were added to the NANP, bringing

to 248 the total number of geographic codes assigned, with 207 of those

codes serving portions of the United States. Currently, 13 new area

codes are expected to be activated in 1999, with 22 area code relief plans pending state public utility commission approval, many of which will

likely lead to new area codes being added in 1999. With only 680 usable

area codes in the NANP, it is foreseeable that the NANP could exhaust

in the relatively near term. The compelling need for immediate and

comprehensive action to make more efficient use of numbering

resources is clear.

Paragraph 21 of the FCC's Notice of Proposed Rulemaking, In the Matter of Numbering Resource Optimization, CC Docket No. 99-200, FCC 99-122, issued June 2, 1999.

2. California alone is projected to have 41 area codes by the end of 2002. See Paragraph 4 of the FCC's Notice of Proposed Rulemaking, In the Matter of Numbering Resource Optimization, CC Docket No. 99-200, FCC 99-122, issued June 2, 1999.

3. See Paragraph 5, FCC's Report and Order and Further Notice of Proposed Rule Making, FCC 00-104, CC Docket 99-200, Released March 31, 2000. ("Report and Order")

4. Since 1995, 34 states, including Massachusetts, have had to order the implementation of new area codes. The individual states, and the number of new area codes they have needed to implement, are: Alabama (2); Arizona (3); Arkansas (1); California (17); Colorado (2); Connecticut (3); Florida (9); Georgia (4); Kansas (1); Kentucky (2); Illinois (7); Indiana (1); Louisiana (2); Maryland (2); Massachusetts (2); Michigan (7); Minnesota (3); Mississippi (2); Missouri (3); New Jersey (3); New York (4); Nevada (1); North Carolina (4); Ohio (5); Oklahoma (1); Oregon (2); Pennsylvania (4); South Carolina (2); Tennessee (3); Texas (9); Utah (1); Virginia (3); Washington (4); and Wisconsin (2).

5. The 508, 617, 781 and 978 area codes make up the Eastern Massachusetts Local Access Transport Area ("LATA"). The Western LATA is comprised of the 413 area code, which is not affected by this Order.

6. See e.g., Boston Globe (Jan. 25, 1999; Feb. 10, 1999); Quincy Patriot Ledger, (Jan. 27, 1999, p. 10); Worcester Telegram & Gazette (Jan. 27, 1999, p. E2); Wakefield Daily Item (Feb. 18, 1999, p. 1).

7. TNP is a method of conserving telephone numbers by distributing them to carriers more efficiently. Currently, telephone numbers are assigned to carriers in blocks of 10,000 numbers. With TNP, telephone numbers are given out in thousands-blocks rather than ten-thousands-blocks, in an effort to reduce the amount of idle number-inventory held by carriers. Carriers donate their excess inventory of unused or minimally-used thousands-blocks to a pool, from which carriers are assigned new telephone numbers as needed. TNP is based on local number portability ("LNP") technology, which allows telephone numbers to be ported between carriers within a given rate center (i.e., a customer can keep his number when switching carriers within a rate center). As discussed later in this Order, wireless carriers can not benefit from TNP until November 2002.

8. At that time, the NPA Code Administrator was Bell Atlantic Network Services, Inc. This responsibility has since been transferred to NeuStar, Inc.

9. The exchange code is the preface of the standard seven-digit phone number (i.e., the group of numbers sharing a common three-digit prefix, such as NXX-1234). An exchange code ("NXX") contains 10,000 telephone numbers. Historically, carriers could not be given telephone numbers in quantities smaller than a full exchange code.

10. "Jeopardy" is a term of art in the telecommunications industry used to indicate when the available supply of exchange codes runs low. A "jeopardy" condition is declared when it is projected that exchange codes will be depleted or exhausted within approximately two years. An NPA declaration of "jeopardy" signals the need for area code relief.

11. The rationing process is determined by industry consensus and is administered by the North American Numbering Plan Administrator ("NANPA"). NeuStar, Inc. is the current NANPA. The Department does not have authority over rationing procedures.

12. Under virtual number pooling, carriers would divide exchange codes into thousand-number blocks and assign phone numbers from the first thousand-number block until it was nearly exhausted. Only then would the next thousand-number block be open for use. By preserving as many untapped (or uncontaminated) thousand-number blocks for as long as possible, virtual pooling serves as a "bridge" until TNP is available. (See note 7 above for the definition of TNP, or thousands-block number pooling.)

13. A rate center is a geographic location. Each customer's telephone number is assigned to a particular rate center. The distance between two rate centers is used to calculate the price for some telecommunications services. The configuration of rate centers thus determines the charges for local calls. There are currently 202 rate centers in Eastern Massachusetts (i.e., all of Massachusetts save for the 413 area code). Under the

current system, carriers must obtain at least one full exchange code (i.e., 10,000 numbers) in every rate center in each geographic area they wish to serve. If a carrier wished to serve customers throughout Eastern Massachusetts, the carrier would need to request over two million telephone numbers, no matter how many customers (or how few) it expected actually to serve. Rate center consolidation would reduce the number of rate centers, thus reducing the amount of excess inventory carriers would need to obtain in order to serve a given geographic area. The adverse rate effects of rate center consolidation on dial-tone charges and the improbability of consolidation's helping to save area codes are discussed at pages 18-19 below.

14. UNP allows sharing between carriers of the many unassigned numbers within existing exchange codes that do not fall within untapped thousands-blocks.

15. Petition for Declaratory Ruling and Request for Expedited Action on the July 15, 1997 Order of the Pennsylvania Public Utilities Commission Regarding Area Codes 412, 610, 215, and 717, Memorandum Opinion and Order on Reconsideration, CC Docket No. 96-98 (September 28, 1998). In this Order, the FCC held that states, through their state public utility commissions, are authorized to order rationing of exchange codes and other conservation measures like virtual pooling only (1) after an area code relief plan has been implemented, and (2) where the state's telecommunications industry has not reached a consensus on an exchange code rationing plan.

16. On October 27, 1998, the Department filed a petition with the FCC for reconsideration of that ruling. That petition was rendered moot by the FCC's September 15, 1999 grant of additional code conservation authority to the Department (see below).

17. In its March 31, 2000 Report and Order, the FCC adopted national standards for forecasting and demonstrating need. The FCC also granted states and NeuStar authority to deny numbering resources to any carrier that fails to comply with these new standards.

18. A "fill-rate" measures how efficiently a carrier is using its numbering resources by comparing the total sum of telephone numbers in a carrier's inventory to the sum of that carrier's telephone numbers actually assigned to customers. Establishing fill-rate standards slows the need for new area codes by requiring carriers to demonstrate prudent use of their existing numbering resources before obtaining additional numbering resources.

19. See March 30, 2000 Letter Order Denying Request of Sprint PCS; Letter from Department to NANPA Senior Code Administrator Denying Request from AT&T Local (March 10, 2000); Letter from Department to NANPA Senior Code Administrator Denying Request from AT&T Wireless (March 28, 2000); Letter from Department to NANPA Senior Code Administrator Denying Request from Bell Atlantic Mobile (April 6, 2000).

20. This is in contrast to the Department's efforts to assign codes to carriers outside of the rationing process, where a carrier demonstrates actual need. On February 11, 2000, the Department, pursuant to authority delegated by the FCC, directed NeuStar to allocate to MediaOne five exchange codes in 508 and one exchange code in 781. This allowed MediaOne to continue its expansion of local exchange services in additional communities in Eastern Massachusetts.

21. The states in the Bell Atlantic North region are New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine.

22. The FCC granted forbearance for wireless carriers from LNP requirements until November 24, 2002, in In the Matter of Cellular Telecommunications Industry Association's Petition for Forbearance from Commercial Mobile Radio Services Number Portability Obligations and Telephone Number Portability, Memorandum Opinion and Order, WT Docket No. 98-229, CC Docket No. 95-116, FCC 99-19 (February 8, 1999).

23. The FCC allows states to reclaim uncontaminated thousands-blocks (i.e., blocks with no telephone numbers assigned to customers) and minimally-contaminated thousands-blocks (i.e., blocks with up to 10 percent of the telephone numbers assigned to customers) for pooling purposes.

24. Wireless carriers are Commercial Mobile Radio Service providers, such as cellular and paging companies, who use radio frequencies for communications. Wireline carriers, such as local telephone and long distance companies, generally use copper, coaxial, and fiber optic lines for communications.

25. Under price cap regulation, BA-MA is allowed to recover from the ratepayers any costs that result from exogenous variables. Government action is an exogenous variable, thus the cost of Department-ordered TNP could be passed on to the ratepayers.

26. We note that TNP can not be ordered for those new overlay area codes to be implemented as a result of this Order. The Department's current TNP authority only extends to the existing area codes and not any new area codes created for Massachusetts as a result of the existing jeopardy situation. In its recent Report and Order, the FCC mandated that TNP be implemented nationally by August 2001. Developments in the calendar quarter May-July 2001 should not impair TNP's future value to the four new area codes adopted here, however.

27. On January 19, 1999, NeuStar submitted an amended filing concerning its plan for relief in the 508 and 617 NPAs detailing several corrections and clarifications to the original filing.

28. In a technology-specific overlay, the new overlay area codes are assigned only to specific telecommunications services or technologies, such as wireless services or dedicated fax and modem lines. The FCC has yet to rule on the Department's petition. Although the Department very much wants to have this ordnance in its arsenal, the Department can no longer wait for the FCC to rule. Indeed, for the FCC to act favorably on the petition, the FCC would have to carve out an exception to its precedent. It seems unlikely the FCC would relent on this point. See Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, Second Report and Order and Memorandum Opinion and Order, FCC 96-333, ¶ 286 (August 6, 1996).

29. The near unanimity among the carriers--both the incumbent, BA-MA, and its many competitors--contrasts vividly with the strong opposition to an overlay expressed in 1996-97, when competitors argued that an overlay would favor the incumbent and be anti-competitive. The market today has changed so much that both the incumbent and the many competitive providers are similarly positioned to appreciate and benefit from the relative simplicity of an overlay.

30. While it is true that wireless carriers currently account for a small percentage of NXX codes currently, wireless carriers are experiencing high growth rates, thus their share of the NXXs in use is likely to grow in the future.

31. A geographic split divides an existing area code region into two regions, with one geographic area (and its customers) retaining the existing area code and the other (split-off) geographic area receiving a new area code.

32. NPA, or Numbering Plan Area, refers to the geographic area served by a given area code. In this Order, the terms "area code" and "NPA" are used interchangeably.

33. NeuStar, as the NANPA, utilizes the NPA Code Relief Planning and Notification Guidelines (INC 97-0404-016) ("NPA Guidelines") which assists NANPA, the industry, and regulatory authorities with assumptions, constraints and planning principles to be used in area code relief planning.

34. Although not participants in this case, Wayne Alarm and the Massachusetts Burglar and Fire Alarm Association ("MBFAA") filed comments and responses to the Department's information requests to SAS regarding the carve-out proposal. These responses and comments have been incorporated into and made part of the comments and responses of SAS. See Hearing Officer Ruling dated April 23, 1999.

35. A member of the alarm industry indicated that the need for a "carve out" would be minimal if the area code in which the central station is located does not change (Exh. DTE-8).

36. As mentioned briefly above at page 23, the FCC requires that customers dial either ten digits or 1 + ten digits for calls previously dialed with seven digits in areas where an overlay is implemented. A permissive dialing period is a period of weeks or months preceding the implementation of the overlay code, when consumers can place calls using either the old seven-digit dialing regime or the required ten- or 1 +ten digit regime. Permissive dialing periods are designed to allow customers the opportunity to acquaint themselves with the new dialing requirements. It is a transition device.

37. During the industry meetings, members of the alarm industry expressed support for the overlay method (May 18, 1998, NANPA Proposal, Exh. B at 2).

38. The FCC requires that all telephone calls made in an overlay area code use either ten-digit dialing (area code + seven-digit phone number) or eleven-digit dialing (1+area code+seven-digit phone number). The FCC requirment includes calls currently dialed as seven digits in existing area codes, calls made within the same area code, and those made between the new overlay area codes and any of the existing area codes. 47 C.F.R. §52.19(c)(3)(ii). See also Second Report and Order ¶¶ 286-287. The FCC found that without mandatory ten-digit dialing, local dialing disparity would occur because existing telephone users who remain in the existing area code would be able to dial seven digits to call others with phone numbers in the same area code, while new telephone subscribers in the new overlay code would be required to dial ten digits to reach a telephone user in the pre-existing code. Because the incumbent local exchange carrier ("ILEC") is likely to serve most of the customers in the pre-existing code, and the competitive local exchange carrier ("CLEC") would be assigned most of their new numbering resources from the new overlay code, this dialing disparity would unfairly advantage the ILEC by preserving seven-digit dialing within the pre-existing code for the ILEC's customers while requiring ten-digit dialing for the CLECs' customers and for any ILEC customer wishing to reach a CLEC customer. Second Report and Order, ¶¶ 283-90 (1996). The Department is bound by the FCC's judgment in this matter.

39. Some consumers may find it difficult to remember which calls may be dialed with ten digits (i.e., regional toll calls, such as from Wakefield to Hingham) and which calls must be dialed with 1 + ten digits (i.e., long distance calls, such as from Bolton to Springfield), and may prefer to dial all calls with 1 + ten digits for the sake of convenience. In order to make the transition to new dialing patterns as simple as possible, the Department will allow consumers to dial either ten-digits or 1+ ten digits for local calls. See D.P.U. 97-90-A (wherein the Department adopted a policy for the optional use of ten or eleven-digit dialing for inter-area code local calling).

40. Moreover, if the Department had chosen splits rather than overlays, the resultant area codes map would be so Balkanized and the areas so much smaller that many calls that are now dialed with seven digits would have become ten digit calls anyway. And, of course, half of the customers would have to change their phone numbers too.

41. We note that the FCC has not yet ruled on the Department's February 12, 1999, petition requesting authority to impose a technology-specific overlay. The situation does not admit of waiting; and, in any event, a favorable ruling does not appear likely. See note 28 above.

42. BA-MA noted that a temporary "carve out" of NXX codes having alarm company telephone numbers was utilized in Atlanta, Georgia, when an overlay was implemented. The phone numbers that were part of the alarm company carve-out did not share a unique exchange code, but were scattered among different

exchange codes which were also being used to provide standard phone service to residences and businesses. Because of this, the alarm company "carve out" ended up affecting customers with phone numbers beginning with the same exchange code as a phone number that was part of the alarm company "carve out." Due to substantial customer confusion caused by that "carve out," the public and local media deemed the proposal a disaster. Customers had no clear understanding as to which NXX codes required ten-digit dialing (BA-MA Comments at 14, n17).

43. If, after assessing the details of technical and commercial feasibility, carriers determine that a longer permissive period is practicable and warranted, carriers are encouraged to propose a longer period in their compliance filings (see below). Concerns for public safety weigh in favor of allowing alarm companies and security services as much time as is commercially practicable by extending the permissive period to the extent possible.