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Appendix A

**I. INTRODUCTION**

1. In this Notice of Proposed Rulemaking (Notice), we examine a variety of measures intended to increase the efficiency with which telecommunications carriers use telephone numbering resources. The purpose of this effort is two-fold: to slow the rate of number exhaust in this country as evidenced by the ever-increasing rate at which new area codes are assigned; and to prolong the life of the North American Numbering Plan (NANP).<sup>1</sup>

2. In 1947, AT&T adopted the current nationwide numbering scheme, under which the ten-digit telephone number serves not only as a network “address,” but also conveys information to the network as to how phone calls should be routed and billed. A principal benefit of this system was that it permitted automated routing of long-distance phone calls, obviating the need for operators to assist in routing. Under the allocation system that developed to support this system, numbering resources are allocated to local telephone exchange carriers on the basis of physical geography, rather than on the basis of end-user demand for those numbers. That is, typically a large block of numbers is allocated to a carrier for use in a geographic area, even though there may not be end-users assigned to each individual number available in the area. This system worked smoothly so long as only one entity (the local exchange carrier) offered only one type of service (wireline telephony) to customers.

<sup>1</sup> The North American Numbering Plan (NANP) is the basic numbering scheme for the telecommunications networks located in Anguilla, Antigua, Bahamas, Barbados, Bermuda, British Virgin Islands, Canada, Cayman Islands, Dominica, Dominican Republic, Grenada, Jamaica, Montserrat, St. Kitts & Nevis, St. Lucia, St. Vincent, Turks & Caicos Islands, Trinidad & Tobago, and the United States (including Puerto Rico, the U.S. Virgin Islands, Guam and the Commonwealth of the Northern Mariana Islands).

3. New services using the same numbering system, particularly cellular telephones, began to enter the telecommunications marketplace with increasing frequency beginning in the late 1980's. More recently, the Telecommunications Act of 1996<sup>2</sup> opened the market for competitive local wireline service, again giving rise to more players entering the market. In addition, many customers are obtaining additional telephone lines to support additional services such as Internet, data, and facsimile services. Because of the relatively recent explosion of market entry and customer demand for new services, as well as the allocation of telephone numbers to multiple service providers in large blocks on a geographic basis, we have witnessed an incredible increase in demand for numbering resources.

4. Although we are only just beginning to see the benefits of competition in the marketplace for local wireline telephone service, the coincident costs in the form of the rapid exhaust of area codes are already all too apparent. The effect on consumers having to undergo, in some cases, multiple area code changes in relatively short time frames is an unacceptable byproduct of burgeoning competition in the telecommunications marketplace. To illustrate the pace of area code exhaust, consider California, which, at the end of 1992, had 13 area codes in use.<sup>3</sup> The California Public Utilities Commission projects that by the end of 2002, it will have 41 area codes.<sup>4</sup> When the task of splitting the 323 area code from the 213 area code in the Los Angeles area was completed in April 1999, rather than lasting for ten or even five years, the new area code was immediately declared to be in jeopardy of exhausting its numbering resources.<sup>5</sup>

5. The goal of this proceeding is to address the underlying drivers of area code exhaust so that consumers are spared the enormous costs and inconveniences associated with the rapid pace of implementation of new area codes. In addition, clearly, implementing new area codes is not a solution that can continue indefinitely. As of the end of 1998, it was estimated that nearly one-third of the total number of geographic area codes assignable to the United States had been put into service.<sup>6</sup> By some projections, the NANP could exhaust within ten years.<sup>7</sup> Because

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<sup>2</sup> Pub. L. No. 104-104, 110 Stat. 56 (1996 Act). The 1996 Act amended the Communications Act of 1934, 47 U.S.C. §§ 151-714 (the Communications Act or the Act)

<sup>3</sup> See Briefing On Numbering Issues, California Public Utilities Commission, April 26, 1999.

<sup>4</sup> *Id.*

<sup>5</sup> An area code jeopardy situation exists when the forecasted demand for numbering resources exceeds the known supply during the planning and implementation interval for relief in the form of the introduction of a new area code. See Central Office Code (NXX) Assignment Guidelines, INC 95-0407-008 (rev. Apr. 26, 1999) at § 13.0 (CO Code Guidelines). This document is available at <<http://www.atis.org/atis/clc/incdocs.htm>>.

<sup>6</sup> See North American Numbering Plan Exhaust Study, submitted to the NANC by the North American Numbering Plan Administration (NANPA) Lockheed Martin CIS, dated April 22, 1999 (NANP Exhaust Study) at

the estimated cost of expanding the NANP is enormous,<sup>8</sup> and the time to effect such an expansion is estimated to be on the order of ten years,<sup>9</sup> the need to extend the life of the current NANP through effective conservation and efficient utilization of numbering resources is apparent and immediate.

6. This Commission, with input from industry groups, advisory bodies, state public utility commissions and the public, has already begun to examine various numbering conservation and optimization methods. Continuing in these efforts, we issue this Notice to seek public comment on how best to create national standards for numbering resource optimization. In doing so, we seek to: (1) minimize the negative impact on consumers; (2) ensure sufficient access to numbering resources for all service providers that need them to enter into or to compete in telecommunications markets; (3) avoid, or at least delay, exhaust of the NANP and the need to expand the NANP; (4) impose the least societal cost possible, in a competitively neutral manner, while obtaining the highest benefit; (5) ensure that no class of carrier or consumer is unduly favored or disfavored by our optimization efforts; and (6) minimize the incentives for carriers to build and carry excessively large inventories of numbers.

## II. EXECUTIVE SUMMARY

7. In this Notice, we consider and seek comment on a variety of administrative and technical measures that would promote more efficient allocation and use of NANP resources. In Section III, we seek specific comment on the relative costs and benefits, both financial and societal, of implementing each measure. We also ask that commenters weigh the cost of extending the life of the current NANP through various numbering resource optimization strategies against the projected cost of expansion of the NANP.

8. In Section IV, we examine the existing mechanisms for the administration and allocation of numbering resources, which are governed by industry-developed guidelines. We find that the guidelines have not been effective in constraining the ability of carriers to obtain and carry excessively large inventories of numbering resources for which they have no immediate need. We

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2-2. This study indicates that of a total of 680 area codes available, as of December 1998, 206 had been assigned for use within the United States, and 41 had been assigned for use in other NANP countries.

<sup>7</sup> See *id.* at 2-9 and A-4.

<sup>8</sup> Expanding the NANP would entail adding one or more digits to the current ten-digit dialing scheme to increase the number of available telephone numbers. Preliminary estimates place the cost of NANP expansion between 50 and 150 billion dollars. See NANC Meeting Minutes, February 18-19, 1999, at 13.

<sup>9</sup> *E.g.*, NANC Meeting Minutes, March 11, 1997, at 7.

seek comment on whether the guidelines should be modified or replaced, wholly or in part, by enforceable federal rules. Within the section, we outline proposals for a uniform set of numbering status definitions. We also seek comment on measures that would tie the allocation of new numbering resources to a showing of need by the carrier, increase carrier accountability for number utilization through enhanced data reporting and audit requirements, and speed the return of unused numbering resources. We specifically seek comment on the possibility of requiring carriers to meet number utilization thresholds before they can obtain additional numbering resources. These measures would not require implementation of new systems or technologies, and we believe that they could be implemented in a relatively short time period at minimal cost.

9. In Section V, we consider and seek comment on some specific numbering resource optimization solutions that could be implemented in addition to, or in combination with, stricter administrative standards for the administration and allocation of numbering resources. These methods include rate center consolidation, mandatory ten-digit dialing, and number pooling. We consider the likely costs and potential number optimization benefits of each of these solutions. We also seek comment on a host of issues related to the way in which number pooling might be implemented and administered, if we were to make carrier participation mandatory at some level.

10. In light of the potential costs of these numbering resource optimization solutions, we seek comment on whether the magnitude of the number exhaust problem justifies requiring carriers to participate in one or more of these solutions on a mandatory basis, either at the federal level or through delegation of authority to the states. In the alternative, we consider whether optimal use of numbering resources could be accomplished without the need for such mandates, provided that carriers achieved sufficiently high levels of efficiency in their usage of numbers. Under this approach, we would require carriers to meet specific number utilization thresholds, but would leave to each carrier the choice of what numbering optimization method or methods to use to achieve that threshold.

11. In Section VI, we consider whether establishing a pricing mechanism for numbering resources would improve the efficiency of number allocation and use. Although it is probably not feasible in the short-term to replace our existing numbering resource allocation mechanism with a market-based approach, we believe it is important to consider using market-based mechanisms to allocate numbers as a possible long-term alternative to regulatory mandates. We seek comment on whether moving to a market-based system of allocating numbering resources is feasible, and how the transition to such a system could be implemented.

12. In Section VII, we consider area code relief methodologies, including splits, overlays, and boundary realignments, as numbering optimization strategies. We recognize that our consideration of both short-term and long-term numbering resource optimization measures in this Notice does not eliminate the need for states to continue to implement area code relief in those area codes that are approaching depletion. We seek comment on what action the

Commission can take to assist states in implementing area code relief in a manner that is consistent with the objectives of this proceeding.

### III. OVERVIEW

#### A. Background

13. With the passage of the 1996 Act, Congress sought to establish "a pro-competitive, deregulatory national policy framework" for the United States telecommunications industry.<sup>10</sup> Competition in telecommunications markets is dependent, in part, upon fair and impartial access by all telecommunications carriers to national numbering resources. Inefficiencies in the allocation and utilization of numbering resources threaten to slow or halt the growth of competition by preventing new entrants from getting into telecommunications markets, and by preventing carriers already providing services from expanding their offerings. Thus, we view our efforts with regard to numbering resource optimization as an integral part of the Commission's overall efforts to implement fully the goals of the 1996 Act.

14. Equally importantly, numbering resource optimization efforts are necessary to address the considerable burdens imposed on consumers by the inefficient administration of numbering resources. Consumers face additional costs, both tangible and intangible, when a new area code is implemented in their local area. We believe that consumers should not be subjected to these increased costs and inconveniences except when absolutely necessary. Thus, we proceed with the additional goal of lessening the negative impact of numbering resource optimization and administration on consumers.

15. As discussed in greater detail below, there are several factors that contribute to the current strain on numbering resources. These factors include: (1) the allocation of numbers in blocks of 10,000 (NXX codes); (2) multiple rate centers, and the demand by most carriers to have at least one NXX code per rate center; (3) the increased demand for numbering resources by new entrants and new technologies; and (4) the absence of regulatory, industry or economic control over requests for numbering resources. Each of the numbering resource optimization measures proposed in the Notice are intended to attack one or more of these numbering exhaust drivers.

16. *Numbering Administration Authority.* Section 251(e)(1) of the Communications Act grants the Commission plenary jurisdiction over numbering issues that pertain to the United

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<sup>10</sup> Joint Statement of Managers, S. Conf. Rep. No. 104-230, 104th Cong., 2d Sess. 1 (1996).

States.<sup>11</sup> Specifically, the Act directs the Commission to create or designate one or more impartial entities to administer telecommunications numbering and to make such numbers available on an equitable basis. This section also gives the Commission the authority to delegate to state commissions or other entities all or any portion of its jurisdiction over numbering administration.<sup>12</sup> The Commission, however, retains jurisdiction over all matters it does not specifically delegate.<sup>13</sup> We believe that we have the authority to adopt the numbering optimization measures set forth in this Notice pursuant to the numbering administration authority granted to the Commission under section 251(e).

17. The Commission has promulgated rules to implement section 251(e)(1).<sup>14</sup> These rules provide, in part, that if the Commission delegates to the states or to other entities any portion of its authority over telecommunications numbering, those states or entities must perform their delegated functions in a manner consistent with certain guidelines, which require that numbering administration: (1) facilitate entry into the telecommunications marketplace by making telecommunications numbering resources available on an efficient, timely basis to telecommunications carriers; (2) not unduly favor or disfavor any particular industry segment or group of telecommunications consumers; and (3) not unduly favor one telecommunications

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<sup>11</sup> 47 U.S.C. § 251(e)(1) provides:

The Commission shall create or designate one or more impartial entities to administer telecommunications numbering and to make such numbers available on an equitable basis. The Commission shall have exclusive jurisdiction over those portions of the North American Numbering Plan that pertain to the United States. Nothing in this paragraph shall preclude the Commission from delegating to State commissions or other entities all or any portion of such jurisdiction.

*See also* Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, *Second Report and Order and Memorandum Opinion and Order*, CC Docket No. 96-98, 11 FCC Rcd 19392, 19511 (1996) (*Local Competition Second Report and Order*), *vacated in part*, California v. FCC, 124 F.3d 934 (8th Cir. 1997) (vacating dialing parity rules as applied to intraLATA telecommunications and finding challenge to cost recovery methodology for numbering administration not ripe for review), *rev'd* AT&T v. Iowa Utils. Bd., 199 S. Ct. 721 (1999).

<sup>12</sup> *Id.*

<sup>13</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19512, 19516 ("We retain our authority to set policy with respect to all facets of numbering administration in the United States. By retaining authority to set broad policy on numbering administration matters, we preserve our ability to act flexibly and expeditiously on broad policy issues and to resolve any dispute related to numbering administration pursuant to the 1996 Act.")

<sup>14</sup> *See generally* 47 C.F.R. Part 52.

technology over another.<sup>15</sup> These guidelines are intended to ensure the fair and timely availability of numbering resources to all telecommunications carriers.

18. The Commission also directed the North American Numbering Council (NANC),<sup>16</sup> a federal advisory committee created to advise the Commission on numbering matters, to recommend to the Commission an independent, non-government entity to serve as the North American Numbering Plan Administrator (NANPA).<sup>17</sup> Previously, the incumbent local exchange carrier (LEC) within each geographic area, until recently, had performed central office code assignment and area code relief functions,<sup>18</sup> and Bell Communications Research (Bellcore) performed other numbering administration functions. In October 1997, the Commission affirmed the selection of Lockheed Martin IMS as the new NANPA, noting that it would perform the numbering administration functions previously performed by Bellcore, as well as area code relief planning and CO code administration.<sup>19</sup>

19. *Area Code Relief.* The Commission has delegated to state commissions the authority to direct the form of area code relief, to perform the functions associated with initiating and planning area code relief, and to adopt final area code relief plans, subject to Commission and industry guidelines for numbering administration.<sup>20</sup>

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<sup>15</sup> 47 C.F.R. § 52.9(a)(1)-(3).

<sup>16</sup> The NANC was created under the Federal Advisory Committee Act, 5 U.S.C. App. 2 (1988), to advise the Commission and to make recommendations, reached through consensus, that foster efficient and impartial number administration. The membership of NANC, which includes thirty-two voting members and four special non-voting members, was selected to represent all segments of the telecommunications industry as well as regulatory entities and consumer groups with interests in numbering administration. The current NANC charter directs the Council to develop recommendations on numbering policy issues and facilitate number conservation including identification of technical solutions to numbering exhaust.

<sup>17</sup> Administration of the North American Numbering Plan, *Third Report and Order*; Toll Free Service Access Codes, *Third Report and Order*, CC Docket No. 95-155, 12 FCC Rcd at 23040, 23048 (1997) (*NANP Third Report and Order*).

<sup>18</sup> "Central office code" or "NXX code" refers to the second three digits (also called digits D-E-F) of a ten-digit telephone number in the form NXX-NXX-XXXX, where N represents any one of the numbers 2 through 9 and X represents any one of the numbers 0 through 9. 47 C.F.R. § 52.7(c). "Area code relief" refers to the process by which central office codes are made available when there are few or no unassigned central office codes remaining in an existing area code and a new area code is introduced. 47 C.F.R. § 52.7(b).

<sup>19</sup> See *NANP Third Report and Order*, 12 FCC Rcd at 23041-42, 23051-52, and 23071-72.

<sup>20</sup> *Local Competition Second Report and Order*, 11 FCC Rcd 19392, 19512, 19516. See also discussion *infra* Section VII.

20. The assignment of new area codes has been the primary relief measure employed in geographic areas experiencing numbering resource shortages brought on by the rapid growth in demand for central office codes or NXX codes. NXX codes are in such demand because of the manner in which numbering resources are allocated; that is, entire NXX codes containing 10,000 telephone numbers apiece are typically allocated to service providers for each rate center within a Numbering Plan Area (NPA)<sup>21</sup> in which the provider seeks to offer service.<sup>22</sup> Thus, for example, if a new entrant seeks to provide service throughout a hypothetical NPA containing 50 rate centers, it would require 50 NXX codes (one per rate center), or 500,000 individual telephone numbers. With a maximum of 792 NXX codes in an NPA available for allocation,<sup>23</sup> the assignment of one NXX per rate center to as few as 16 service providers in the hypothetical NPA could literally exhaust the NPA upon activation, although few individual telephone numbers may actually be in use. This practice has contributed to a recent increase in the number of existing area codes going into jeopardy,<sup>24</sup> although many individual telephone numbers may remain unassigned or unused.

21. Preliminary estimates indicate that a relatively low percentage of individual telephone numbers are actually assigned to customers throughout the NANP. The NANPA estimates that the "fill rate," or actual assignment to subscribers of telephone numbers allocated to carriers, is between 5.7% and 52.6%, depending on the industry segment.<sup>25</sup> Despite the relatively low utilization rate of individual telephone numbers, existing area codes are entering jeopardy and new area codes are being activated throughout North America at an alarming rate. The pace of area code exhaust has accelerated exponentially in the past few years. For example, in 1984, the

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<sup>21</sup> "Numbering Plan Area" (NPA), or "area code," refers to the first three digits (NXX) of a ten-digit telephone number in the form NXX-NXX-XXXX, where N represents any one of the numbers 2 through 9 and X represents any one of the numbers 0 through 9. 47 C.F.R. § 52.7(a).

<sup>22</sup> See CO Code Guidelines at § 4.1-4.2 (rev. Apr. 26, 1999).

<sup>23</sup> Because NXX codes may not begin with either a 0 or a 1, and because any NXX in the form N11 is also excluded, there are 792 possible usable NXX codes in each NPA. This number represents an upper limit, however, because the existence of protected codes may lower the total number of available NXX codes. Protected codes are NXXs not available for use, typically because they are being used in close geographic proximity in an adjacent NPA in an area where there exists inter-NPA seven-digit dialing.

<sup>24</sup> Jeopardy is defined as a situation where the forecasted and/or actual demand for NXX codes in an area code will exceed the known supply during the planning/implementation interval for area code relief. *NPA Code Relief Planning & Notification Guidelines* (INC 97-0404-016), at § 14.0 (reissued January 27, 1999) (NPA Code Relief Guidelines). This document is available at <<http://www.atis.org/atis/clc/inc/incdocs.htm>>.

<sup>25</sup> Number Utilization Forecast and Trends, submitted by NANPA Lockheed Martin CIS, Feb. 18, 1999 (Number Utilization Study) at 8. This study is currently under review by the NANC. See NANC Meeting Minutes, Feb. 17-18, 1999.

entire NANP had 125 area codes, and by December 1994, 134 area codes had been assigned, an increase of only nine area codes in 10 years.<sup>26</sup> In marked contrast, in 1996 alone, 22 area codes were added to the NANP, and in 1997, 43 area codes were added.<sup>27</sup> 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.<sup>28</sup> 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.<sup>29</sup> With only 680 usable area codes in the NANP, it is foreseeable that the NANP could exhaust in the relatively near term.<sup>30</sup> The compelling need for immediate and comprehensive action to make more efficient use of numbering resources is clear.

22. Concerns regarding the financial and societal costs of area code relief are well-founded. The introduction of a new area code carries with it a significant number of costs and burdens that are sometimes difficult to quantify. Consumers, who are especially reluctant to undergo certain forms of area code relief, are affected by an increase in cost and inconvenience. For example, approximately one-half of customers in an area code to be split will be assigned a new area code. Some tangible costs that consumers may experience in this instance include time and effort associated with notifying others of the change in area code, increased confusion and difficulty in completing calls to parties whose area codes have changed, monetary costs associated with reprinting stationery with the new area code, and time and effort associated with reprogramming telephone automatic dialing systems, and other equipment, to incorporate the new area code.<sup>31</sup> Intangible costs to consumers may include the loss of a community's geographic identity and many other costs which are difficult to quantify.<sup>32</sup>

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<sup>26</sup> See *WHERE HAVE ALL THE NUMBERS GONE? LONG-TERM AREA CODE RELIEF POLICIES AND THE NEED FOR SHORT-TERM REFORM*, Economics and Technology, Inc., March 1998, at 19-24 (*WHERE HAVE ALL THE NUMBERS GONE?*).

<sup>27</sup> Number Utilization Study at 6.

<sup>28</sup> *Id.*

<sup>29</sup> *Id.* at 5.

<sup>30</sup> See Number Utilization Study at 13. Although there are 800 "dialable" NPAs in the NANP, several are reserved for possible NANP expansion, and others—for example those in the form N11—are unassignable. *Id.* at 4.

<sup>31</sup> See *WHERE HAVE ALL THE NUMBERS GONE?* at 20-21.

<sup>32</sup> See *id.* at 20-22.

23. Similarly, businesses also bear significant costs when they, or their customers, are subject to area code relief. Tangible costs may include those associated with reprogramming or replacing telecommunications equipment such as private branch exchanges (PBXs), updating customer databases that contain phone number fields, and reprinting advertising and stationery. Certain industries are uniquely harmed by the transition to a new area code; alarm systems, for example, generally must be individually reprogrammed or even replaced to accommodate changes in dialing patterns.<sup>33</sup> The telecommunications industry, in particular, incurs additional operational costs related to equipment and technology upgrades necessary to provide service. Intangible costs to businesses associated with a change in area code may include a loss of goodwill when customers have difficulties reaching the intended business.<sup>34</sup>

24. State public utility commissions face an enormous burden in determining when, and in what form, to implement area code relief. In the initial stages, state utility commissions must expend resources to convene public meetings and to plan for area code relief. They must also work with the NANPA and the industry to effect the chosen area code relief plan, and bear the costs of notifying the public. Furthermore, state commissions inevitably bear the brunt of consumer dissatisfaction with whatever method of area code relief is chosen.<sup>35</sup>

25. These limitations in the current area code relief paradigm underscore the need for more efficient and longer-term solutions to the numbering crisis. They also establish the need for a shift in focus to other relief methods that effect optimization, and not merely the addition, of numbering resources. Because of the overwhelming costs associated with the implementation of new area codes, we believe that this Commission should take definite and immediate steps to ensure that telecommunications numbering resources are administered more efficiently.

26. *Numbering Resource Optimization Efforts.* The Commission, state public utility commissions, and the telecommunications industry have taken steps to optimize the use of numbering resources through various administrative and regulatory efforts. Many of these undertakings will be examined at length in this Notice, toward the goal of creating a uniform national strategy for numbering resource optimization.

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<sup>33</sup> See Public Utility Commission of Texas Petition for Expedited Waiver of 47 C.F.R. Section 52.19(c)(3)(ii) for Area Code Relief, *Order*, NSD File No. L-98-105, 13 FCC Rcd. 21798, 21803-04 (1998).

<sup>34</sup> For example, a business that has changed its area code may lose customers if an intercept message no longer directs them to the new area code, but rather their call either ends in a generic error message, or is directed to a new party. See *WHERE HAVE ALL THE NUMBERS GONE?* at 20.

<sup>35</sup> A split forces half the consumers to change area codes and use ten or eleven digits to dial numbers in the old area code; an overlay, while allowing all customers to retain the same number, requires all customers to dial ten digits for all local calling, for both inter- and intra-NPA calls. See Colorado Commission comments at 3.

27. One such effort is the development by the industry of the CO Code Guidelines, which were designed to provide a framework for allocation of numbering resources within the geographic area codes of the NANP.<sup>36</sup> Another, mandated by the Commission in its rules and addressed in the CO code guidelines, is the collection of data from service providers through the Central Office Code Utilization Survey (COCUS).<sup>37</sup> The COCUS solicits data on actual and projected CO code utilization for each NPA in the NANP, which the NANPA uses in order to project NPA exhaust in connection with area code relief planning and implementation.<sup>38</sup> A third effort is the development by the NANC of a set of interim audit procedures for the NANPA to use in determining whether selected service providers are in compliance with the CO Code guidelines.<sup>39</sup>

28. Additionally, the industry in January 1999 finalized guidelines for the administration of thousands-block pooling,<sup>40</sup> which uses the capabilities of Location Routing Number (LRN)<sup>41</sup> Local Number Portability (LNP) to allocate telephone numbers to service providers in blocks of 1,000 numbers, rather than in entire NXX blocks containing 10,000

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<sup>36</sup> See discussion *infra* Section IV.A.

<sup>37</sup> See 47 C.F.R. § 52.13(c)(4); CO Code Guidelines at §§ 6.4, 6.6, 9.1. The NANPA collects information on NXX code utilization and projected NXX code demand from the industry. Prior to 1998, this function was performed by the regional Bell Operating Companies, which served as central office code administrators.

<sup>38</sup> As discussed later in this Notice, *see* Section IV.D, although the Commission's rules mandate that the NANPA collect COCUS data, there is no parallel regulation or rule that requires carriers to provide the requested data.

<sup>39</sup> See NANC Meeting Minutes, Feb. 17-18, 1999. The NANPA solicited volunteers to be among the first service providers to be audited. During the interim audits, there are no sanctions, such as withholding of numbering resources, for carrier discrepancies or failure to comply with industry guidelines. Development of permanent audit procedures is ongoing.

<sup>40</sup> Thousand Block (NXX-X) Pooling Administration Guidelines, Draft (INC 99-0127-023) (rev. Jan. 27, 1999) (Thousand Block Pooling Guidelines). This document is available at <<http://www.atis.org/atis/clc/inc/incdocs.htm>>.

<sup>41</sup> Location Routing Number (LRN) is a method used for number porting, which was recommended by the industry and state/regional workshops, and adopted by the Commission in Telephone Number Portability, *Second Report and Order*, CC Docket No. 95-116, 12 FCC Rcd. 12281, 12283 (1997) (*Telephone Number Portability Second Report and Order*).

numbers each. Two states have initiated thousands-block pooling trials in an effort to optimize their numbering resources,<sup>42</sup> and several other states have conducted extensive studies on the impacts of thousands-block number pooling in some or all NPAs within the state.<sup>43</sup>

29. *1998 NANC Numbering Resource Optimization Report (NANC Report)*. Pursuant to a request from the Common Carrier Bureau,<sup>44</sup> the NANC in October 1998 provided a detailed report evaluating a number of measures that may be used to optimize the use of telecommunications numbering resources. The first category, "Measures that Affect Local Calling," includes rate center consolidation, extended local calling, and inconsistent rate centers (IRCs). These measures seek to reduce the demand for central office codes by either reducing the number of rating areas within an NPA, or eliminating the need for carriers to obtain numbering resources within each rate center in an NPA in order to provide service throughout the NPA. The second category, "Measures that are LRN-Based," includes measures that are dependent on the existence of local number portability: individual telephone number (ITN) pooling, thousands-block number pooling, unassigned number porting, and location portability. The final category, "Measures that do not Require Local Number Portability," is a collection of administrative and technological methods related to the management of numbering resources, and includes NXX code sharing, code sharing using route indexing, mandatory ten-digit dialing, industry assignment guidelines, overlays, reducing the demand for telephone numbers, and geographic splits.

30. The Bureau placed the NANC Report on public notice shortly after its receipt.<sup>45</sup>

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<sup>42</sup> The Illinois Commission began a mandatory thousands-block pooling trial in the 847 NPA in June 1998. Petition for Declaratory Ruling and Request for Expedited Action on the July 15, 1997 Order of the Pennsylvania Public Utility Commission Regarding Area Codes 412, 610, 215, and 717, *Memorandum Opinion and Order and Order on Reconsideration*, CC Docket No. 96-98, 13 FCC Rcd. 19009, 19029 (1998) (*Pennsylvania Numbering Order*). Recent reports indicate that a significant number of NXXs were saved as a result of the Illinois pooling trial. See Illinois Number Pooling Trial Within NPA 847 Interim Report (Apr. 26, 1999) (estimating a savings of 137 NXX codes as a result of pooling). This document is available at <<http://www.numberpool.com/POOL/pac.htm>>. The New York Commission began voluntary thousands-block pooling trials in the 212 NPA in July 1998, and in the 718 NPA on Jan. 1, 1999. In New York's trial, a smaller number of NXXs were saved as a result of pooling; the New York Commission attributes this limited success to the fact that the trial was voluntary, rather than mandatory. See New York State Department of Public Service Petition for Additional Delegated Authority to Implement Number Conservation Measures, filed Feb. 19, 1999, at 7.

<sup>43</sup> *E.g.*, Colorado Telephone Numbering Task Force Third Report to the Colorado Public Utilities Commission Statewide Pooling, December 31, 1998, p. 12; Texas Commission comments at 9 and Attachment 10.

<sup>44</sup> See Letter from A. Richard Metzger, Jr., Chief, Common Carrier Bureau, to Alan Hasselwander, Chairman, North American Numbering Council, dated Mar. 23, 1998.

<sup>45</sup> See Common Carrier Bureau Seeks Comment on North American Numbering Council Report Concerning Telephone Number Pooling and Other Optimization Measures, *Public Notice*, DA 98-2265, NSD File No.

The Public Notice specifically solicited comments on 6 of the 14 measures discussed in the report: extended local calling areas, mandatory ten-digit dialing, industry assignment guidelines, thousands-block pooling, individual telephone number pooling, and unassigned number porting. The Bureau received comments from 48 parties.<sup>46</sup>

## **B. General Inquiries**

31. *Costs and benefits comparison.* In addition to general information on the viability and desirability of the numbering resource optimization measures examined herein, we seek specific comment on the relative costs and benefits, both financial and societal, of implementing each measure. It would be particularly helpful for commenters to weigh the cost of extending the life of the current NANP through the various proposed numbering optimization strategies against the projected cost of expansion of the NANP, based on the assumption that continuing current number allocation and use practices will lead to the premature exhaust of the NANP.

32. Although the time frame for NANP exhaust cannot be determined with precision, the NANPA developed two models that predict the NANP will be exhausted in the 2006 to 2012 time frame.<sup>47</sup> The NANC established an industry working group to review the NANPA's exhaust projections.<sup>48</sup> While the NANPA's projections are not universally supported by industry experts, there is general agreement that the expected life of the NANP is limited. We seek comments on the design and assumptions contained in the NANPA's NANP Exhaust Model, and any alternative projections of NANP exhaust that we should consider.

33. In addressing when action needs to be taken to address NANP exhaust, it is critical to establish a benchmark estimate of how long it would take to develop and implement an expanded NANP. For example, if it is estimated that the process will take ten years, then it is imperative that the process begin immediately and that we adopt conservation measures sooner rather than later. If it is estimated to take only two years, there is less urgency to begin work immediately, and more time can be devoted to evaluating alternative options that can extend the life of the existing NANP. Industry numbering experts and the NANPA are already exploring

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L-98-134 (rel. Nov. 6, 1998). Comments on the NANC Report were due on December 21, 1998.

<sup>46</sup> See list of commenters at Appendix A.

<sup>47</sup> Number Utilization Study at 17. One model is a top-down model that projects NANP exhaust based on a trend of historic NPA consumption. The second is a bottom-up model that projects NANP exhaust based on the projected demand for NXX codes. Both models yield similar results. See also NANP Exhaust Study.

<sup>48</sup> NANC Meeting Minutes, Feb. 17-18, 1999. See also Report of the NANP Exhaust Review Team (May 3, 1999) concluding that using alternative, but reasonable, assumptions, NANP exhaust is likely to occur in the 2005 to 2016 time frame).

options for NANP expansion.<sup>49</sup> Based on their work, we believe that ten years may be a conservative time frame for rolling out a new NANP. We seek comment on this estimate and request that commenters provide alternative projections. Commenters should provide a detailed analysis of any projections provided.

34. We also seek comment on what costs will be incurred in expanding the NANP. We note that available estimates for the total cost of expanding the NANP vary greatly; preliminary estimates of the total costs (telecommunications industry and societal combined) discussed at the February 1999 NANC meeting established a range of \$50 to \$150 billion.<sup>50</sup> These estimated costs are substantial, and would, we believe, significantly outweigh the cost of implementing all or most of the numbering resource optimization solutions proposed in this Notice. Moreover, we believe that extending the life of the NANP by as little as ten years could yield substantial benefits.<sup>51</sup> We seek comment on whether these preliminary estimates are within a reasonable range or whether the actual costs can be expected to be materially higher or lower. Commenters providing estimates should separate their cost estimates into telecommunications industry costs and societal costs.

35. *Adoption of rules.* Many of the proposals set forth in this Notice build upon procedures and practices currently governed by voluntary industry guidelines, which lack enforceability. We are mindful of the deregulatory intent of the 1996 Act, and do not seek to impose any unnecessary regulation. Under the current system for allocation of numbering resources, however, it is difficult for the industry to police itself effectively, given that each carrier has an incentive to obtain as many numbers as possible, especially in places where area codes are rapidly reaching exhaust. In such light, we seek specific comment on which of the measures we

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<sup>49</sup> See North American Numbering Plan (NANP) Expansion Report, Draft (rev. March 1999). This document is available at <<http://www.atis.org/atis/clc/inc/incwdocs.htm>>.

<sup>50</sup> NANC Meeting Minutes, Feb. 17-18, 1999.

<sup>51</sup> To develop a rough estimate of the benefits that could be realized by extending the life of the existing NANP, we provide for illustrative purposes the following analysis. Assuming that the total societal cost of replacing the NANP is \$100 billion and that the real cost of capital is 3%, the present value of replacing the NANP in 10 years would be \$74.4 billion. In other words, \$74.4 billion invested today at the real cost of capital will yield \$100 billion in ten years. If some combination of number optimization measures can extend the NANP another ten years—so that it does not have to be replaced until year 20—the present value of \$100 billion would be \$55.4 billion. This means that extending the NANP in ten years is worth \$19 billion in today's dollars (the difference between \$74.4 billion and \$55.4 billion). If the NANP were to last 20 years without numbering optimization and 30 years with it, the benefits would be approximately \$14.2 billion (the present value of \$100 billion in 30 years is \$41.2 billion). In either case, these results suggest that the benefits of numbering optimization could be substantial. They would be even greater (\$33 billion) if numbering optimization extended the life of the NANP 20 years.

discuss in the Notice should be adopted as FCC rules. Alternatively, should we direct the NANC to ensure that certain of these measures are incorporated into existing industry guidelines? Further, we seek comment on the suggested interplay between FCC rules and industry guidelines on numbering optimization. For example, should we set forth general federal requirements for numbering resource optimization, and leave the detailed implementation of these requirements to industry bodies?

#### IV. ADMINISTRATIVE MEASURES

##### A. Introduction

36. As noted above, one of the major drivers of number exhaust is the lack of discipline in the process by which numbering resources are administered and allocated. Currently, the procedures for the allocation of numbering resources within the geographic area codes of the NANP are set forth in the CO Code Guidelines, which were developed and are maintained by the Industry Numbering Committee (INC).<sup>52</sup> Among other things, these guidelines set forth criteria for the allocation of NXX codes, the responsibilities of the Central Office Code Administrator,<sup>53</sup> applicants and code holders, as well as NXX code reclamation requirements and certain code conservation measures. The INC updates the guidelines as needed or at the direction of the NANC.<sup>54</sup> The guidelines were originally developed at the direction of the FCC<sup>55</sup> and FCC rules require the NANPA to perform its numbering administration functions in accordance with the guidelines.<sup>56</sup>

37. As is identified in greater detail below, the current guidelines do not impose

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<sup>52</sup> The INC is a standing committee of the Carrier Liaison Committee (CLC), one of the fora sponsored by the Alliance for Telecommunications Industry Solutions (ATIS). The INC addresses issues associated with the planning, administration, allocation, assignment and use of numbering resources and related dialing considerations, and has developed guidelines for the assignment and administration of all types of numbering resources, as well as for the administration of area code relief.

<sup>53</sup> Transition of Central Office Code Administration responsibilities to the NANPA began on February 20, 1998, and is scheduled to be completed by June 1999.

<sup>54</sup> See Letter from NANC Chairman Alan C. Hasselwander to INC Moderator dated July 30, 1997. The CO Code Guidelines were most recently updated on April 26, 1999.

<sup>55</sup> CO Code Guidelines at § 1.0 n.1.

<sup>56</sup> In pertinent part, 47 C.F.R. § 52.13(d) states, "The NANPA . . . shall administer numbering resources in an efficient and non-discriminatory manner, in accordance with Commission rules and regulations and the guidelines developed by the INC and other industry groups pertaining to the administration and assignment of numbering resources . . . ."

adequate constraints on a carrier's ability to obtain and stockpile numbers for which it has no immediate need. To address these shortcomings, in this section, we set forth a number of administrative proposals intended to inject a greater degree of discipline into the process of allocating and administering numbering resources. Generally speaking, these proposals would place an increased responsibility on carriers to provide information about their utilization of the numbering resources that have already been allocated to them. Because the measures proposed in this section do not require implementation of new systems or technologies, we believe that they would impose minimal costs on the industry (and therefore, indirectly, on the consumer), and could likely be put into place in a relatively short time period. Further, because these measures do not rely on the LNP platform, as do certain of the measures discussed in Section V, they may be applicable immediately to all service providers that use numbering resources, regardless of whether the provider has yet deployed (or, for that matter, will ever deploy) number portability. We further believe that implementing these measures will increase the efficiency with which carriers use numbers, by tying allocation of new numbering resources to need, increasing carrier accountability for numbering utilization, and speeding the return of unused codes. We seek comment on the costs and benefits of implementing each of the measures discussed in Section IV.

38. We recognize that the industry, through the NANC, has been working to develop recommendations with respect to a number of the proposals outlined below, in particular in the areas of standardized number status definitions, enhanced utilization and forecast data reporting, and audits and enforcement. In many cases, we have drawn upon the substantial work efforts of industry bodies in developing our own proposals. With respect to several of the measures addressed in this section, we expect to receive recommendations from the NANC before the close of the comment cycle in this proceeding,<sup>57</sup> and we invite commenters to address the NANC proposals and recommendations in their comments in response to this Notice. We specifically request the NANC to make recommendations regarding which, if any, of the measures discussed in Section IV should be adopted as FCC rules.<sup>58</sup> We request that the NANC provide these recommendations concurrently with the deadline for receipt of reply comments on this Notice.

## **B. Definitions of Categories of Number Usage**

39. As a preliminary matter, we tentatively conclude that a uniform set of definitions for the status of numbers should be established for purposes of implementing the proposals set

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<sup>57</sup> See, e.g., Letter from Yog R. Varma, Deputy Chief, Common Carrier Bureau, to Alan C. Hasselwander, Chairman, NANC, dated April 15, 1999, requesting that the NANC provide recommendations on a revised COCUS model by June 30, 1999.

<sup>58</sup> For example, as discussed in Section IV.D, *infra*, the NANC has already recommended that the Commission adopt rules requiring carriers to report forecast and utilization data to the NANPA. See NANC Meeting Minutes, Nov. 18-19, 1998.

forth in this Notice. We believe that uniform definitions are essential to effective communications between carriers, the NANPA, and regulatory entities -- a common understanding of definitions helps to ensure that all participants in the number administration process are using a common "language." As such, uniform definitions will improve our ability to collect accurate data on number utilization and demand, which in turn will improve our ability to forecast number exhaust, and will assist in enforcing the CO Code Guidelines.

40. We note that the industry already has devoted a substantial degree of effort to establishing a uniform set of number status definitions.<sup>59</sup> Most of the definitions set forth in this section are drawn directly from industry proposals. As a general matter, we seek comment on whether these uniform number status definitions should be codified as part of the FCC's rules, as are certain definitions that relate to the status of toll free numbers.<sup>60</sup> In the alternative, we seek comment on whether uniform number status definitions should be incorporated into the CO Code Guidelines and the Thousand Block Pooling Guidelines, as intended by the INC.<sup>61</sup> We further seek comment on whether all of the proposed definitions are necessary and useful, as well as on whether we should adopt any additional number status definitions, such as definitions related to telephone numbers allocated to resellers by facilities-based carriers. We seek comment on the following set of proposed number status definitions.

41. An *administrative number* is one which is not or should not be assigned to a customer, because it is in one of the following categories: employee/official number; Location Routing Number (LRN); test number; Temporary Local Directory Number (TLDN); or Wireless E911 ESRD/ESRK.<sup>62</sup> The referenced subcategories are as follows:

- An *employee/official number* is a number assigned by a service provider for its own internal business purposes.<sup>63</sup> We seek comment on the types of internal business purposes for which carriers use employee/official numbers. We further seek comment on whether this

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<sup>59</sup> The INC recently concluded work on a common set of telephone number status definitions, which are included in the CO Code Guidelines. See CO Code Guidelines at § 13.0. The NANC is currently working on the definition of reserved telephone numbers, and is expected to provide a recommendation to the Commission in the near future. A number of the parties that commented in this proceeding support the industry's efforts to arrive at common number status definitions. See, e.g., Ameritech comments at 5-7; MCI WorldCom comments at 25-26; PCIA comments at 13.

<sup>60</sup> See 47 C.F.R. § 52.103.

<sup>61</sup> See Ameritech comments at 5-7; AT&T comments at 18-19; SBC comments at 23-24.

<sup>62</sup> CO Code Guidelines at § 13.0.

<sup>63</sup> *Id.*

definition should be tightened, either by specifying appropriate uses for employee/official numbers, or by identifying uses that are not appropriate.

- A *Location Routing Number (LRN)* is the ten-digit (NPA-NXX-XXXX) number assigned to a switch or point of interconnection (POI) used for routing in a permanent local number portability environment.<sup>64</sup>

- A *test number* is a number assigned for inter- and intra-network testing purposes.<sup>65</sup> We seek comment on the types of purposes for which carriers use test numbers. We also seek comment on whether this definition should be tightened, either by specifying appropriate testing uses for numbers, or by identifying uses that are not appropriately termed "testing."

- A *Temporary Local Directory Number (TLDN)* is a number dynamically assigned on a per-call basis by the serving wireless service provider to a roaming subscriber for the purpose of incoming call setup.<sup>66</sup>

- A *wireless E911 emergency services routing digits/key (ESRD/ESRK) number* is a ten-digit number used to route an E911 call to the appropriate Public Service Answering Point (PSAP) when that call is originating from wireless equipment.<sup>67</sup> If a NANP telephone number is used as an ESRD or ESRK, this number cannot be assigned to a customer.

42. An *aging number* is a number in the aging process.<sup>68</sup> Aging is the process of making a disconnected telephone number unavailable for re-assignment to another subscriber for a specified period of time. An aging interval includes any announcement treatment period, as well

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<sup>64</sup> *Id.* A POI is the physical location where a carrier's circuits interconnect for the purpose of interchanging traffic on the Public Switched Telephone Network (PSTN).

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> *Id.* The INC definition further specifies that the ESRD identifies the cell site and sector of the call origination in a wireless call scenario. The ESRK uniquely identifies the call in a given cell site/sector and correlates data that is provided to a PSAP by different paths, such as the voice path and the Automatic Location Identification (ALI) data path. Both the ESRD and ESRK define a route to the proper PSAP. The ESRK alone, or the ESRD and/or Mobile Identification Number (MIN), is signaled to the PSAP where it can be used to retrieve from the ALI database the mobile caller's call-back number, position, and the emergency service agencies (e.g., police, fire, medical, etc.) associated with the caller's location. The ESRD/ESRK is not used in the wireline context.

<sup>68</sup> CO Code Guidelines at § 13.0.

as the blank telephone number intercept period.<sup>69</sup> A number is disconnected when it is no longer used to route calls to equipment owned or leased by the disconnecting subscriber of record. We seek comment on the standard aging intervals currently used by carriers, as well as on whether we should set limits on the amount of time a number may remain in “aging” status, e.g., 90 to 120 days.<sup>70</sup>

43. An *assigned number* is a number that is: (a) working in the PSTN under an agreement (e.g., tariff, contract) at the request of a specific customer for that customer's use, or (b) not yet working but has a customer service order pending.<sup>71</sup> We seek comment also on whether this definition should be further refined by limiting the time during which a customer service order may be considered to be “pending,” e.g., 3 to 5 days.

44. A *dealer numbering pool* is a set of numbers allocated by a service provider to a retail dealer for use in the sale and establishment of service on behalf of that service provider.<sup>72</sup> We seek comment regarding how carriers currently classify these numbers for the purpose of determining available inventories. We seek comment on how dealer numbering pools should be treated, and what, if any, limitations should be imposed in connection with assigning numbers to dealer numbering pools.

45. A *ported-out number* is an assigned number that is ported from the code holder/block holder to another service provider.<sup>73</sup> With respect to ported-out numbers, we seek comment on how the porting carrier and the ported-to carrier should treat these numbers for reporting purposes. Should both of these carriers treat the number as unavailable for assignment? Should the ported-to carrier be entitled to treat the ported-out number as an assigned number for purposes of calculating its utilization level?

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<sup>69</sup> The blank telephone number intercept period is the period when incoming callers to a disconnected number receive a message redirecting them to a new number to reach the party called.

<sup>70</sup> The INC is currently in the process of drafting guidelines regarding Aging and Administration of Disconnected Telephone Numbers, Draft (March 22, 1999). This document is available at <<http://www.atis.org/atis/clc/inc/incwdocs.htm>>. These draft guidelines propose aging intervals for residential telephone numbers that range from a minimum of 30 days to a maximum of 90 days; for business numbers, the range proposed is a minimum of 90 days to a maximum of 365 days; for high volume calling numbers, such as time and weather services or ticket vendors, an 18-month aging interval is proposed.

<sup>71</sup> CO Code Guidelines at § 13.0.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

46. *Reserved number*: The industry has been working to craft a definition of reserved telephone number.<sup>74</sup> To date, the industry has crafted a proposed set of characteristics for a reserved number, which include:

- (1) A reserved number is a non-working number.
- (2) A reserved number has been set aside by a service provider at the request of a specific end-user customer for that customer's future use.
- (3) The reserved status of a telephone number is reflected in the telephone number administration system of the service provider in whose inventory the numbers are being reserved.
- (4) The name of the party requesting the reservation is in the service provider's administration system.
- (5) The end user is aware of the reservation of numbers.
- (6) A reserved number has some restrictions with respect to timeframe and quantity.
- (7) Numbers reserved by a service provider on behalf of a customer may be ported where number portability is available and where any portion of the associated working numbers have been or will be ported from that service provider.<sup>75</sup>

47. In addition, the industry has set forth the following broad guidelines with respect to reserved numbers:

- (1) Service providers must ensure number reservations are not used for the purposes of hoarding.
- (2) All classes of customers must be treated equally under the application of reserved number guidelines.
- (3) Reserved number guidelines must apply equally to all service providers making telephone number reservations on behalf of their end-user customers.
- (4) Reserved number guidelines must apply equally to service providers making use of telephone numbers for their end user customers from another service provider's inventory (e.g., resellers, Type 1 interconnection for Commercial Mobile Radio Service (CMRS) carriers).
- (5) The reserved number intervals begin for all customers regardless of any previous reservations, on the effective date of this process.
- (6) The original interval limitation established for given customers shall continue uninterrupted if or when the customer changes service providers.<sup>76</sup>

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<sup>74</sup> See NANC Meeting Minutes, Dec. 16-17, 1999, at 19.

<sup>75</sup> See NRO Report to the NANC, Apr. 21, 1999.

<sup>76</sup> *Id.*

48. We are quite concerned about how reserved numbers are categorized, and whether they should be categorized as "unavailable for assignment." We believe that an appropriately narrow definition must be adopted for both "reserved number" and "reserved code" to prevent potential abuse, e.g., a carrier's use of reserved status as a means to amass and retain excessive inventories of numbers for which it has no immediate need. In this light, we seek comment on the NANC's working set of characteristics set forth above, and whether an appropriately narrow definition and/or set of reserved number guidelines can be fashioned from them. In the alternative, we seek comment on MCI WorldCom's proposal that a "reserved number" be defined as a number set aside by a service provider under the provisions of a legally enforceable written agreement at the request of a specific customer for future use.<sup>77</sup>

49. Moreover, we seek comment on whether time limits should be imposed on the amount of time a code may be held in reserved status. For example, our toll free assignment rules specify that a number may be held in reserved status for only 45 days.<sup>78</sup> We seek comment on whether 45 days is an appropriate period of time for a number to be held in reserved status. In the alternative, we seek comment on whether carriers should be required to pay a fee for numbers held in reserved status. We note that it is the practice of some carriers to require such a fee from parties for whom they are reserving numbers, in order to ensure that the request for reservations is bona fide. We seek comment on whether the same type of assurance, via fee, should be required from reserving carriers themselves.

50. A number in *soft dial tone* is a number temporarily assigned to line equipment and facilities which permits restricted dialing (e.g., operator, 911, service provider business office).<sup>79</sup> We seek comment concerning the purposes for which carriers use soft dial tone, and whether these numbers are best categorized as a subset of administrative numbers.

51. Telephone numbers *available for assignment* are numbers within existing codes (NXX) or blocks (NXX-X) that are available for assignment to subscriber access lines or their equivalents within a switching entity/point of interconnection (POI), and are not categorized as assigned, administrative, aging, or reserved.<sup>80</sup>

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<sup>77</sup> MCI WorldCom comments at 25-26.

<sup>78</sup> See 47 C.F.R. § 52.103(9)(b).

<sup>79</sup> CO Code Guidelines at § 13.0.

<sup>80</sup> *Id.*

52. Telephone numbers *unavailable for assignment* are numbers that are characterized as administrative, aging, assigned, or reserved.<sup>81</sup> We seek comment on whether this number status definition promotes our numbering optimization objectives, or whether it should be narrowed, possibly by excluding reserved numbers.

53. In the CO Code Guidelines, *working telephone numbers* are defined as the quantity of telephone numbers within existing NXX codes that are assigned to working subscriber access lines or their equivalents, e.g., direct inward dialing trunks, paging numbers, special services, temporary local directory numbers (TLDNs), etc., within a switching entity or POI.<sup>82</sup> This definition seems to overlap with the definition of an *assigned number* set forth above. Also, the definition of a *working telephone number* contradicts the definition of an *assigned number* because the *working telephone number* definition considers TLDNs to be working numbers, but the definition of an assigned number does not. For these reasons, we seek comment on whether the definition of *working telephone number* should include TLDN and whether the definition of *working telephone number* should be included in a comprehensive set of telephone number status definitions.

### C. Verification of Need for Numbers

54. *Current central office code assignment procedures.* Under the current CO Code Guidelines, NXX codes are assigned to entities for use at a switching entity or POI that they own or control.<sup>83</sup> The NANPA must assign NXX codes pursuant to the assignment criteria on a first-come, first-served basis.<sup>84</sup>

55. An "initial" code is the first NXX code assigned to the carrier at a new switching entity, POI or unique rate center, and the administrator is to assign initial codes to the extent required to terminate traffic.<sup>85</sup> To obtain an initial code, the applicant must certify that a need exists due to routing, billing, regulatory or tariff requirements.<sup>86</sup> Although applicants may be

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<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> *Id.* at §§ 3.1, 4.1.

<sup>84</sup> *Id.* at § 4.4.

<sup>85</sup> *Id.* at § 4.1.

<sup>86</sup> *Id.* at § 4.1.2. An applicant may also obtain an initial NXX code in order to establish an initial Location Routing Number (LRN) per POI or switching entity for each Local Access and Transport Area (LATA), if the carrier has no existing resources available for LRN assignment. *Id.* at § 4.1.2.1.

required to provide the administrator with technical support for initial code requests, the guidelines specify that utilization criteria or projection will not be used to justify an initial NXX code assignment.<sup>87</sup> The applicant for an initial code must be licensed or certified to operate in the area for which the code is requested, and must demonstrate this to the NANPA.<sup>88</sup>

56. A "growth" code is an additional NXX code requested for an established switching entity, POI or rate center when the telephone numbers available for assignment in previously assigned NXX codes will not meet expected demand.<sup>89</sup> To obtain a growth code, an applicant must certify that existing codes associated with that switch, POI or rate center will exhaust within 12 months, and must prepare a Months-to-Exhaust Worksheet.<sup>90</sup> Applicants are required to complete the Months-to-Exhaust Worksheet, and to maintain it in their files for audit purposes; recent revisions to the CO Code Guidelines also require carriers to submit the Months-to-Exhaust Worksheet to the NANPA when applying for growth codes.<sup>91</sup> In jeopardy NPAs, code holders must certify that existing NXX codes will exhaust within six months.<sup>92</sup>

57. *Applicant demonstration of readiness or need.* As shown above, the current CO Code Guidelines do not require applicants to demonstrate their readiness to utilize initial codes, or their need to obtain growth codes. The absence of such controls may lead some carriers to obtain numbers that they are unable to use in the near term. This behavior is especially likely in NPAs that are approaching jeopardy, as carriers may be concerned that if they do not obtain an excess supply of numbers, they may not be able to maintain an adequate inventory once jeopardy has been declared. In this section, we propose certain verification measures designed to prevent carriers from obtaining numbering resources that they do not need in the near term.

58. *Initial codes.* With respect to an applicant's ability to obtain an initial code, we

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<sup>87</sup> *Id.* at § 4.1.

<sup>88</sup> *Id.* at § 4.1.4.

<sup>89</sup> *Id.* at § 13.0.

<sup>90</sup> *Id.* at § 4.2.1. The CO Code Assignment Certification Worksheet-TN Level (Months-to-Exhaust Worksheet), set forth in Appendix B to the CO Code Guidelines, requests data on telephone numbers available for assignment, growth history for the past six months, and projected demand for the coming 12 months.

<sup>91</sup> *See* CO Code Guidelines at Appendix B n.1.

<sup>92</sup> Jeopardy is defined as a situation where the forecasted or actual demand for NXX resources will exceed the known supply during the planning/implementation interval for relief. CO Code Guidelines at § 13.0. In jeopardy NPAs, the Months-to-Exhaust Worksheet requests data on telephone numbers available for assignment, growth history for the past six months, and projected demand for the coming six months.

seek comment on what type of showing would be appropriate. It is not our intent to circumscribe any carrier's ability to obtain initial codes in order to initiate provision of service or to expand its service "footprint," but we wish to determine whether requesting additional information from applicants for initial codes could prevent actual or potential abuses of the process. In particular, we are concerned that under the current guidelines, certain new entrants may obtain numbering resources well in advance of when they will actually be able to provide service, which results in a highly inefficient distribution of numbering resources. To prevent this type of situation, we seek comment on whether applicants should be required to make a particular showing regarding the equipment they intend to use to provide service, the state of readiness of their network or switches, or their progress with their business plan, prior to obtaining initial codes, or whether any other type of showing should be required.

59. We are also concerned about instances in which carriers have obtained initial codes for use in areas in which they are not licensed or certificated.<sup>93</sup> We seek comment on whether applicants should be required to submit evidence of their license/certificate with their applications for initial codes, or conversely, whether we should place an obligation on the NANPA to check the status of an applicant's license or certification with the relevant state commission prior to issuing the requested initial code. To the extent that commenting parties support the latter proposal, they should comment on whether placing this obligation on the NANPA will slow down the time in which the NANPA processes initial code applications, and if so, by how much. We seek comment generally on the most efficient, least burdensome way to ensure that applicants do not obtain NXX codes in areas where they are not licensed or certificated. For example, would a general certification by a carrier that it intends to implement service within a specific timeframe adequately assure that carriers only obtain initial codes in areas where they are licensed or certificated?

60. *Growth codes.* With respect to carriers' ability to obtain growth codes, we tentatively conclude that applicants should be required to provide data that supports their need to obtain additional numbering resources, as a means of preventing the building and carrying of excessive inventories. While verification of need will not eliminate an applicant's incentive to hoard, it will reduce the applicant's ability to hoard numbering resources without being detected, by providing a mechanism for oversight of applications. We further tentatively conclude that the NANPA may not allocate additional numbering resources to an applicant, unless the applicant has made a satisfactory demonstration of need. We seek comment on these tentative conclusions.

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<sup>93</sup> The CO Code Guidelines require that carriers must be certified before they may obtain any NXX codes. CO Code Guidelines at § 4.1.4. Wireline carriers seeking to provide service in a state must obtain a certificate from the state authorizing them to do so. Fixed wireless carriers may also be subject to state certification requirements, but states are specifically preempted from regulating entry of CMRS providers. *See* 47 U.S.C. § 332(c)(3)(A). However, all wireless carriers seeking to use spectrum to provide service in particular geographic areas must be licensed in those areas, under Title III of the Communications Act, by the Commission.

61. *Method of verification of need.* As outlined above, applicants are currently required to complete a Months-to-Exhaust Worksheet prior to applying for growth codes, and under recent revisions to the CO Code Guidelines, to provide the worksheet to the NANPA.<sup>94</sup> We seek comment on whether requiring applicants to submit the Months-to-Exhaust Worksheet along with an application for a growth code would be an adequate demonstration of need for additional numbering resources.<sup>95</sup> We further seek comment on whether NANPA should be required to evaluate the Months-to-Exhaust projection prior to allocating the requested code. We are concerned, however, about using the Months-to-Exhaust Worksheet as a proxy for need, because the Months-to-Exhaust analysis is forward-looking, and cannot be verified until after the carrier has already obtained the requested NXX code. Further, the Months-to-Exhaust forecast is largely subjective and dependent on good faith projections by each carrier. We seek comment on whether there are modifications to the current Months-to-Exhaust forecast that might alleviate these concerns.

62. As an alternative, we seek comment on whether applicants should be precluded from requesting growth codes from the NANPA until they have achieved a specified level of numbering utilization (or “fill rate”) in the area in question. Several commenters support use of number utilization thresholds as a means of verifying an applicant’s need for numbers.<sup>96</sup> We believe that a utilization threshold may be superior to a Months-to-Exhaust forecast because it is an objective measurement that may be verified before the applicant obtains numbering resources. Moreover, a utilization threshold standard reflects the applicant’s actual historical experience in efficiently utilizing numbering resources, rather than marketing projections.

63. *Setting a utilization rate.* We seek comment generally on whether a percentage utilization threshold should be adopted, and if so, on the appropriate level for that threshold.<sup>97</sup>

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<sup>94</sup> See *supra* ¶ 56 and note 91.

<sup>95</sup> A number of commenters support using the Months-to-Exhaust forecast as verification for carrier need for numbers. See, e.g., AirTouch comments at 4, 21-24; Bell Atlantic comments at 6-7; Bell Atlantic Mobile comments at 13; PrimeCo comments at 6-7.

<sup>96</sup> AT&T comments at 13-14; New York Commission comments at 14-18; Maine Commission comments at 5-6; SBC comments at 22-24. *But see, e.g.,* Bell Atlantic comments at 6.

<sup>97</sup> See, e.g., New York Commission comments at 15-16 (suggesting that 65% to 85% is an appropriate range for a utilization requirement). On January 28, 1999, CTIA filed a proposal suggesting several numbering optimization measures, including the setting of a utilization rate in jeopardy NPAs. See Letter from Michael Altschul, CTIA, to Yog Varma, FCC, dated Jan. 28, 1999 (CTIA Jan. 28, 1999, *ex parte*), attaching CTIA Jan. 28, 1999 Numbering Proposal (suggesting that the current utilization rate in a jeopardy NPA should be set at 60%, and that this rate should be increased to 65% in the year 2000, and then to 70% in the year 2001). PrimeCo urges the Commission to reject fill rates. PrimeCo comments at 6-7.

We further seek comment on whether we should set a uniform nationwide utilization threshold or, in the alternative, establish a range within which state commissions may set the utilization rate. We also seek comment on whether it is possible to set a uniform utilization level that applies to all types of service providers, or whether there may be a need to set different utilization levels for different types of services or service providers. In addition, we seek comment on whether utilization levels, if adopted, should gradually be increased over time, in order to provide carriers time to adjust to the new requirements, and to improve their utilization performance over time.<sup>98</sup> We further seek comment on whether the utilization threshold standard should apply nationwide, or only in areas that are experiencing the most difficulties with number exhaust, e.g., the largest 100 metropolitan statistical areas (MSAs) and in area codes where a jeopardy condition has been declared. Alternatively, we seek comment on whether the smaller MSAs should have a lower utilization rate than the largest 100 MSAs. We seek comment on the costs and benefits of establishing a utilization threshold for these areas.

64. *Calculating utilization levels.* We also seek comment on how utilization thresholds should be calculated. We propose that a carrier's utilization rate in a given geographic area (NPA or rate center) should be calculated by dividing the quantity of "telephone numbers unavailable for assignment"<sup>99</sup> (the numerator) by the total quantity of telephone numbers in all NXXs assigned to the carrier within the appropriate geographic area (the denominator), and multiplying the result by 100.<sup>100</sup> We are concerned, however, that certain number status categories, including reserved numbers, numbers allocated to resellers, and numbers in dealer numbering pools, may be used by carriers to stockpile numbers. That is, carriers may assign NXX codes or portions thereof to these categories, and then count these codes or numbers as being utilized, even when they are not being used to provide any type of service. We are particularly concerned that the incentive to assign numbers to these categories for such strategic purposes may increase if we move to a number allocation regime based on utilization thresholds, as proposed. Accordingly, we seek comment on whether these categories of numbers should be excluded from the "numerator," or whether there are other ways to prevent the types of abuses about which we are concerned.

65. In most cases, newly acquired and activated NXX codes will have lower utilization rates than older, more "mature" NXXs. Accordingly, we seek comment on whether applicants should have the option of excluding from their utilization rate calculation all NXXs obtained in the period immediately preceding the carrier's request for additional numbering resources (i.e., all

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<sup>98</sup> CTIA Jan. 28, 1999 Numbering Proposal.

<sup>99</sup> See *supra* ¶ 52.

<sup>100</sup> The denominator must include all NXX codes assigned, regardless of whether the NXX codes have been activated in the Local Exchange Routing Guide (LERG).

newly acquired NXXs).<sup>101</sup> We seek comment on whether "newly acquired" NXXs should be defined as those assigned to the applicant by the NANPA during the 90 days prior to the new application, or whether 120 days is a more appropriate period for exclusion.<sup>102</sup> We propose that carriers wishing to take advantage of such an exclusion must exclude the newly acquired NXXs from both the numerator and the denominator of their utilization rate calculation. Thus, to the extent that a carrier had begun to assign numbers from a newly acquired NXX, the numbers assigned may not be included in the numerator, if the entire NXX were not included in the denominator of the equation. We seek comment on this proposal. Wireless carriers have expressed concern that, because of the existence of seasonal fluctuations in demand for their services, the establishment of a utilization threshold will penalize them for not being able to utilize their NXXs immediately.<sup>103</sup> Therefore, we seek comment on whether the exclusion of newly acquired NXXs from the utilization rate calculation will accommodate these carriers' unique situation.

66. We further seek comment on whether utilization levels should be calculated on an NPA-wide or a rate center-wide basis. That is, should all of the NXX code resources that an applicant has been assigned in a particular NPA be included in the calculation of its utilization rate for the purposes of obtaining another NXX code in that NPA, or should the calculation be limited to only the NXX codes that have been assigned in the rate center in which the applicant wants an additional code? In particular, we seek comment on: a) which method more closely tracks how carriers actually use numbering resources; b) which method is least likely to result in strategic number acquisition behavior (or "gaming") by carriers; c) which method is least likely to result in carriers being unable to obtain numbering resources necessary to meet customer demand (for example, to expand service "footprint"); d) which method is least likely to have an anticompetitive effect on certain segments of industry; and e) which method would be less burdensome from a regulatory standpoint.

67. In the event that we decide that utilization should be calculated on an NPA-wide basis, we seek comment on how regional variances in number utilization patterns should be taken into account. For example, some NPAs contain both suburban/rural and urban areas. In such

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<sup>101</sup> CTIA proposes that utilization thresholds be calculated by looking at data from "mature" NXX codes, which it defines as NXX codes that have been assigned to, and are available for use by, a carrier for at least 90 days. *See* CTIA Jan. 28, 1999 Numbering Proposal. *See also* 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 and CC Docket No. 95-116, FCC 99-19 (rel. Feb. 9, 1999) (*CMRS LNP Forbearance Order*) at ¶¶ 46-47.

<sup>102</sup> *CMRS LNP Forbearance Order* at ¶¶ 46-47.

<sup>103</sup> *See, e.g.*, PrimeCo comments at 6-7.

"mixed" NPAs, carriers may have high utilization rates in rate center(s) located in a densely-populated areas of the NPA, and lower utilization rates in the more rural or suburban rate center(s) in the NPA. As a consequence, a carrier may be unable to meet an NPA-wide utilization rate, even when it is running into numbering shortages in particular rate centers in more densely-populated areas. Additionally, we seek comment on whether and how "mixed" NPAs should be identified, as well as on whether different utilization levels should be set for mixed NPAs. In the alternative, should applicants be entitled to obtain additional growth codes in a particular rate center within a "mixed" NPA by demonstrating an extraordinary level of utilization within that rate center, e.g., 85%?

68. *Impact on small carriers and new entrants.* We further seek comment on whether, in implementing a numbering utilization threshold, we should distinguish between carriers that have a small presence in a given NPA, or other appropriate geographic area, because they are either new market entrants or small carriers, and those that have a larger presence. Imposing the same utilization requirements on carriers with a small market presence as on those with a much larger presence may discourage market entry and competition, as well as diminish a smaller or newer carrier's ability to react to market demands.<sup>104</sup> We seek comment on whether, from a competitive standpoint, different utilization thresholds should apply to carriers with a small market presence, and if so, what should be considered to be a small market presence. For example, should we apply a graduated utilization threshold scheme to carriers, based on the number of NXX codes they have in a given NPA (e.g., 50% or lower utilization rate for carriers with up to five NXXs in the NPA, 60% for carriers with up to ten NXXs, etc.)? We emphasize that the different treatment afforded to small carriers would apply only to those carriers with few numbering resources.

#### **D. Reporting/Record-keeping Requirements**

69. It is necessary for the NANPA to collect information on the utilization of numbering resources and projected future demand for numbering resources in order to allocate numbering resources efficiently and to forecast NPA exhaust dates reliably. As we discuss in more detail in this section, we believe that it is necessary to strengthen the current system for forecast and utilization data collection, both to enhance the accuracy with which the NANPA may predict patterns of number usage and of NPA and NANP exhaust, and also to serve as a check on the ability of unscrupulous carriers to hoard numbers or otherwise abuse the number allocation and administration system.

70. The need for better and more timely data on number usage and forecasted demand has grown much more acute as competition in the local exchange market has developed and the

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<sup>104</sup> See, e.g., Vanguard comments at 3-4.

demand for numbers has rapidly increased. The current data reporting mechanisms were designed when the local exchange market was largely a monopoly; in that period, the industry and regulators had fewer concerns about how numbers were being utilized or whether carrier forecasts were indeed accurate. Today, however, as a result of the tremendous demand for numbers resulting from the recent opening of the local exchange market to competition, and the rapid growth of the wireless telecommunications industry, numbering resources are being allocated to carriers at an alarming rate.

71. *Current data collection mechanism: COCUS.* The current mechanism for forecast and utilization data collection is the Central Office Code Utilization Survey (COCUS). The NANPA administers the COCUS annually, which asks each carrier to provide information on the total number of NXX codes assigned to it in each NPA, as well as its forecasted demand for NXX codes over the next five years.<sup>105</sup> Code holders must provide additional numbering utilization data in NPAs in which a jeopardy condition has been declared.<sup>106</sup> The NANPA uses the COCUS data to monitor the use of NXX codes within each NPA and to forecast the date by which all NXX codes within each NPA will be assigned.<sup>107</sup>

72. As currently configured, the COCUS has a number of shortcomings. First, because the COCUS was established through industry guidelines, carriers currently do not have a regulatory obligation to respond, which impedes the NANPA's ability to gather comprehensive and accurate number utilization and forecast information. Carrier response has not been sufficient to enable the NANPA to gather the information it requires.<sup>108</sup> Second, COCUS relies, in large part, on carrier forecasts, but the current CO Code Guidelines do not provide any mechanism by which the NANPA can evaluate the reasonableness of these forecasts. Third, because the COCUS is conducted only once a year, any analyses based on COCUS information become quickly outdated. Finally, the forecast and utilization data collected through COCUS lacks sufficient specificity to enable the NANPA to determine how carriers are utilizing the numbers currently assigned to them.<sup>109</sup> Unless addressed, this lack of detail will hamper numbering resource optimization efforts, because utilization data drives many of the number optimization measures proposed in this Notice, or otherwise being considered by the industry or state

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<sup>105</sup> CO Code Guidelines at § 6.4.

<sup>106</sup> *Id.* at § 9.4.

<sup>107</sup> Our rules require the NANPA to monitor the use of NXX codes within each NPA, forecast the date by which all NXX codes within that NPA will be assigned, and plan and initiate area code relief. *See* 47 C.F.R. §§ 52.13, 52.15, and 52.19.

<sup>108</sup> *But see* PageNet comments at 19 (arguing that there is no need to collect more information).

<sup>109</sup> The 1999 COCUS requested carriers to provide aggregate NPA-wide number utilization data.

commissions. For example, the NANPA would need detailed utilization data to confirm that a carrier had met utilization rate requirements such as those proposed above.<sup>110</sup> Moreover, accurate and detailed utilization data is necessary to maximize the benefits of number pooling, both to ensure that carriers fully utilize existing blocks of numbers before they request additional blocks, and to determine which blocks of numbers are eligible for contribution to the pool.<sup>111</sup> We find that these shortcomings render the current COCUS increasingly unreliable as a tool for managing current and future numbering resources.

73. *Mandatory data submission requirement.* Consistent with the recommendation made by the NANC,<sup>112</sup> and supported by a number of the parties that commented on the NANC report,<sup>113</sup> we tentatively conclude that we should mandate that all users of numbering resources supply forecast and utilization data to the NANPA. We seek comment on this tentative conclusion. We further tentatively conclude that, as part of our obligation to develop a cogent national numbering resource policy that will ensure adequate numbering resources to all carriers, we must establish a more extensive, detailed and uniform reporting mechanism that will improve numbering utilization and forecasting on a nationwide basis. Several of the parties that commented on the NANC report support the adoption of a more detailed reporting mechanism that is operated at the federal level.<sup>114</sup> In addition, we tentatively conclude that the NANPA should serve as the single point of collection for telephone number usage and forecast data.<sup>115</sup> The data from this reporting system would, however, be available to states that want to perform

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<sup>110</sup> See *supra* ¶¶ 64-68.

<sup>111</sup> See North Carolina Commission comments at 6; see also *infra* Section V.C.

<sup>112</sup> See NANC Meeting Minutes, Nov. 18-19, 1998. NANC reached consensus on the obligation of service providers to report utilization and forecast data to the NANPA and NANC reaffirmed its commitment to maintaining confidentiality on the collection of data.

<sup>113</sup> See, e.g., AirTouch comments at 4; AT&T comments at 16-17; Bell Atlantic comments at 7; Colorado Commission comments at 14; Madison comments at 3-4; Maine Commission comments at 7-8; MCI WorldCom comments at 30-31; New Hampshire Commission comments at 8; North Carolina Commission comments at 6. *But see* BellSouth comments at 17; PageNet comments at 18-20; PCIA comments at 12-13; SBC comments at 9-10.

<sup>114</sup> See, e.g., AT&T comments at 17; Madison comments at 4; New Hampshire Commission comments at 8; Nextel comments at 17-18; SBC comments at 9-10. *But see* PageNet comments at 18-20; PCIA comments at 12-13.

<sup>115</sup> *Accord* PCIA comments at 12-13.

their own analyses to address NPA issues such as jeopardy situations and area code relief.<sup>116</sup> We seek comment on these tentative conclusions.

74. *Specific data elements.* We seek comment on the specific data items carriers should be required to track. We seek comment on whether all NXX codeholders should be required to report the status of all telephone numbers within the NXX blocks assigned to them, according to the number status definitions set forth earlier in this section.<sup>117</sup> In the alternative, we seek comment on whether utilization data reporting on a more aggregated basis (e.g., reporting on "telephone numbers unavailable for assignment" or some more aggregated set of telephone number status categories) would provide sufficient data to track accurately number utilization.

75. We propose that any utilization reporting obligation that we adopt would be in addition to the demand forecasting requirement that the COCUS currently places on carriers. We seek comment on whether any modifications should be made to improve the quality and accuracy of carriers' demand forecasts, although we believe that consistent utilization tracking, and the attendant ability to audit forecasts after the fact, may significantly improve the quality of these forecasts.

76. *Specificity of data.* We also seek comment on the level of granularity this utilization and forecast data should be reported, e.g., at the NPA level, rate center level, or thousands-block level. We tentatively conclude that, in order to provide information that is meaningful for utilization tracking and forecasting purposes, telephone number status data should be reported at the rate center level, at a minimum. Additionally, we seek comment on whether we should also require the reporting of utilization data at the thousands-block level where thousands-block pooling has been, or is going to be, implemented. If we do require data to be reported at the thousands-block level, we seek comment as to whether we should exempt carriers that currently are not subject to LNP implementation obligations from having to report at this level of granularity, or whether there are benefits to be had from obtaining thousands-block level data from LNP-capable and non-LNP-capable carriers alike in an area that may move to thousands-block pooling. To the extent that commenters argue that more granular reporting requirements would impose greater costs and burdens on carriers, we ask that they provide specific cost estimates for comparison purposes, and explain in detail the burdens that would be imposed. In addition, we seek comment on whether we should limit utilization data collection to NPAs within the largest 100 MSAs and jeopardy NPAs, and whether we should consider less granular data-reporting requirements for areas outside the largest 100 MSAs or jeopardy NPAs.

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<sup>116</sup> See, e.g., Florida Commission comments at 4-5; Maine Commission comments at 7-8; New Hampshire Commission comments at 7-8. *But see* PCIA comments at 12-13.

<sup>117</sup> *Accord* Madison comments at 3-4.

77. *Frequency of reporting.* We tentatively conclude that carriers should report utilization and forecast data on a quarterly basis, rather than the current annual reporting cycle, because the pace of number exhaust is so great in many areas that annually collected information becomes so badly outdated that analyses based on it are useless. We note that the NANC is currently examining whether to establish quarterly, semi-annual and annual COCUS reporting cycles, based on NPA growth rate and service provider size. We seek comment on whether we should differentiate between carriers in high-growth rate NPAs and low-growth rate NPAs in terms of reporting frequency, and, if so, on how to distinguish high-growth NPAs from low-growth NPAs. In the alternative, would a mechanism modeled after the current practice of conducting a "Jeopardy COCUS,"<sup>118</sup> or additional round of forecast data collection when jeopardy is first declared in an area code, be sufficient to provide additional utilization and forecast data in high-growth NPAs? We further seek comment on whether there are other appropriate distinctions that should be drawn among carriers with respect to reporting frequency.

78. *Confidentiality of data.* Several parties that commented on the NANC report express concern about the preservation of confidentiality of the utilization data they will be required to provide.<sup>119</sup> We seek comment on what, if any, special provisions should be established to protect the confidentiality of data disclosed to the NANPA, the FCC, and/or the state commissions. Under Exemption 4 of the Freedom of Information Act (FOIA), the FCC need not disclose "commercial or financial information . . . [that is] privileged or confidential."<sup>120</sup> Based on the proposals set forth above in this section, we seek comment on what specific information that we may request from carriers would fall within this exemption. Some commenters have voiced particular concern about the ability of state commissions to protect the confidentiality of their submissions.<sup>121</sup> Regarding proposals to enhance the COCUS, the NANC has recommended that states have access to aggregate utilization data and solely for a stated purpose.<sup>122</sup> Also, the NANC determined that states may obtain carrier-specific data only in states where a legally

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<sup>118</sup> CO Code Guidelines at § 9.4.

<sup>119</sup> See, e.g., AirTouch comments at 21; AT&T comments at 17; PCIA comments at 12-13.

<sup>120</sup> 5 U.S.C. § 552(b)(4). Under FOIA, the Commission is required to disclose agency records on request, unless they contain information that fits within one or more of the exemptions from the Act. Even when particular information falls within the scope of a FOIA exemption, agencies are generally afforded the discretion to disclose the information on public interest grounds. *Chrysler Corp. v. Brown*, 441 U.S. 281, 292-94 (1979).

<sup>121</sup> See, e.g., AirTouch comments at 21; PCIA comments at 12-13.

<sup>122</sup> See NANC Meeting Minutes, Nov. 18-19, 1998.

enforceable confidentiality agreement is in place.<sup>123</sup> We seek comment on the NANC's recommendations concerning use of confidential data by the state commissions.

79. *Cost of data collection activity.* To ensure that the data collection requirements are not overly burdensome, we seek comment on the cost of the proposed data collection activities to service providers. Specifically, we seek comment on the estimated fixed and incremental costs of that collection. We also seek comment on whether the fixed costs can be shared. In addition, we seek comment as to whether there are any economic, legal, or business reasons for excluding small carriers from reporting requirements, or otherwise scaling back their reporting obligations. Alternatively, we seek comment whether such an exclusion for small carriers would be necessary if the proposed additional utilization data were only collected from NPAs in the largest 100 MSAs and in jeopardy NPAs.

80. *Alternative data collection options.* Finally, we seek comment on several alternative data collection options the industry has proposed. The forecast and utilization reporting process in the current Thousand Block Pooling Guidelines is one such option.<sup>124</sup> These guidelines require carriers operating in an NPA where pooling has been or is planned to be implemented to submit forecasts and utilization reports semiannually by thousands-block within a rate area.<sup>125</sup> The pooling forecast is based on an 18-month projection. If a carrier identifies a significant change in its forecast, it is required to provide an updated forecast. We seek comment on whether the data collection provisions in these pooling guidelines should be applied more generally, i.e., outside of pooling areas, and to all carriers, rather than just carriers participating in pooling.

81. Another, similar proposal is the Line Number Utilization Survey (LINUS) data collection model designed by NANPA staff as a replacement for COCUS and presented for consideration to the NANC.<sup>126</sup> LINUS would conduct a survey of forecast data quarterly at the rate center level. Utilization data would be collected at the thousands-block level by rate center, quarterly in the largest 100 MSAs, and semiannually in the remaining MSAs. Also, collection of utilization data collection would occur more often in NPAs that are nearing jeopardy. Participation in LINUS would be mandatory. We seek comment on whether LINUS would meet

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<sup>123</sup> *Id.* As a sanction, NANC proposes that a state's violation of the confidentiality requirement would be the loss of the prerogative to obtain such data in the future.

<sup>124</sup> Thousand Block Pooling Guidelines at § 6.0.

<sup>125</sup> *Id.* However, carriers that are exempt from LNP, operate in a non-pooling area, or utilize a switch technically incapable of pooling are exempt from these data collection requirements.

<sup>126</sup> See NANC Meeting Minutes, May 27, 1998.

our data collection requirements, or whether modifications to LINUS are required in order to make it more responsive to our forecasting and tracking needs.

82. In addition, other industry parties have submitted proposals to NANC for a number utilization and forecasting mechanism to replace COCUS.<sup>127</sup> AT&T's proposed model would, like COCUS, collect forecasting and utilization information annually, at the NPA level, but with the capacity for "real time" updates at other times.<sup>128</sup> In addition, the forecast report in the AT&T model would be separated into components for forecasts of growth codes, initial codes for new entrants, and initial codes for new switching entities. US West also proposed a COCUS alternative that involves a two-stage process.<sup>129</sup> The first stage, referred to as the "Top-down Analysis," relies on historical COCUS data and mathematical modeling to develop initial exhaust forecasts for each area code. After it has been determined that a particular NPA will exhaust within a selected period, the second stage of this proposal would be applied. The second stage involves a "Bottoms-up Analysis," which relies on user input similar to the existing COCUS system, but employs a mechanized data collection process. Although these proposals are presently under review by NANC, we seek comment regarding whether we should adopt any of their specific components.

#### **E. Audits**

83. The only comprehensive method for verifying the validity and accuracy of utilization data submitted by users of numbering resources is through the use of audits. Audits can also be used to verify compliance with non-quantitative rules or guidelines, for example, to determine whether a carrier actually has subscribers for "assigned" numbers, or valid reservation requests. Audit requirements may also, independently, serve as a deterrent to carrier noncompliance or strategic behavior, such as hoarding of numbers. Because we believe that audits can serve as a valuable tool in our efforts to promote numbering resource optimization, we propose that the need verification measures proposed and the data collection program proposed earlier in this section be supplemented with a comprehensive audit program that verifies carrier compliance with federal rules and industry numbering guidelines. We seek comment on this proposal.

84. *Types of audits.* Three types of audits are commonly used: "for cause" audits,

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<sup>127</sup> See NANC Meeting Minutes, Feb. 17-18, 1999, at 7.

<sup>128</sup> "A Minimalist Code Utilization and Forecasting Model," submitted by AT&T to the Numbering Resource Optimization (NRO) Working Group. See NANC Meeting Minutes, Feb. 17-18, 1999, at 7.

<sup>129</sup> "COCUS Replacement Model," submitted by U S West to NRO Working Group. See NANC Meeting Minutes, Feb. 17-18, 1999.

regularly scheduled audits, and random audits. As further detailed below, we seek comment on whether and, if so, how, all three types of audits should be employed as part of a comprehensive audit program to monitor carrier compliance with number allocation and administration rules and guidelines. We further seek comment on the comparative costs and benefits associated with performing each type of audit.

85. "For cause" audits are conducted if there is reason to believe that the information a carrier has provided, e.g., in connection with either reporting requirements or an application for additional resources, is inaccurate or misleading. Information providing a basis for initiating a for cause audit may be drawn from a variety of sources.<sup>130</sup> Because for cause audits are triggered only when there is some cause to believe that a carrier may be in noncompliance, they are a highly cost-effective and necessary tool for monitoring number utilization and forecasting.<sup>131</sup> For this reason, we tentatively conclude that we should include for cause audits within the comprehensive audit program proposed. We further seek comment on whether we should consider subsequent follow-up audits on carriers that in previous years had been subject to for cause audits for supplying inaccurate or misleading data or forecasts.

86. Regularly scheduled audits are repeated on a fixed schedule for a representative cross-section of carriers, and, in this context, would be applied to all entities that obtain numbering resources. Perhaps more so than other types of audits, regularly scheduled audits may encourage carriers to adopt better number utilization practices, because sooner or later, all carriers would be subject to a regularly scheduled audit.<sup>132</sup> Given the large number of carriers that hold numbering resources, we tentatively conclude that regularly scheduled annual audits of all numbering resource holders would be too costly to be justified. Instead, we seek comment on whether conducting regularly scheduled audits every three years represents a reasonable compromise between effective auditing and cost containment.<sup>133</sup>

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<sup>130</sup> For example, an auditor may evaluate information submitted by a carrier by applying statistical techniques to industry or carrier data, or by using independently developed information or historical trend data. Statistical techniques are used frequently to identify "outliers," e.g., carriers whose data fails to conform to a range of actual values for other reporting carriers or to project "expected values" for certain reported data. With respect to numbering resources, statistical analyses could be used to identify inaccurate reporting or unusually high forecasts of numbering requirements.

<sup>131</sup> See, e.g., GTE comments at 19-20 (indicating that audits should be conducted in response to an unusual request for numbers or a significant variance from an existing forecast).

<sup>132</sup> See, e.g., Florida Commission comments at 4-5.

<sup>133</sup> See New York Commission comments at 22 (recommending that regularly scheduled audits should be conducted every three to five years).

87. Random audits provide a third means by which carrier utilization and forecast information can be reviewed for accuracy. Through such audits, the auditor reviews a specific carrier's information without triggering the expense and burden of regularly scheduled audit of all carriers. In addition, to better target problem areas, random audits could focus on those carriers that historically have had a high demand for numbers or new carriers that appear to be seeking a large quantity of numbers. For this reason, random audits may be used more frequently and flexibly than regularly scheduled audits. At the same time, allegations of unusual or inappropriate conduct are not necessary to trigger a random audit. We seek comment on whether we should adopt a random audit approach for use in situations where accurate reporting is paramount, such as in area codes where jeopardy has been declared, or whether there are other situations in which random audits would be appropriate.

88. *Audit responsibility.* We believe that numbering resource audits should be conducted by a neutral entity. One possibility is that the NANPA could conduct these audits.<sup>134</sup> Because the industry guidelines envision that the NANPA itself, in its capacity as Central Office code administrator, will be subject to periodic audits for compliance with numbering administration guidelines and effective management of numbering resources,<sup>135</sup> however, the NANPA may not be the best choice to audit code holders on similar issues.<sup>136</sup> It is also possible that the FCC, state public utility commissions, or other neutral third parties could conduct numbering resource audits.<sup>137</sup> We seek comment on how audit responsibility should be apportioned among these possible candidates. We further seek comment on whether we should direct the NANC to select an entity to audit carrier number utilization and forecast data using a competitive bidding process that is subject to our approval.

89. *Audited information/procedures.* We believe that the audit program should address all aspects of carrier compliance with our numbering resource rules and industry numbering guidelines, focusing in particular on utilization data reporting and forecasting. It will be easier to develop certain auditing procedures, including specific triggers related to for cause and random audits, after data reporting requirements have been finalized. We seek comment on the process by which specific auditing procedures should be established, as well as on the

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<sup>134</sup> *Accord* BellSouth comments at 20; Colorado Commission comments at 15. *But see* PageNet comments at 18-20.

<sup>135</sup> *See* CO Code Guidelines, Appendix A (regarding audits to be performed in conjunction with the NXX code assignment process).

<sup>136</sup> *See* GTE comments at 19-20 (supporting selection of an independent third party, unrelated either to the carrier or the NANPA, to conduct audits).

<sup>137</sup> MCI WorldCom comments at 33 n.65 (Commission should consider delegating enforcement of data collection and auditing responsibilities to state commissions).

development of statistical and analytical approaches that will be required to evaluate the quality and validity of reported data. We ask parties to comment, in particular, on how we may structure an audit process that is flexible enough to focus on new problems or issues as they arise.

90. We note that the NANC and the INC have been working to develop a comprehensive audit process,<sup>138</sup> and we direct the NANC to provide a progress report regarding this work effort to the Common Carrier Bureau on or before the deadline for initial comments in this proceeding. We also seek comment on the best method for soliciting the input of state public utility commissions, who have valuable insight into and experience with potential problem areas. While we believe that we should develop a national framework and procedures for numbering resource audits, so that there is some degree of uniformity across the country in the way that audits are conducted, we also recognize that state commissions should have a major role in the development of this framework and procedures.

## **F. Enforcement**

91. Many of the parties that commented on the NANC Report acknowledge a need both to strengthen the numbering allocation and assignment guidelines and to find an appropriate enforcement mechanism to ensure compliance on the part of all users of the numbering resource.<sup>139</sup> We seek comment on what actions we should take to enhance the enforceability of the number utilization and optimization provisions contained in the guidelines.

92. We tentatively conclude that the NANPA, the FCC and the state commissions each have distinct roles to play in enforcing the provisions of the CO Code Guidelines, and other numbering utilization rules, and we seek comment on specifying more precisely what those roles are. We note that, while the FCC retains the authority to take any necessary enforcement action, in many instances, the NANPA would be the first entity to detect a carrier's violation of a rule or guideline, such as failing an audit. Because the NANPA might often be in the best position to take swift and effective enforcement action, commenters to the NANC Report suggest that the

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<sup>138</sup> See *supra* note 40 and accompanying text. See also Letter from Alan C. Hasselwander, Chairman, NANC, to Jo Gallagher, INC, dated July 30, 1997. This document can be found at <<http://www.fcc.gov/ccb/NANC/NANCCorr.html>>

<sup>139</sup> See AirTouch comments at 4, 23; Bell Atlantic comments at 7-8 (stating that the improper use of Nexus should be a sanctionable offense); CVSI comments at 4-5 (recommending that the provisions in the CO Code Guidelines that discourage hoarding and warehousing of NXX codes should apply to all NANP resources, particularly telephone numbers, and should be enacted into law by the Congress and codified in the Commission's rules); Colorado Commission comments at 15-16; Maine Commission comments at 4-5 (stating that code holders who do not comply with the CO Code Guidelines should be penalized); MCI WorldCom comments at 33. *But see* GTE comments at 18; PageNet comments at 18-20; SBC comments at 19-20.

NANPA should be delegated additional enforcement authority.<sup>140</sup> We tentatively conclude that the NANPA should be empowered to withhold NXX codes as a sanction for violation of the CO Code Guidelines, especially where the violation involves failure or refusal to supply accurate and complete utilization or forecast data.<sup>141</sup> We seek comment on this tentative conclusion and the circumstances in which the NANPA should be empowered to withhold numbering resources. For example, should NANPA be authorized to restrict future requests for numbering resources, as a sanction for prior violations, where the carrier has no pending request for resources when the violation is detected,<sup>142</sup> or would this type of situation be better addressed using alternative sanctions?<sup>143</sup> We also seek comment on whether any additional enforcement authority should be delegated to the NANPA.

93. There are several situations in which enforcement actions are more appropriately taken by regulatory authorities than by the numbering administrator. For example, in some situations, the decision to take enforcement action involves a more subjective evaluation, or would otherwise call the NANPA's neutrality into question. In addition, regulatory authorities should provide a route of appeal from NANPA enforcement actions. We seek comment regarding the appropriate allocation of number administration enforcement responsibilities between the FCC and state regulators. Currently, most state commissions are not performing number administration functions.<sup>144</sup> We seek comment regarding whether delegating additional enforcement authority to state commissions would place the states in the position of performing numbering administration tasks, and if so, whether this should be any cause for concern.

94. In other situations, such as where a violating carrier has no need for additional numbering resources, withholding these resources would have no effect as a sanction. We

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<sup>140</sup> AT&T states, however, that final authority to impose sanctions should lie with the FCC. AT&T comments at 17-18.

<sup>141</sup> Many commenters support the adoption of this measure. *See, e.g.*, Bell Atlantic comments at 7; Colorado Commission comments at 14-15; MCI WorldCom comments at 30-31; New York Commission comments at 23; Ohio Commission comments at 6; SBC comments at 10.

<sup>142</sup> *Cf.* New York Commission comments at 24.

<sup>143</sup> *See* Colorado Commission comments at 15 (when a carrier needs no additional numbering resources, FCC-imposed fines, or state enforcement actions, are the appropriate sanction).

<sup>144</sup> Out of all the 50 states, only Ohio has opted to perform the NXX administration function when NANP administration was transitioned from Bellcore to Lockheed Martin. *See* Letter from Ohio Commission to NANPA, Feb. 5, 1998, responding to Letter from Joseph F. Franlin, NANPA, dated Nov. 7, 1997, requesting state commissions to notify that they intend to perform the function of initiation and development of area code relief plans.

tentatively conclude that fines and forfeitures, and possibly, in extreme situations, revocation of certification and licenses should be available as possible sanctions for violation of the CO Code Guidelines, all of which could only be imposed by regulatory authorities.<sup>145</sup> We seek comment on this tentative conclusion. In particular, if state revocation of a wireline carrier's certification or the Commission's revocation of a wireless carrier's license is an appropriate sanction for CO Code Guidelines violations, what standard should be used to trigger this specific sanction option?

### **G. Reclamation of NXX Blocks**

95. Reclamation and reuse of unused NXX blocks is a numbering optimization measure that may be one of the quickest and easiest measure to implement. As outlined below, the CO Code Guidelines contain provisions for NXX block reclamation. The NANC Report notes, however, that there has been "some hesitancy" on the part of the NANPA to enforce these reclamation provisions, and recommends a current review and modification of the NXX code reclamation procedure to address the current competitive status of the industry.<sup>146</sup> In such light, we seek comment on several proposals to clarify and strengthen these reclamation provisions.

96. *NXX Activation Rules.* The CO Code Guidelines require an NXX assignee to activate the NXX code by placing it "in service" within six months of assignment.<sup>147</sup> Currently, an NXX code is considered to be "in service" when the assignee has transmitted local routing information to the LERG.<sup>148</sup> The carrier, however, does not have to assign and activate any number from the block to end-user customers in order to satisfy the activation requirement.<sup>149</sup>

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<sup>145</sup> See Madison comments at 4; Colorado comments at 15; MCI WorldCom comments at 30-31; New York Commission comments at 23.

<sup>146</sup> NANC Report at § 11.b.

<sup>147</sup> See CO Code Guidelines at § 6.3.3. Requests for NXX code assignments cannot be made more than six months prior to the requested effective date. Also, because it takes 66 days to process a request for an NXX code, the guidelines state that applicants should request effective dates that are at least 66 days after the date of the receipt of the code request. CO Code Guidelines at § 6.1.2.

<sup>148</sup> See CO Code Guidelines at § 13.0.

<sup>149</sup> CO Code Guidelines at § 6.1.2.

Furthermore, an assignee may apply to the NANPA for an extension of up to an additional 90 days to place the NXX code in service.<sup>150</sup> The CO Code Guidelines also allow an assignee to reserve an NXX code for up to eighteen months.<sup>151</sup> In addition, an assignee of a reserved NXX code is eligible to receive a single six-month extension of the reservation if it is able to demonstrate that the proposed code use date was missed due to circumstances beyond its control.<sup>152</sup>

97. *NXX Reclamation Rules.* The CO Code Guidelines require the assignee to return the NXX code to the NANPA if it has not been activated within six months of assignment, if the assignee no longer requires that NXX code for the purpose it was originally assigned, or if the service for which it was assigned is disconnected.<sup>153</sup> Moreover, the CO Code Guidelines direct the NANPA to initiate reclamation action if the NXX code has not been activated within 18 months.<sup>154</sup> The CO Code Guidelines direct the NANPA to refer to the INC for resolution certain instances where NXX codes have not been returned for reassignment by the assignee,<sup>155</sup> as well as certain applications for extension of the NXX code activation date.<sup>156</sup>

98. *Modification of current CO Code Guidelines.* In their comments on the NANC Report, several parties support the enforcement of the current reclamation rules by the

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<sup>150</sup> CO Code Guidelines at §§ 8.1 and 8.2.3. Such an extension request must include the reason for the delay and a new activation time commitment. *Id.* at § 8.1. The NANPA may extend the activation deadline if it determines that the reason for non-activation is not within the control of the code assignee. CO Code Guidelines at § 8.2.3.

<sup>151</sup> CO Code Guidelines at § 4.4. The applicant must demonstrate that the reservation of the code is essential to accommodate technical or planning constraints or pending regulatory approval of a tariff, certification, or registration. *Id.*

<sup>152</sup> CO Code Guidelines at § 4.4.

<sup>153</sup> CO Code Guidelines at §§ 8.1 and 6.3.3.

<sup>154</sup> CO Code Guidelines at § 5.2.9. This translates to a one-year gap between the expiration of an NXX assignee's code activation deadline and the commencement of reclamation action by the NANPA.

<sup>155</sup> Specifically, the NANPA is to refer to the INC instances where an NXX code has not been activated within the six-month timeframe, where a previously activated code is not now in use, and where an activated code is not being used in accordance with the guidelines. CO Code Guidelines, § 8.2.2.

<sup>156</sup> Specifically, the NANPA is to refer to the INC instances where: 1) activation has not occurred within the 90-day extension; 2) the administrator believes that the activation has not occurred due to a reason within the assignee's control; or 3) the assignee requests an extension in excess of 90 days. CO Code Guidelines, § 8.2.2. When the INC is unable to reach a consensus resolution or the assignee refuses to comply with the resolution, the CO Code Guidelines direct the INC to refer the case to the appropriate regulatory authority. *Id.* at § 8.3.

NANPA,<sup>157</sup> while others propose modifications to the guidelines.<sup>158</sup> We tentatively conclude that the current activation and reclamation requirements and timeframes in the CO Code Guidelines should be modified in several ways to encourage more efficient use of NXX codes. First, we seek comment on whether the definition of placing an NXX code "in service" should be clarified to mean not just activation of the code through the transmission of local routing information to the LERG, but also that the carrier has begun to activate and assign to end users numbers within the NXX code.<sup>159</sup> We tentatively conclude that this clarification will better ensure that NXX codes are not left idle for a lengthy period. We note that adopting such a definition, by itself, could lead to undesirable behavior on the part of carriers, as they might simply activate a few numbers in an otherwise unused NXX block in order to avoid reclamation of the block. Therefore, we seek comment regarding whether such a change in the definition of "in service" should be adopted only in connection with a sequential numbering requirement,<sup>160</sup> or whether we should adopt other safeguards to prevent this type of strategic behavior.

99. We also seek comment on modifying the current reclamation provisions by requiring the NANPA to initiate NXX code reclamation within 60 days of expiration of the assignee's applicable activation deadline. We tentatively conclude that this modification will limit the length of time that an NXX code has been left idle and encourage better recycling of unused NXX codes. We further seek comment on whether there exist competitive pressures or other reasons that should discourage us from reducing the amount of time during which a carrier may reserve an NXX code from 18 months to three months, and, correspondingly, to reduce the period of potential extension of that reservation from six months to 30 days. We seek comment on whether we should consider any other modifications to the reclamation provisions to improve their enforceability, such as SBC's suggestion that we should maintain firm deadlines for activation by removing the discretion the NANPA presently has to determine the length of an extension.<sup>161</sup> Finally, we seek comment on whether we should direct the INC to incorporate these

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<sup>157</sup> New Hampshire Commission comments at 6; New York Commission comments at 17; Texas Commission comments at 29 (stating that sound numbering policy dictates that no service provider be permitted to hold NXX codes unless they are being used by customers); Sprint comments at 34; SBC comments at 22. *See* PageNet comments at 17 (urging the Commission to require that all clean NXX codes be available for future use by all carriers, regardless of whether they participate in pooling).

<sup>158</sup> BellSouth comments at 18; New Hampshire Commission comments at 6; New York Commission comments at 1, 17.

<sup>159</sup> SBC comments at 22-23. SBC also states that the responsibility for modifying the reclamation rules in the manner it suggests should lie with INC. *Id.*

<sup>160</sup> *See infra* ¶¶ 190-191.

<sup>161</sup> SBC comments at 22.

proposed changes into the CO Code Guidelines, or whether we should adopt these proposals as FCC rules.

100. *Delegating additional authority to the NANPA and the states.* We seek comment on what, if any additional authority we should delegate to the NANPA to enforce the NXX block reclamation provisions.<sup>162</sup> We tentatively conclude that we should delegate additional authority to state public utility commissions to order NXX block reclamation in accordance with the CO Code Guidelines, and any changes thereto adopted during the course of this proceeding.<sup>163</sup> We believe that this grant of authority may increase the effectiveness of numbering conservation measures adopted by the states.<sup>164</sup> We seek comment regarding whether we should direct the NANPA to refer questions or disputes about code activation, deadline extensions or reclamation directly to the state commissions for resolution, rather than to the INC. State commissions may be able to resolve such issues more quickly and decisively than an industry consensus process.<sup>165</sup> We also seek comment regarding whether we should require state commissions to establish any particular type of dispute resolution or appeals processes in connection with issues regarding activation and reclamation of NXX codes.

## H. Cost Elements and Cost Recovery

101. In the Executive Summary accompanying the NANC Report, the NANC stated that "[c]ost/benefit analysis and determination of cost recovery mechanisms loom as high priorities before going forward with implementation of any of the future optimization methods presented in this, or future [NANC] reports."<sup>166</sup> The NANC Report does not, however, address the costs of various optimization measures nor does it recommend a mechanism for recovery of costs associated with those optimization methods.

102. We seek comment on the specific cost elements of the proposed administrative

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<sup>162</sup> See Texas Commission comments at 29 (recommending that, as an alternative to giving state commissions more authority to order NXX code reclamation, the NANPA be delegated additional authority to order and enforce reclamation of NXX codes when pooling and rate center consolidation measures are being implemented in an NPA).

<sup>163</sup> See New York Commission comments at 18; Texas Commission comments at 28-29.

<sup>164</sup> See Texas Commission comments at 28-29 (recommending that states be given authority to order return of NXX codes in connection with implementing rate center consolidation and number pooling trials).

<sup>165</sup> See New York Commission comments at 18 (stating that, because INC's decisions are made by industry consensus, expedited action is difficult to achieve).

<sup>166</sup> NANC Report, Executive Summary at vii.

measures, including a detailed breakdown of the types of costs involved in implementation of each particular administrative solution (for example, increasing staff to monitor number usage, software to complete administrative tasks, etc.), as well as the overall magnitude of the costs of the various administrative solutions. We also seek comment on whether the benefits of moving to a more efficient use of our numbering resources achieved through implementation of the proposed administrative measures outweigh the costs of implementation of those administrative measures. We ask that commenters support their conclusion with specific cost data, where available, or other evidence relevant to a cost/benefit analysis.

103. With respect to cost recovery, we tentatively conclude that the costs of the administrative solutions proposed above should be allocated and recovered through the existing NANPA fund formula.<sup>167</sup> Our conclusion is based on the assessment that the proposed administrative solutions appear, in large part, to involve changes in the manner in which the NANPA oversees and manages numbering resources. For example, a requirement that the NANPA verify an applicant's need for additional numbers may require the NANPA to evaluate the applicant's months-to-exhaust projection or to evaluate carrier data proving that a particular utilization level has been met. Similarly, the costs of collecting utilization data, conducting service provider audits, initiating reclamation of NXXs and other administrative costs may, in many cases, be directed to the NANPA. Furthermore, the implementation of administrative solutions will benefit all telecommunications carriers by resulting in a more efficient use of numbering resources and by delaying the need for new area codes, as well as the exhaust of the NANP. We seek comment on this tentative conclusion.

104. In addition, because the administrative solutions we propose as possible ways of increasing the efficiency with which telecommunications carriers use numbering resources fall within the scope of numbering administration matters,<sup>168</sup> we tentatively conclude that section 251(e)(2) requires that the costs of the administrative solutions be borne by all telecommunications carriers on a competitively neutral basis.<sup>169</sup> We tentatively conclude that including the costs of the administrative solutions in the NANPA fund will result in the allocation and recovery of those costs from all telecommunications carriers on a competitively neutral basis

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<sup>167</sup> All telecommunications carriers in the United States contribute to meet the costs of numbering administration. 47 C.F.R. § 52.17. Under the NANPA fund formula, each telecommunications carrier's contribution is based on the gross revenues from its provision of telecommunications services reduced by all payments for telecommunications services and facilities that have been paid to other telecommunications carriers. 47 C.F.R. § 52.17(b). The NANPA billing and collection agent, NECA, calculates, assesses, bills, and collects payments for numbering administration from telecommunications carriers on an annual basis. 47 C.F.R. § 52.16.

<sup>168</sup> *See supra* Section III.A.

<sup>169</sup> 47 U.S.C. § 251(e)(2).

and should not overburden any one carrier or class of carriers. We seek comment on these tentative conclusions. Commenters should address the Commission's interpretation that "on a competitively neutral basis" means that the costs borne by each carrier do not affect significantly any carrier's ability to compete with other carriers for customers in the marketplace<sup>170</sup> and whether the proposed cost recovery mechanism is consistent with this interpretation. Parties that oppose our tentative conclusions should propose specific alternative methods for allocating and recovering the costs of administrative solutions to the numbering crisis on a competitively neutral basis. In addition, parties that argue that the Commission has authority to exclude a class or classes of carriers from the costs of the proposed administrative solutions should provide a detailed discussion of their position, including applicable statutory and regulatory authority. Commenters also should identify which class or classes of carriers should be excluded and why.

## V. OTHER NUMBERING OPTIMIZATION SOLUTIONS

### A. Introduction

105. In Section IV, we considered a variety of administrative measures aimed at ensuring that carriers obtain and use numbering resources efficiently. In this section, we consider and seek comment on additional numbering optimization methods that could be implemented in addition to, or in combination with, these administrative measures.

106. First, we consider rate center consolidation. Rate center consolidation involves creating larger geographic areas in which individual NXX codes can be used by consolidating or combining existing rate centers. Because many carriers, particularly competitive local exchange carriers, require NXX codes in most or all rate centers in an NPA to establish a competitive "footprint," establishing larger rate centers has significant potential to reduce the demand for NXX codes. Traditionally, rate center consolidation has been carried out at the state level. We seek comment on ways in which we may create incentives for state commissions and local exchange carriers to pursue this measure more aggressively.

107. Another potential numbering resource optimization method is mandatory ten-digit dialing for all telephone calls, whether they are local or toll calls. To date, we have implemented mandatory ten-digit dialing only in area code overlay situations. Expanding the use of ten-digit dialing could yield certain numbering optimization benefits, by making overlays less disruptive to implement, freeing up protected NXX codes and allowing use of "0" or "1" in the so-called "D"

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<sup>170</sup> Telephone Number Portability, *First Report and Order and Further Notice of Proposed Rulemaking*, CC Docket No. 95-116, 11 FCC Rcd 8352, 8419 (1996) (*Telephone Number Portability First Report and Order*).

digit (the first number of the NXX code). At the same time, mandatory ten-digit dialing imposes certain burdens on consumers, who would no longer be able to rely on traditional seven-digit dialing for local calls.

108. We also consider number pooling as a numbering optimization method. Number pooling allows numbers to be allocated in smaller increments, so that multiple carriers can use numbering resources from a single NXX code. We seek comment on whether mandating some form of number pooling is necessary to achieve our numbering optimization objectives, and if so, how and to what extent pooling should be implemented. We also seek comment on the potential costs and benefits of three specific number pooling methods: (1) allocation of numbers in blocks of a thousand (thousands-block pooling), (2) individual telephone number pooling (ITN), and (3) unassigned number porting (UNP). Because one common element of all three pooling alternatives is that they require participating carriers to have LNP capability, we seek comment on whether non-LNP-capable carriers should be subject to pooling requirements or whether there are other non-LNP-based alternatives to pooling that could be employed by such carriers to achieve comparable results.

109. Regardless of whether or to what degree number pooling may be implemented on a mandatory basis, there are a variety of technical and administrative issues associated with pooling. We therefore address the issue of technical standards for pooling, appointment of an administrator, and possible rules or guidelines for both donation of numbers to and withdrawal of numbers from a number pool. We also consider possible mechanisms that would allow for recovery of shared costs and carrier-specific costs associated with implementing and administering number pooling.

110. Finally, as an alternative to mandating that carriers employ any particular numbering resource optimization method, we consider whether we can achieve our number utilization objectives without the need for such mandates by allowing carriers to choose the optimization solutions that best suit their particular circumstances. We seek comment on a regime that would require carriers to meet a number utilization threshold, as proposed in Section IV, but leave to each carrier the decision about how to achieve the requisite level of utilization, e.g., through participation in thousands-block number pooling, rate center consolidation, porting unassigned numbers from other carriers, or simply returning excess codes.

## B. Non-LNP-Based Solutions

### 1. Rate Center Consolidation

111. Rate centers are telephone company-designated geographic locations which are assigned vertical and horizontal coordinates within an area code.<sup>171</sup> Historically, telephone numbers are assigned on an NXX code basis, and associated with a particular switch. For call rating purposes, each switch is associated with a particular rate center. For most carrier billing systems, the rate centers associated with the switches serving the calling and called parties are used to determine whether a call is local or toll and to compute the air mile distance for rating the toll call.<sup>172</sup> Thus, most carrier billing systems rely on NPA-NXX code information for rating calls.

112. Because it is typically necessary for each facilities-based service provider to be assigned an NXX code for each rate center in which it provides service, the rate center structure places a great strain on numbering resources.<sup>173</sup> Moreover, although wireless carriers offer larger calling areas and thus require fewer NXX codes for the wireless service, they often must request as many NXX codes as are required to permit wireless customers to be called by wireline customers on a local basis.<sup>174</sup>

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<sup>171</sup> NEWTON'S TELECOM DICTIONARY, 14th Edition, at 591. *See also* Local Exchange Routing Guide (LERG), Volume 2, Section 1 at 24 (March 1997). Incumbent local exchange carriers (ILECs) chose to establish the rate center structure as part of their network design for billing and pricing functions and no regulatory mandate requires its existence.

<sup>172</sup> Colorado Commission comments at 5; NANC Report at § 1.1.

<sup>173</sup> Numbering assignment guidelines for companies choosing to perform call rating consistent with the traditional ILEC rate center configuration require the assignment of one NXX code per rate center. NANC Report at § 1.1. Thus, the combination of rate centers and 10,000 block number assignments causes area code exhaust even though thousands of individual telephone numbers remain unassigned to end users. Nextel comments at 9.

<sup>174</sup> NANC Report at § 1.5.2; Nextel comments at 10. Wireless carriers, however, often require fewer NXX codes than wireline carriers because they have larger local service areas. Bell Atlantic Mobile comments at 12. We note that, to enable the rating of incoming wireline calls as local, wireless carriers typically associate NXXs with wireline rate centers that cover either the business or residence of end-users. Also, wireless carriers may sometimes further minimize the number of wireline rate centers with which they need to associate their numbers by entering into reverse billing arrangements with local exchange carriers. Reverse billing arrangements enable toll charges associated with land to mobile calls to be paid by the CMRS carriers, instead of the initiating wireline caller.

113. Rate center consolidation is the combining or aggregating of several existing rate centers into fewer rate centers.<sup>175</sup> Rate center consolidation serves as a numbering optimization measure by enabling carriers to use fewer NXX codes to provide service throughout a region, thereby reducing the demand for NXX codes, improving number utilization, and prolonging the life of an area code.<sup>176</sup> In areas where there are contiguous rate centers with identical calling areas and identical exchange rates, rate center consolidation may be fairly easy and painless to implement.<sup>177</sup> Rate center consolidation will be most beneficial in areas where new entrants have NXX assignments, but service has not yet been activated.

114. Rate center consolidation may be an attractive numbering optimization measure because it enables carriers to maintain their existing call-routing and call-rating methods, is competitively neutral, does not require LRN LNP, and does not preclude the adoption of other numbering optimization methods.<sup>178</sup> Further, rate center consolidation may be flexibly implemented, on a state, NPA or multiple rate center basis, and sometimes may be implemented within a short timeframe.<sup>179</sup> Rate center consolidation may, however, have disruptive impacts on carriers and customers.<sup>180</sup> For example, where local calling scopes must be modified in connection with rate center consolidation, carrier revenue may decrease, because a larger

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<sup>175</sup> NANC Report at § 1.1.

<sup>176</sup> NANC Report at § 1.5.2. *See also* AirTouch comments at 16; MediaOne comments at 4-5; NASUCA comments at 4; PageNet comments at 10-11; Teligent comments at 3; Vanguard comments at 5 (stating that rate center consolidation can reduce CLEC consumption of NXX codes by 75% or more). Rate center consolidation, however, does not supply any additional NXX codes nor does it allow for code sharing between service providers. NANC Report at § 1.10.

<sup>177</sup> NANC Report at §§ 1.5.1 and 1.10.2; ALTS comments at 7; GTE comments at 8-9; PrimeCo comments at 3-4; Sprint comments at summary iv.

<sup>178</sup> NANC Report at §§ 1.1 and 1.10; NASUCA comments at 4; RCN comments at 2; Vanguard comments at 2.

<sup>179</sup> NANC Report at § 1.3. *See also* ALTS comments at 7; MediaOne comments at 5; U S West comments at 27. Because rate centers are regulated by states, rate center consolidation requires state regulatory approval. NANC Report at § 1.10.1.

<sup>180</sup> SBC comments at 29.

percentage of revenue may be derived from basic local service and a smaller percentage from toll service.<sup>181</sup> Correspondingly, customers' local service rates may increase and they may experience other types of confusion or inconveniences when their calling areas change.<sup>182</sup> Also, a complex consolidation scheme may involve expensive modifications to carriers' switches and operations support systems (OSS).<sup>183</sup> Furthermore, rate center consolidation can cause a disruption in the routing of E911 calls because default routing of 911 calls is NXX driven.<sup>184</sup>

115. The experiences of the state utility commissions that have implemented rate center consolidation or have studied its potential impact demonstrate that this measure brings varying levels of number conservation benefits and disruptive impact, depending on the effect on calling scopes and the complexity of the rate center geography.<sup>185</sup> While some states are enthusiastic

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<sup>181</sup> NANC Report at § 1.1; AT&T comments at 5-6; California Commission comments at 4-5; Madison comments at 2; Pennsylvania Commission comments at 14. When expansion of a local calling area occurs, a larger percentage of the revenue may be derived from basic service and a lesser percentage from toll service. NANC Report at § 1.4.2.

<sup>182</sup> NANC Report at § 1.8.1; Florida Commission comments at 2-3. *See also* ALTS comments at 8 (recognizing that some customer confusion may result from a rate center consolidation, but arguing that such confusion would be less than the customer confusion caused by the implementation of a new area code).

<sup>183</sup> NANC Report at § 1.6.1; New York Commission comments at 9. Rate center consolidation in New Jersey would cost service providers as much as \$20 million. NANC Report at § 1.4.1.

Operations Support Systems (OSS) are systems that directly support the daily operation of the telecommunications infrastructure. The average LEC has hundreds of OSS, including automated systems supporting order negotiation, order processing, line assignment, line testing, and billing. *See* NEWTON'S TELECOM DICTIONARY, 14th Edition, at 521.

<sup>184</sup> NANC Report at § 1.9.1; NENA comments at 2-3; Texas Commission comments at 13; SBC comments at 29.

<sup>185</sup> The NANC Report found that 17 states favor the implementation of rate center consolidation and seven states have implemented or plan to implement this measure. NANC Report at §§ 15.2 and 15.4. In Texas, SBC consolidated 108 rate centers to 31 within four months of regulatory approval by the Texas Commission in rate centers with common calling scopes in Houston, Dallas, Fort Worth, Austin, and San Antonio. Because calling scopes were not affected, there was no increase in rates or customer confusion. NANC Report at §§ 1.1 and 1.3; *see also* Number Conservation Measures in Texas, Order No. 1, Texas Commission Project No. 18438 dated (January 20, 1998); Number Conservation Measures in Texas, Order No. 5, Texas Commission Project 18438 (dated July 10, 1998)

Also, U S West consolidated 43 rate centers to 16 within Colorado's 303 area code. Because calling scopes were affected, however, consumers experienced a modest increase in rates and some confusion about the modified calling scopes. NANC Report at § 1.1; *see also* Rate Center Consolidation within the 303 Area Code, Creation of a Single Local Calling Area Defined as All Territory Within the 303 Area Code, and Permissive 11

about implementing this measure, others contend that rate center consolidation may not be the best solution for their particular circumstances.<sup>186</sup>

116. As do most of the parties that commented on the NANC Report, we consider rate center consolidation to be a vitally important long-term measure to optimize the utilization of numbering resources.<sup>187</sup> We believe that rate center consolidation should be implemented to the greatest extent possible, and we seek comment on what actions this Commission should take to promote rate center consolidation.

117. We note that the Commission has previously encouraged states to consider rate center consolidation, among other measures, to decrease the frequency of the need for area code relief.<sup>188</sup> We wish to clarify our position that states do not require any additional delegation of authority from the Commission to engage in rate center consolidation.<sup>189</sup> Rather, because rate centers are inextricably linked with local call rating and routing issues, which fall within the traditional jurisdiction of state public utility commissions, we believe that state commissions have full authority to order rate center consolidation, and need obtain no further authorization from this Commission. We reiterate our support of state action to consolidate rate centers to improve numbering efficiencies.

118. We seek comment on how we may further encourage states to implement rate center consolidation where beneficial impacts could be achieved. For example, would delegating additional authority to state commissions to require codeholders to return vacant, unused codes

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Digit Local Dialing, *Decision and Order*, Decision No. C98-439, Docket No. 97M-548T, at 21 (dated April 29, 1998).

Minnesota consolidated 21 rate centers into 1 within six months of regulatory approval by the Minnesota Commission. NANC Report at § 15.4; *see also* Request by U S West Communications, Inc., to Consolidate its 21 Rate Centers in the Minneapolis-St. Paul Metropolitan Exchange Area into a Single Rate Center in Minneapolis, *Order Approving Rate Center Consolidation*, Docket No. P-421/EM-97-85 (April 24, 1997).

<sup>186</sup> *See* Florida Commission comments at 2-3 (some states may have statutory obstacles to expanding calling areas); Maine Commission comments at 8-9; New York Commission comments at 9; Pennsylvania Commission comments at 14.

<sup>187</sup> *See, e.g.*, AirTouch comments at 3, 15; AT&T comments at 5; Bell Atlantic Mobile comments at 13; GTE comments at 8-9; MediaOne comments at 4-5; SBC comments at 29.

<sup>188</sup> *See Pennsylvania Numbering Order*, 13 FCC Rcd. at 19029.

<sup>189</sup> The Florida Commission has filed a Petition for Reconsideration seeking clarification on this issue. *See* Common Carrier Bureau Seeks Comment on the Florida Public Service Commission's Petition for Authority to Implement Number Conservation Measures, *Public Notice*, NSD File No. L-99-33, DA 99-725 (rel. April 15, 1999).

that are no longer needed because of consolidation, as is proposed above in Section IV, help them to realize the full benefits of rate center consolidation?<sup>190</sup> We also seek comment on whether and how the FCC or state commissions can create incentives to encourage incumbent local exchange carriers (ILECs) voluntarily to combine rate centers for the purpose of improving the efficiency of number utilization and slowing NPA exhaust rates. In addition, we seek comment on whether the introduction of intraLATA dialing parity, and the heightened competition that it may bring to the short-haul toll market, may lessen incumbent carrier resistance to rate center consolidation.<sup>191</sup> In addition, because the advent of competition in the short-haul toll market may reduce ILEC revenue for these calls, we seek comment on whether ILEC migration to larger calling areas must, as anticipated by state commissions, necessarily result in higher rates being charged for basic service.

119. Although we believe that rate center consolidation will assist us in optimizing our numbering resources, we agree with MCI WorldCom that this measure will not, by itself, substantially reduce the demand for NPA relief until the industry addresses the underlying problem of associating call rating with NXX assignments.<sup>192</sup> Therefore, we seek comment on whether there are ways to separate the call rating functions from the call routing functions, which would result in a reduced demand for NXX codes. We note that the Colorado Telephone Numbering Task Force recommends eliminating the link between call rating and NXX codes by investigating the possibility of using the Signaling System 7 (SS7) network, rather than the current reliance on associating NPA-NXXs with the specific vertical and horizontal (V&H) coordinates of a rate area to transmit the information required for the rating and routing of every call.<sup>193</sup> Use of the SS7 network to transmit information for call rating would enable carriers to maintain their existing rate centers and to route calls according to their current network configuration. The adoption of this call rating method, however, will require that carriers complete a query for every call and modify their databases to include additional information, such as network addresses, LRNs, and/or V&H coordinates for the calling and called parties, on the SS7 call record. Furthermore, carriers may have to develop systems to inform consumers

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<sup>190</sup> Texas Commission comments at 11-12.

<sup>191</sup> With dialing parity, a telephone customer can presubscribe to and use any provider of telephone exchange service or toll service without having to dial extra digits to route a call to that carrier's network. 47 U.S.C. § 153(15). *See also Local Competition Second Report and Order*, 11 FCC Rcd 19392; *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, *Order*, FCC 99-54 (rel. March 23, 1999).

<sup>192</sup> MCI WorldCom comments at 26. *See also* Texas Commission comments at 35 (stating that the established rating and billing procedures using rate centers are the primary cause of the rapid exhaust of the NANP and, thus there should be a migration from traditional rating and billing methods to usage-sensitive rates).

<sup>193</sup> Colorado Telephone Numbering Task Force Report, Dec. 31, 1998, at § 5.5.2.

whether they are making a toll or local call through an audible or visual method. We believe that this proposal offers the possibility of greatly reducing the demand for additional NXX codes and thus merits further investigation. We seek comment on the Colorado Task Force's proposal. We also seek comment on whether the database modifications that carriers must make to accommodate LNP are similar to the modifications required to implement call rating using the SS7 network.

120. In addition, we seek comment on the relationship between rate center consolidation and other numbering optimization measures we may adopt, particularly number pooling.<sup>194</sup> We seek comment on whether rate center consolidation should necessarily precede moving to pooling in an area, or whether it is possible to implement both measures simultaneously, and simply expand the pools as rate centers are consolidated. To the extent that commenters suggest that consolidating rate centers prior to number pooling would increase the effectiveness of pooling by creating fewer, larger pools within an NPA,<sup>195</sup> we seek comment on how we might create incentives for state commissions to undertake rate center consolidation prior to implementing pooling in an area. For example, should we grant states the authority to implement pooling only after they have undertaken rate center consolidation in the area in question? In the alternative, would requiring carriers to meet specified number utilization thresholds provide them the incentive to consolidate rate centers voluntarily?<sup>196</sup>

121. Finally, we seek comment on how to ensure that rate center consolidation does not adversely impact 911 systems, in particular the default routing of 911 calls. We further seek comment on what, if any, role the FCC should have in determining potential impacts on 911 systems, and implementing appropriate solutions to these problems. More specifically, are the issues that arise regarding 911 default routing sufficiently similar in each state that we should consider referring the matters to the NANC for a recommendation on a solution or set of solutions that could be used in all states undertaking rate center consolidation?<sup>197</sup> We also seek comment on whether the FCC should take any actions to ensure that the concerns of the 911 community are addressed in the rate center consolidation process.<sup>198</sup>

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<sup>194</sup> See *infra* Section V.C.

<sup>195</sup> See, e.g., Allegiance comments at 8; BellSouth comments at 16; NASUCA comments at 2; Pennsylvania Commission comments at 14.

<sup>196</sup> See *supra* Section IV.C.

<sup>197</sup> NANC Report at § 15.4.

<sup>198</sup> NENA comments at 5.

## 2. Mandatory Ten-Digit Dialing and Related Measures

122. Currently, the standard dialing pattern is seven-digit dialing within an NPA, and ten-digit dialing between NPAs. Our area code relief rules dictate, however, that where overlays are used, ten-digit dialing is required not only between the original NPA and the overlay NPA, but also within each NPA, to prevent anticompetitive impacts on new entrants that may have few or no numbers in the original NPA.<sup>199</sup> There is often significant customer resistance to ten-digit dialing, which may explain why more state commissions have chosen to implement splits rather than overlays.<sup>200</sup> In fact, to preserve seven-digit dialing for inter-NPA calls within a community of interest, many states have authorized the use of "protected codes."<sup>201</sup>

123. *Mandatory ten-digit dialing and reclamation of protected codes.* Among the numbering optimization measures that do not require LNP, mandatory ten-digit dialing entails the dialing of ten digits for all calls, regardless of whether they are inter-NPA and intra-NPA and rated as local or toll.<sup>202</sup> Mandatory ten-digit dialing works as a numbering optimization measure by freeing up more numbering resources for use, through the reclamation of protected codes,<sup>203</sup> and potentially through permitting the use of either "0" or "1" as the first digit of an NXX code (the fourth, or "D" digit, of a ten-digit telephone number). Moreover, the adoption of ten-digit dialing on a nationwide basis might eliminate disincentives for states to adopt overlays. To date, we have observed the adoption of ten-digit dialing at the state and NPA levels in conjunction with

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<sup>199</sup> See *Local Competition Second Report and Order*, 11 FCC Rcd at 19518; 47 C.F.R. § 52.19(c)(3)(ii). See also NPA Code Relief Planning and Notification Guidelines (INC 97-0404-016, reissued Jan. 27, 1999), at § 6.3 (NPA Code Relief Guidelines).

<sup>200</sup> See NANPA, NPA Relief Activities, Assignments as of April 29, 1999 (NPA Relief Activities) (indicating that of approximately 100 recent and pending area code relief activities, 80 are or will be splits). This document is available at <[http://www.nanpa.com/number\\_resources\\_info/assignments.html](http://www.nanpa.com/number_resources_info/assignments.html)>.

<sup>201</sup> Where a community of interest contains portions of two or more NPAs, a particular NXX code that has been assigned for use within one of the NPAs is "protected," or made unassignable in the adjacent NPA. This permits every switch in the local calling area to route calls based on the NXX code, rather than the NPA-NXX, even across NPA boundaries. In addition, other protected codes are reserved for special services, such as N11 codes. Thus, protected codes are not available for number assignments to end users. NANC Report at §§ 10.5.2 and 10.5.3.1.

<sup>202</sup> NANC Report at § 10.1. See also *Uniform Dialing Plan* (INC 97-0131-017, issued July 1998), at § 6.0. This document evaluates potential uniform dialing plans for the NANP serving area.

<sup>203</sup> We note that protected codes, which are a deviation from standard dialing patterns, may be reclaimed without regard to whether mandatory ten-digit dialing is implemented. In fact, the NANC recommends that protected codes should be eliminated or reduced to "an absolute minimum." NPA Code Relief Guidelines at § 5.0.

the use of overlays for area code relief.<sup>204</sup> Furthermore, ten-digit dialing and reclamation of protected codes may be implemented on a national, statewide, or NPA-wide basis.<sup>205</sup> The NANC Report finds that the conversion to ten-digit dialing and the reclamation of protected codes could be implemented within 12 months.<sup>206</sup>

124. *Benefits.* Ten-digit dialing would allow future area code relief projects, particularly overlays, to be less disruptive to consumers.<sup>207</sup> In addition, Bell Atlantic Mobile states that mandatory ten-digit dialing may foster new and different uses for NPA overlays.<sup>208</sup> Moreover, if ten-digit dialing were adopted as part of a national numbering optimization policy, customer confusion resulting from inconsistencies in dialing patterns from one area to another would be eliminated.<sup>209</sup> PageNet also believes that ten-digit dialing would lower costs and reduce entry barriers, which, in turn, could result in lower prices and increased product and service innovation for all consumers.<sup>210</sup> GTE further states that ten-digit dialing will prevent discrimination among service providers.<sup>211</sup>

125. *Disruptive effects.* Ten-digit dialing, however, does present certain disruptive effects, particularly for consumers. Consumers often object to the inconvenience and confusion associated with having to remember and dial three extra digits.<sup>212</sup> Also, some research raises a concern that the young, elderly and the memory impaired may be particularly affected by the

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<sup>204</sup> Atlanta, Denver, Houston, Maryland and Miami have completed the conversion to ten-digit dialing. Exchanges in Dallas, portions of Los Angeles, Orlando, and eastern Pennsylvania, are presently in the process of converting to ten-digit dialing also. See NPA Relief Activities, *supra* at note 200.

<sup>205</sup> NANC Report at § 10.2.

<sup>206</sup> NANC Report at § 10.3. The respondents to the State Issues Task Force's Service Provider Questionnaire on Ten-Digit Dialing state that conversion to mandatory ten-digit dialing would take three to eight months. *Id.* This time frame would not include the unblocking of the D digit.

<sup>207</sup> NANC Report at §§ 10.5.1 and 10.7.1; Bell Atlantic Mobile comments at 16; PCIA comments at 12; Texas Commission comments at 27.

<sup>208</sup> As an example, Bell Atlantic Mobile suggests that spare NXX codes in NPAs could be shared with neighboring NPAs through a globalized overlay approach. Bell Atlantic Mobile comments at 4.

<sup>209</sup> NANC Report at § 10.5.1.

<sup>210</sup> PageNet comments at 10.

<sup>211</sup> GTE comments at 7.

<sup>212</sup> NANC Report at § 10.8.2. Customer education concerning the change in dialing pattern would be necessary.

change to ten-digit dialing, especially where 911 has not been implemented.<sup>213</sup> Businesses may also incur costs associated with changing advertising and stationery, updating databases, and reprogramming customer premises equipment (CPE).<sup>214</sup> Although the industry cost of implementing this measure will vary according to each geographic area and service provider, some carriers could experience substantial costs associated with modifications to switch translations and OSS, directory publishing, changes to announcement systems, and customer education.<sup>215</sup> Implementation of ten-digit dialing will also require upgrades to the Public Safety Answering Point (PSAP) system.<sup>216</sup> In light of these concerns, we seek further information on any other technical problems and costs associated with these measures. In particular, we seek comment on whether the ability to implement easily area code overlays could provide a disincentive to use existing resources more efficiently.

126. *National policy.* The majority of industry commenters support the conversion to mandatory ten-digit dialing as a numbering optimization measure, particularly in densely populated areas with NPAs that are projected to exhaust shortly.<sup>217</sup> Some commenters, however, explicitly reject the adoption of this measure.<sup>218</sup> The states also are divided in their embrace of this measure. For example, the Texas Commission supports an investigation into the costs and benefits of mandatory ten-digit dialing as a numbering optimization measure.<sup>219</sup> Similarly, the Florida Commission states that mandatory ten-digit dialing would open the possibility for new types of area code overlays, including expanded overlays.<sup>220</sup> The Ohio Commission argues that alternatives such as eight-digit uniform dialing and functional property codes have not been fully considered, and that these methods may be used to improve numbering utilization and postpone

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<sup>213</sup> NANC Report at § 10.8.2; CVSI comments at 3.

<sup>214</sup> NANC Report at §§ 10.4.1 and 10.8.2.

<sup>215</sup> NANC Report at §§ 10.4 and 10.4.1.

<sup>216</sup> NANC Report at § 10.9. The PSAP is a centralized answering point for emergency calls that serves a prescribed geographic area.

<sup>217</sup> AirTouch comments at 19; Ameritech comments at 12; Bell Atlantic comments at 2; BellSouth comments at 17; GTE comments at 7; Madison comments at 3; Nextel comments at 15; PCIA comments at 12; PrimeCo comments at 7; SBC comments at 24; Sprint comments at 37; USTA comments at 2-3.

<sup>218</sup> See CVSI comments at 3-4. CVSI also argues that ten-digit dialing is only a *de minimis* conservation measure with substantial public costs and social undesirability. See also MCI WorldCom comments at 27 (stating that ten-digit dialing provides no number conservation benefits).

<sup>219</sup> Texas Commission comments at 27.

<sup>220</sup> See Florida Commission comments at 4.

costly area code relief measures,<sup>221</sup> while the New York Commission points out that ten-digit dialing is not required to reclaim protected NXX codes.<sup>222</sup> We seek comment on whether we should adopt nationwide ten-digit dialing, or whether we should encourage states to implement ten-digit dialing as a priority.

127. *D digit expansion.* Expansion of the NANP so-called "D" digit (the fourth digit of a ten-digit telephone number) to include 0 and 1 could accompany the implementation of ten-digit dialing.<sup>223</sup> Adoption of this measure would increase the quantity of NXXs available within an NPA by approximately 25%.<sup>224</sup> The NANC Report states that D digit expansion must be done simultaneously by all participants in the NANP because otherwise calls can not be completed to exchanges where carriers continue to retain the D digit for internal use.<sup>225</sup> We seek comment on whether D digit expansion may be implemented on a statewide or NPA-wide basis, rather than at a mandatory national level by all service providers. The NANC Report also states this modification is expected to be a multi-year process for carriers to implement, and therefore, expansion of the D digit would be implemented as the final phase of the measures associated with ten-digit dialing.<sup>226</sup>

128. *Disruptive effects of D digit expansion.* D digit expansion, however, raises significant implementation concerns. The record reveals that implementation of this measure will require significant and costly technical modifications to switches, operations support systems, and customer premises equipment.<sup>227</sup> Moreover, since service providers may be using these NXXs for

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<sup>221</sup> Ohio Commission comments at 7.

<sup>222</sup> New York Commission comments at 12-13. *See also* MCI WorldCom comments at 27 (ten-digit dialing is not necessary to release protected NXX codes).

<sup>223</sup> NANC Report at § 10.1. NXX codes that begin with 0 and 1 are restricted by industry agreement and are used for switches to access operators, toll dialing and/or inter-NPA calling. NANC Report at § 10.5.2.2. In order for these restricted NXX codes to be available for assignment, ten-digit dialing must be present. *Id.* We note that the expansion of the D digit measure is presently under study by INC. *See* INC Issue Number 159, submitted Jan. 25, 1999. This document is available at <<http://www.atis.org/atis/clc/inc/incissue.htm>>

<sup>224</sup> NANC Report at § 10.5.2.2.

<sup>225</sup> NANC Report at § 10.7.2.2.

<sup>226</sup> NANC Report at §§ 10.2, 10.3, and 10.7.2.1.

<sup>227</sup> NANC Report at § 10.6.1.3; AT&T comments at 14-15; MCI WorldCom comments at 13-14; *see also* Letter to FCC from Brian Baldwin, dated March 12, 1999 (Ameritech March 12, 1999, *ex parte*). Ameritech specifies that the operating systems applications that would be affected by D digit expansion include inward operator routing, calling cards, wireless ESRDs, and test lines, etc. *Id.*

intra-network use, they will need to develop an alternate technical solution.<sup>228</sup> Furthermore, a call may not be completed if this measure is not implemented by all service providers in a timely manner.<sup>229</sup> MCI WorldCom further asserts that adoption of this measure would preclude significant options for long-term expansion of the NANP.<sup>230</sup>

129. *National policy.* We note that most commenters who addressed this issue oppose the expansion of the D digit because of implementation concerns.<sup>231</sup> One commenter also recommends that the Commission preclude states from requiring the expansion of the D digit to preserve national flexibility to devise long-term alternatives for NANP expansion.<sup>232</sup> Therefore, we seek further comment on the costs and benefits of expanding the D digit, and on whether we should mandate the adoption of this measure at the national level to ensure its effectiveness. We also seek comment on whether states should independently implement the expansion of the D digit as a numbering optimization measure at the present time.

## C. LNP-Based Solutions: Number Pooling

### 1. Background

130. Telephone number pooling addresses one of the causes of area code exhaust: the allocation of numbers in full central office code (NXX) blocks of 10,000. Historically, network routing mechanisms are based upon the understanding that geographic numbers are assigned on an NXX code basis and associated with a specific switch, and, correspondingly, that the network address to which the call must be routed is embedded in the first six digits (NPA-NXX) of the called number. Number pooling allows service providers in a given area to receive numbers in blocks smaller than 10,000 by breaking the association between the NPA-NXX and the service provider to whom the call is routed. Through number pooling, participating carriers can effectively share resources from NXX codes rather than receiving an entire NXX code at a time.

131. Once the association between the NPA-NXX code and the service provider is broken for purposes of call routing, an alternative to using the first six digits of the called number

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<sup>228</sup> NANC Report at § 10.6.1.3; Ameritech March 12, 1999, *ex parte*.

<sup>229</sup> NANC Report at § 10.7.2.2.

<sup>230</sup> MCI WorldCom comments at 27. MCI WorldCom states that subsequent expansion of the NANP to 12 digits would be affected.

<sup>231</sup> *See, e.g.*, MCI WorldCom comments at 28.

<sup>232</sup> MCI WorldCom comments at 27.

to route the call must be found. One alternative would be to perform seven-digit (NPA-NXX-X) or greater screening within each switch on calls to pooled numbers.<sup>233</sup> The industry consensus view is that this method of call routing would be costly to implement, administratively burdensome and would result in an inefficient use of switch memory.<sup>234</sup> The Location Routing Number (LRN) infrastructure supporting LNP provides a second, arguably more practical, alternative routing method.<sup>235</sup>

132. Under the LRN method, a unique ten-digit number -- the "location routing number" or LRN -- is assigned to each central office switch to identify each switch in the network for call routing purposes.<sup>236</sup> The LRN then serves as a network address. When an individual telephone number is ported, a record associating the ported number with the LRN of the appropriate service provider's switch is created and stored in the former carrier's LNP service control point (SCP) database, via downloads from the local Service Management System (SMS).<sup>237</sup> Any service provider routing a call to the ported number would do so by querying the database to determine the LRN that corresponds to the dialed telephone number, and routing the call to the switch identified by that LRN.

133. The LRN database structure can also be used to route calls to customers who have been assigned telephone numbers from a pool, because, just like with ported numbers, the NPA-

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<sup>233</sup> See NANC Report at § 5.1.2.

<sup>234</sup> See INC Initial Report to the NANC on Number Pooling, June 1998 Revision, n.3. (INC Number Pooling Report).

<sup>235</sup> See INC Number Pooling Report at § 5.1.

<sup>236</sup> See generally Telephone Number Portability, *Second Report and Order*, 12 FCC Rcd at 12287.

<sup>237</sup> An SMS is a database or computer system not part of the public switched network that, among other things: (1) interconnects to an SCP and sends to that SCP the information and call processing instructions needed for a network switch to process and complete a telephone call; and (2) provides telecommunications carriers with the capability of entering and storing data regarding the processing and completing of a telephone call. *Telephone Number Portability First Report and Order*, 11 FCC Rcd at 8402 n.288. An SCP is a database in the public switched network that contains information and call processing instructions needed to process and complete a telephone call. The network switches access an SCP to obtain such information. Typically, the information contained in an SCP is obtained from the SMS. *Id.*

Local SMSs (LSMSs) are the databases that carriers will regularly access to obtain information on ported telephone numbers. The Number Portability Administration Center (NPAC) SMSs are the regional databases maintained by the local number portability administrators, which contain the lists of ported telephone numbers and associated LRNs. These lists of ported numbers and LRNs are periodically transmitted from the NPAC SMSs to the LSMSs, and then downloaded to network SCPs for call processing. *Telephone Number Portability Second Report and Order*, 12 FCC Rcd at 12288 n.9.

NXX of a pooled number no longer necessarily indicates the switch or service provider associated with the service. To facilitate call routing when LRN LNP is utilized for number pooling, the entire population of pooled numbers in the pooling area, and associated LRNs, must be stored in all of the LNP SCP databases that service providers use to store LRN information for numbers ported from their networks.<sup>238</sup> Thus, number pooling can only be implemented where LRN LNP has been deployed.

134. The NANC Report proposed two different types of pooling: thousands-block pooling, in which carriers receive numbering resources in blocks of 1,000, and individual telephone number (ITN) pooling, in which carriers receive telephone numbers one at a time.<sup>239</sup> In addition, the NANC proposed a numbering optimization method known as unassigned number porting (UNP).<sup>240</sup> Although not technically a pooling method because carriers receive numbering resources from each other, rather than from a common pool overseen by a pooling administrator, the method is somewhat similar to ITN in that individual numbers are ported using the same network infrastructure (LNP) to route calls.

135. Initially, proposed pooling methodologies would be confined to a rate center, which denotes the smallest geographic area used to distinguish rate boundaries.<sup>241</sup> That is, each rate center would contain a separate pool of numbering resources. In this manner, current wireline call rating mechanisms associating an NXX with a particular geographic area (i.e., rate center) can be maintained. Pooling, however, could be extended beyond the rate center if methods to eliminate the link between call rating and NXX codes using the SS7 network, as discussed in Section V.B.1., were implemented.

136. *Thousands-block pooling.* Thousands-block pooling involves the allocation of blocks of sequential telephone numbers within the same NXX code to different service providers, and possibly different switches, within the same rate center. All 10,000 numbers available in the NXX code are allocated within one rate center, but are allocated to multiple service providers in

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<sup>238</sup> See NANC Report at § 5.6.1. See also INC Number Pooling Report at § 5.3.

<sup>239</sup> NANC Report at §§ 4 and 5.

<sup>240</sup> *Id.* at § 6.

<sup>241</sup> See Thousand Block Pooling Guidelines at § 1. See also discussion *supra* Section V.B.1.

thousand-number blocks, instead to one particular service provider.<sup>242</sup> Allocations are accomplished via a Pooling Administrator, who coordinates the allocation of numbers to a particular service provider with the Number Portability Administration Center (NPAC) SMS.<sup>243</sup>

137. To implement thousands-block pooling, the industry has proposed employing the Intelligent Network/Advanced Intelligent Network (IN/AIN) system used for LNP. Use of this external database system for number pooling is described in detail as the NXX-X/LRN method in the INC Number Pooling Report.<sup>244</sup> As noted above, to facilitate proper network routing in a thousands-block pooling environment, every service provider's existing LNP SCP database within the pooling area would store specific LRN routing information for thousand- number blocks within the same NXX. In addition, each service provider's LNP mechanisms would query their database for calls to pooled numbers allocated to other service providers.<sup>245</sup>

138. With little exception, parties commenting on the LRN-based methods of numbering optimization strategies agree that a nationwide thousands-block pooling architecture could make more efficient use of NXX codes already allocated and those awaiting allocation.<sup>246</sup> Given the potential benefits of a nationwide pooling architecture, we tentatively conclude that implementing thousands-block pooling in major markets is an important numbering resource optimization strategy that is essential to extending the life of the NANP. In this section of the Notice, we seek comment on how thousands-block pooling should be implemented. We believe that carriers should be required to participate in pooling in areas where the benefits of pooling outweigh the associated costs. We seek comment on how best to achieve this goal.

139. *Individual telephone number pooling and unassigned number porting.* Similarly, individual telephone number (ITN) pooling and unassigned number porting (UNP) involve the allocation of individual telephone numbers within the same NXX to different service providers,

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<sup>242</sup> For example, if the 202-418 NPA/NXX were pooled, up to ten service providers could serve customers from it. One service provider could be allocated every line number from 202-418-0000 through 202-418-0999. Another service provider could be allocated every line number in the range 202-418-1000 through 202-418-1999.

<sup>243</sup> The NPAC SMS is a database that contains all necessary routing information on ported telephone numbers and facilitates the updating of the routing databases of all subtending service providers in the portability area. *See* Thousand Block Pooling Guidelines at § 14.

<sup>244</sup> *See* NANC Report at § 5.1.3; *see also* INC Number Pooling Report at § 11.

<sup>245</sup> *See supra* ¶ 132.

<sup>246</sup> *See* Ameritech comments at 4; AT&T comments at 7; Florida Commission comments at 3; Kentucky Commission comments at 1; MCI WorldCom comments at 19. *But see* BellSouth comments at 1; Ohio Commission comments at 5; U S West comments at 11.

and possibly different switches, within the same rate center. As with thousands-block pooling, all 10,000 available numbers in an NXX code are allocated within one rate center, but individual telephone numbers may be allocated to different service providers. With ITN pooling, allocations would be accomplished via a Pooling Administrator, to coordinate the allocation of individual numbers to a particular service provider with the NPAC. With UNP, however, allocation of individual telephone numbers generally would be accomplished between service providers by using established LNP porting mechanisms, and would not involve a Pooling Administrator.

140. Just as it has been proposed for thousands-block pooling, ITN pooling and UNP would also employ the IN/AIN system used for LNP. To facilitate proper network routing in an ITN pooling environment or with UNP, every service provider's existing LNP SCP database within the rate center would store specific LRN routing information for individual numbers within the same NXX. In addition, each service provider's LNP mechanisms would query their database for calls to individual numbers allocated to other service providers.

141. The NANC Report estimates that four to six years may be required to implement ITN pooling from the date of a regulatory order mandating its implementation.<sup>247</sup> Unlike thousands-block pooling, the state of development of technical standards and administrative guidelines for ITN pooling is not as advanced. For these reasons, we tentatively conclude not to pursue ITN pooling at this time.

142. With regard to UNP, we seek comment on whether we should allow carriers to port unassigned numbers among themselves. Short of public safety and network concerns, we see no reason to prohibit the practice where two or more carriers reach a mutual agreement to transfer unassigned numbers among themselves.<sup>248</sup> Some carriers may find the practice useful in extreme situations in which numbering resources may not otherwise be available. We are mindful, however, that porting large blocks of numbers may not be possible for certain types of switches,<sup>249</sup> and may disrupt processing of calls to E911 systems.<sup>250</sup> Therefore, we seek comment on whether allowing carriers to port unassigned numbers among themselves may result in call-routing problems and public safety concerns. We also seek comment on whether state commissions should make the determination to allow carriers to use UNP in a given area.

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<sup>247</sup> NANC Report at § 4.3.

<sup>248</sup> We note that, in the *Telephone Number Portability Second Report and Order*, we recognized that the NANC recommended that service providers not be allowed to port unassigned numbers absent a specific regulatory authorization. *Telephone Number Portability Second Report and Order*, 12 FCC Rcd at 12319-20.

<sup>249</sup> See U S West comments at 14 n.16.

<sup>250</sup> See *infra* ¶¶ 179-181

## 2. Pooling Roll-out

143. *Relation of LNP implementation to thousands-block pooling.* As previously explained, thousands-block pooling relies on the same network architecture that makes LNP possible.<sup>251</sup> The Commission required wireline carriers in the largest 100 MSAs to implement LNP as of December 31, 1998, in switches that another carrier has requested be made LNP capable.<sup>252</sup> Therefore, the degree of deployment of LNP is greatest in switches located within the largest 100 MSAs. As of January 1, 1999, LECs may request LNP in other LECs' individual switches in areas outside of the largest 100 MSAs, to be provided no later than six months after receiving the request.<sup>253</sup> CMRS carriers are not required to deploy LNP until November 24, 2002.<sup>254</sup>

144. Given the deployment schedule for LNP, we tentatively conclude that any deployment schedule for thousands-block pooling should initially be tied to the largest 100 MSAs. This is because it appears that the greatest benefits from pooling are achieved when all, or most, participating carriers are LNP capable, and thus, are able to participate in a pooling methodology.<sup>255</sup> We seek comment, then, on whether it is appropriate to tie initially the deployment schedule for thousands-block pooling to the largest 100 MSAs, or if another deployment schedule should be considered.

145. *Authority to order deployment of LNP for thousands-block pooling purposes.* Currently, our rules specify that only another carrier may request a LEC to provide number portability in a given switch.<sup>256</sup> A key issue in determining the schedule for deployment of thousands-block pooling is the treatment of carriers that may be LNP capable but have not yet

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<sup>251</sup> NANC Report at § 5.1.2.

<sup>252</sup> 47 C.F.R. § 52.23(b)(1).

<sup>253</sup> 47 C.F.R. § 52.23(b)(2)(iv)(C) and (D). For switches that do not require hardware changes or complete replacement, LNP must be offered within 30 days (if the subject switch is a remote switch supported by a host switch equipped for LNP) or 60 days (if the subject switch requires software, but not hardware, changes to support LNP). 47 C.F.R. § 52.23(b)(2)(iv)(A) and (B).

<sup>254</sup> See *CMRS LNP Forbearance Order* at ¶ 1. See also discussion *infra* Section V.B.4.

<sup>255</sup> NANC Report at § 5.10.2; see also Number Utilization Study at 21; California Commission comments at 6.

<sup>256</sup> 47 C.F.R. § 52.23(b)(1).

implemented LNP in a specific area,<sup>257</sup> and the treatment of carriers that are not now, nor will be for the foreseeable future, LNP capable.<sup>258</sup> We seek comment on whether ordering LNP capability primarily for the purpose of thousands-block pooling is permitted under the 1996 Act. Does this Commission have the authority, and can it delegate to other entities, the authority to order carriers to implement LNP for number utilization purposes?<sup>259</sup> We seek comment on whether an entity other than a LEC could be permitted to request that a specific switch or group of switches be made LNP capable for the sake of providing thousands-block pooling within or without the largest 100 MSAs. It appears from the record received on the NANC Report as well as in other petitions filed with this Commission, that several state commissions are interested in the possibility of ordering number pooling in areas outside the largest 100 MSAs.<sup>260</sup> Therefore, we also request comment on whether requests that a carrier become LNP capable could be made by an entity other than another LEC, such as a state commission, for areas outside the largest 100 MSAs. Because of the expense involved in converting switches to provide LNP capability, we also seek comment on whether the criteria for requesting LNP capability in a given switch or switches for the purpose of implementing number pooling should be more stringent than the criteria for requiring an already LNP-enabled switch or switches to participate in thousands-block pooling.<sup>261</sup>

146. *Who decides whether to implement pooling in a given area.* As we have tentatively concluded that thousands-block pooling should be implemented where the benefits of doing so outweigh the costs, we seek comment, first, on what entity should be tasked with making the decision whether to implement pooling in a given area. For example, we could simply order that LNP-capable carriers engage in thousands-block number pooling in the largest 100 MSAs, on the basis that LNP is most widely deployed in those areas, and they are also likely to be subject to the majority of area code relief proceedings. On the other hand, we could delegate the decision to state utility commissions, which could order thousands-block pooling in any area, pursuant to a determination that the costs of ordering pooling are outweighed by the benefits.

147. In the alternative, we seek comment on whether state utility commissions (or another entity) could make the decision to opt into a nationwide thousands-block pooling

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<sup>257</sup> California Commission comments at 6.

<sup>258</sup> See *infra* Section V.C.4.

<sup>259</sup> But see Nextel comments at 7 (stating that this Commission must assert plenary federal jurisdiction to establish nationwide standards that require carriers to implement specific technologies).

<sup>260</sup> See, e.g., Maine Public Utilities Commission Petition for Additional Delegated Authority to Implement Number Conservation Measures, NSD File No. L-99-27, CC Docket No. 96-98, filed March 19, 1999, at 8.

<sup>261</sup> See Ameritech comments at 11; Teligent comments at 4.

architecture on a regional basis, or opt out of a "default" nationwide roll-out of pooling. Based on the proximity of state utility commissions to area code exhaust problems, we seek comment on whether a regime such as that which currently exists in the area of area code relief is more desirable.<sup>262</sup> That is, should we allow state utility commissions to elect to make the decision whether to opt in or out of thousands-block pooling, but provide that, if the commission elects not to make the decision, another entity decides whether an area should opt in or out of thousands-block pooling? We further seek comment on what entity should decide whether to deploy pooling in an area, if the state commission declines to do so. Regardless of whether the paradigm is one of opting into a nationwide pooling methodology, or opting out of a roll-out based on the top 100 MSAs, and regardless of whether a state utility commission or some other entity makes the decision to opt in or out of thousands-block pooling, certain criteria would have to be met to justify the decision. We are concerned, however, that a state-by-state assessment of the value of number pooling may understate the overall value of number pooling to the life of the NANP, because state commissions are likely to be primarily interested in extending the lives of individual NPAs within their states, rather than the overall life of the NANP.

148. *Criteria to justify a mandate of pooling in a given area.* Ordering pooling in an area should be guided by the decision that the benefits of doing so will outweigh the costs. Certain costs of pooling, such as establishing the Pooling Administrator, will necessarily be nationwide in nature, and generally, fixed. Other costs, however, particularly the costs to individual carriers to update their OSS and switches to support pooling, will be more local in nature. Although it will be difficult to determine with precision whether the benefits of an area's participation in pooling in avoiding area code exhaust, and the benefits to the country as a whole of avoiding exhaust of the NANP, outweigh the costs to carriers, and ultimately to their customers, we propose that certain criteria be met to justify a mandate of pooling in an area, or, to relieve an area from a pooling mandate. We seek comment generally on what those criteria should be. In comments on the NANC Report, certain parties proposed possible factors that would justify an order of thousands-block pooling.<sup>263</sup> Based on those responses and the criteria in the NANC Report under the heading "Conditions Which Support Maximum Potential,"<sup>264</sup> we seek comment specifically on a number of areas.

149. Because thousands-block pooling provides little benefit in situations where there is

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<sup>262</sup> See 47 C.F.R. § 52.19(a) and (b)(1) (permitting state commissions to resolve matters involving the introduction of area codes within their states, but requiring the NANPA to undertake this function in the event the state commission does not notify the NANPA that it will perform the area code relief planning).

<sup>263</sup> See, e.g., USTA comments 4-5; California Commission comments at 7-8.

<sup>264</sup> NANC Report at § 5.10.2.

little or no competition within a rate area,<sup>265</sup> one criterion for opting in or out of pooling in a given area may be the number of competing service providers in the area, and the number of service providers likely to compete in the near future. In addition, the number of LNP-ready service providers in the rate center would also be related to the total number of service providers.<sup>266</sup> If there are a number of service providers, but they are primarily CMRS or paging providers, there may be little gain from number pooling, at least for the immediate future, because CMRS providers are not required to implement LNP until November 2002, and paging providers are not required to implement LNP at all.<sup>267</sup> Similarly, certain types of telephone company switches may not be able to accommodate thousands-block pooling.<sup>268</sup> We seek comment on what would be a reasonable number of LNP-ready service providers using numbering resources in a given area to justify requiring pooling in the area.

150. Another criterion that may weigh in the decision to require pooling in an area is the stage of exhaust of the NPA in which pooling is to take place. The NANC Report notes that thousands-block pooling is likely to provide the greatest benefit when there are sufficient numbering resources still available in the NPA to "stock" the pools.<sup>269</sup> If there are few numbering resources remaining in an NPA, pooling may do little or nothing to extend the life of the NPA.<sup>270</sup> Thus, we seek comment on whether a criterion for opting in or out of a thousands-block pooling methodology should be the number of NXXs that remain in an NPA, or the expected number of thousands blocks to be returned within an NPA pursuant to a pooling plan.<sup>271</sup> That is, although few NXXs may remain for assignment, if a large number of already assigned NXXs have low utilization rates, and thus are subject to reclamation, then there may be significant benefits to pooling even in an NPA nearing exhaust. Consideration of this criterion does not preclude a mandatory reclamation of numbers if it is found that service providers have built excessively large

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<sup>265</sup> See NANC Report at § 5.10.2.

<sup>266</sup> USTA comments at 4.

<sup>267</sup> See discussion *infra* Section V.C.4, regarding non-LNP capable carriers.

<sup>268</sup> U S West states that it would not be able to accommodate thousands-block pooling in either its Nortel DMS-10 or Lucent 1AESS switches. U S West comments at 14 n.16.

<sup>269</sup> See NANC Report at § 5.3.1.2 (stating that a determination of the number of NXXs remaining in an NPA is necessary prior to implementing pooling within a particular NPA to determine whether sufficient numbering resources exist to create a numbering pool).

<sup>270</sup> See, e.g., Ohio Commission comments at 5 (citing Ohio Commission analysis that applying thousands-block pooling to the 216 and 614 NPAs prior to their splits would have provided less than a six-month extension to the life of either NPA).

<sup>271</sup> See discussion *infra* Section V.D.2.

inventories of numbering resources.

151. Several parties have observed that the greatest utility to be gained from thousands-block pooling exists when that measure is combined with a rate center consolidation.<sup>272</sup> Consolidating rate centers prior to pooling would likely lead to fewer, larger pools within an NPA, thereby increasing the effectiveness of thousands-block pooling. Because thousands-block pooling exists at the rate center level, however, it may be problematic for an area to undergo rate center consolidation while implementing thousands-block pooling.<sup>273</sup> Similarly, consolidating rate centers following pooling implementation will require consolidation of the pools within the NPA. We seek comment on whether a criterion for opting in or out of thousands-block pooling should be an on-going or planned effort to consolidate rate centers within an NPA.

152. Several state utility commissions have studied the effects that ordering thousands-block pooling would have on the lives of existing NPAs.<sup>274</sup> We seek comment on whether the decision to opt in or out of a nationwide thousands-block pooling methodology should be based on detailed studies of the effectiveness that pooling would bring to a particular NPA or NPAs. If detailed studies incorporating some or all of the criteria outlined above are ordered, then we seek comment on whether we should designate the entity that will perform the studies. Furthermore, if we do so, we seek comment on who the entity should be.

153. Finally, we invite commenting parties to suggest any other criteria that may favor a mandate of thousands-block pooling in a given area.

154. *Relevant areas in which to adopt thousands-block pooling.* We seek comment on the relevant areas for opting into, or out of, a nationwide thousands-block pooling methodology. Due to the deployment of LNP, generally, in the largest 100 MSAs, we seek comment on whether the initial deployment of thousands-block pooling, like the LNP implementation schedule, should be limited to the largest 100 MSAs, with extension to other areas following the initial deployment. We also seek comment on whether the implementation should be staggered, like the LNP implementation schedule, to include the largest MSAs in the first group, with implementation in smaller MSAs later. We also seek comment on whether, if the paradigm is one of opting into, rather than out of, a nationwide thousands-block pooling methodology, pooling should be

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<sup>272</sup> AT&T comments at 3; BellSouth comments at 16; NASUCA comments at 4; *see also* discussion *supra* ¶ 121.

<sup>273</sup> Bell Atlantic comments at 10.

<sup>274</sup> *See, e.g.*, Ohio Commission comments at 4-5; Colorado Commission comments at 2; Florida Commission comments at 2-3; Texas Commission comments at 18-23; Illinois Commission Pooling Trial Report, Dockets 97-0192197-0211 (Dec. 8, 1998).

required in the entire MSA, on an NPA-wide basis, or on a rate-center-by-rate-center basis. Similarly, if the default implementation plan calls for pooling in the largest 100 MSAs with the possibility of opting out of the pooling plan, should the appropriate areas from which to opt out be based on an entire MSA, an NPA within the MSA, or on a rate-center by rate-center basis?

### 3. Implementation Time Frame

155. Of the two LNP-based number pooling alternatives addressed in the NANC Report, ITN and thousands-block, the NANC believes that thousands-block pooling can be implemented in a shorter time frame.<sup>275</sup> The actual time needed to implement thousands-block pooling, however, is dependent on a number of variables. The extent of LNP deployment, the provisioning method chosen, compatibility of service providers operational support systems, selection of a Pooling Administrator, and the need for enhancements to switches, SCPs, and other service provider systems, and availability of necessary hardware and software changes from vendors, all affect the time frame for implementation of thousands-block pooling.

156. The NANC Report includes an implementation timeline for thousands-block pooling. This timeline identifies the high-level tasks that must be accomplished to implement thousands-block pooling, as well as the estimated time and the party responsible for accomplishing each task.<sup>276</sup> Several pre-pooling activities, such as deployment of LNP and analysis of current and future numbering needs, are already underway. The pooling administration tasks identified by the NANC Report include: development of Pooling Administration guidelines; selection of a Pooling Administrator; and development by the Pooling Administrator of an automated system for allocation of pooled number resources, built according to industry-supplied specifications and requirements. Of these tasks, the Thousands Block Pooling Guidelines are largely completed.

157. The NANC Report further identifies the selection of a pooling deployment method -- port-on-demand, pre-port, or activate-as-needed<sup>277</sup> -- as the first critical technical task. The industry selected the pre-port methodology with Efficient Data Representation (EDR), a data

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<sup>275</sup> See NANC Report, Executive Summary dated Sept. 23, 1998, at 2.

<sup>276</sup> See NANC Report at § 5.3.

<sup>277</sup> Port-on-demand is a pooling deployment method by which numbers within blocks allocated to a specific service provider are ported only at the time they are actually assigned or reserved for a customer. Using the pre-port method, all numbers within blocks allocated to a service provider are ported when they are allocated to the service provider, so that they may subsequently be assigned to customers in the same manner as other numbers within the service provider's inventory. The activate-as-needed method allows numbers to be ported at the time allocation is made to the service provider, or at the time they are actually assigned or reserved for a customer, or anytime in between. See NANC Report at § 5.1.3.

formatting method that facilitates the transfer of large ranges of numbers as a single message.<sup>278</sup> Other technical tasks include development and deployment of enhancements to the NPAC SMS to accommodate pooling, development of switch requirements, and system testing. The NANC Report also sets forth a number of tasks that service providers, together with equipment vendors, must accomplish to achieve number pooling. These tasks include: modifications to service provider LSMSs and SCPs; enhancements to Service Order Administration systems (SOAs) and operations support systems; and enhancements to switches, and subsequent testing.

158. Although each of these tasks will take a different amount of time to complete, the NANC Report estimates that all of them may be achieved, and thousands-block pooling could be implemented, within 10 to 19 months from a regulatory order.<sup>279</sup> We seek comment on whether the estimated time allotted to each of the major tasks involved in implementing thousands-block number pooling is necessary, or, on the other hand, is sufficient, to ensure the proper implementation of thousands-block number pooling.

#### 4. Non-LNP-Capable Carriers

159. As we have noted above, because thousands-block pooling and other pooling methods are based on LRN architecture, carriers who have not deployed LRN architecture to support LNP cannot participate in number pooling. Assuming that we were to adopt some form of pooling requirement for LNP-capable carriers, we must also consider how the implementation of pooling would affect non-LNP-capable carriers. In this section, we seek comment on whether the need to promote efficient use of numbering resources requires non-LNP-capable carriers to participate in pooling, the relative costs and benefits of extending pooling requirements to such carriers, and whether there are viable non-LNP based alternatives to pooling that would promote the efficient use of numbers by non-LNP based carriers.

160. For purposes of this inquiry, non-LNP-capable carriers can be divided into three categories: (1) "covered" CMRS carriers<sup>280</sup> in the largest 100 MSAs, who are not currently LNP-capable, but will be required to implement LNP by a date certain; (2) wireline and "covered" CMRS carriers outside the largest 100 MSAs, who will be required to deploy LNP in the future

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<sup>278</sup> See NANC Meeting Minutes, Aug. 19-20, 1998.

<sup>279</sup> See NANC Report at § 5.3.3.

<sup>280</sup> The term "covered CMRS" refers to broadband Personal Communications Service (PCS), cellular, and 800/900 MHz Specialized Mobile Radio (SMR) licensees that (1) hold geographic area licenses or are incumbent SMR wide area licensees, and (2) offer real-time, two-way switched voice service, are interconnected with the public switched network, and utilize an in-network switching facility that enables such CMRS systems to reuse frequencies and accomplish seamless hand-offs of subscriber calls. 47 C.F.R. § 52.21(c).

only if and when they receive a request from a competing carrier;<sup>281</sup> and (3) non-"covered" CMRS providers, such as paging carriers, who are not subject to LNP requirements of any kind. We address the issue of number pooling as it affects each category in turn.

161. With respect to the first category, we recently decided in the *CMRS LNP Forbearance Order* that covered CMRS providers would be required to implement LNP in the largest 100 MSAs by November 24, 2002.<sup>282</sup> Once that has occurred, it presumably will be feasible for these carriers to participate in thousands-block number pooling on the same or an equivalent basis as wireline carriers in the largest 100 MSAs that have already developed LNP capability. Accordingly, we believe that once covered CMRS carriers are LNP capable, they should be equally subject to any pooling requirement that we may adopt for LNP-capable wireline carriers.<sup>283</sup> We seek comment on this proposal.

162. In the *CMRS LNP Forbearance* proceeding and this proceeding, CMRS carriers have generally asserted that their participation in number pooling would have less impact on efficient number utilization than participation by other carriers. Among the reasons asserted are: (1) CMRS carriers would have few, if any, numbers to contribute to pools because these carriers have high utilization rates;<sup>284</sup> (2) because CMRS carriers use only a limited number of rate centers, their pooled numbers would be available for wireline assignment only in those rate centers, instead of area-wide;<sup>285</sup> (3) because CMRS carriers experience rapid subscriber growth, it is more efficient for wireless carriers to be assigned an entire NXX, rather than multiple thousands blocks, to meet short-term needs.<sup>286</sup>

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<sup>281</sup> As discussed below, the CMRS LNP requirements for the largest 100 MSAs also require covered CMRS carriers outside the largest 100 MSAs to support roaming by CMRS customers from the largest 100 markets who use ported numbers. See 47 C.F.R. § 52.31(a)(2). Thus, CMRS carriers outside the largest 100 MSAs will be required to make certain LNP-related changes to their networks to support roaming even if they do not receive a request to provide LNP to customers in their home market. These changes, however, are not as extensive as those that would be required to implement LNP for their own customers, or to participate in number pooling.

<sup>282</sup> *CMRS LNP Forbearance Order* at ¶¶ 1, 39.

<sup>283</sup> See also discussion *infra* ¶ 167.

<sup>284</sup> See, e.g., AirTouch comments at 7; AT&T comments at 19-21; Bell Atlantic Mobile comments at 7.

<sup>285</sup> See, e.g., AirTouch comments at 7; AT&T comments at 19-21.

<sup>286</sup> See, e.g., AirTouch comments at 7; Bell Atlantic Mobile comments at 7.

163. On the other hand, some state regulators have urged the Commission to consider applying pooling requirements to CMRS carriers.<sup>287</sup> These states contend that the participation of CMRS carriers in pooling is important because, even if CMRS carriers have high utilization rates that would prevent them from contributing large amounts of numbers to a pool, the ability of CMRS carriers to draw numbers from the pool, rather than requiring separately allocated NXX blocks, would enhance the effectiveness of pooling as a numbering optimization measure.<sup>288</sup>

164. The issue of CMRS participation in number pooling is also the subject of data provided by the NANPA, in the *CMRS LNP Forbearance* proceeding and in a subsequent presentation to the NANC.<sup>289</sup> In these submissions, the NANPA has presented several alternative projections of the potential impact of thousands-block number pooling on NANP exhaust that vary depending upon whether CMRS participation in pooling is assumed. Specifically, the NANPA estimates that if thousands-block pooling were implemented in the year 2000 by all wireline, CMRS, and paging carriers, the life of the NANP would be extended until 2051, or even longer if the pooling program included reclamation of existing NXX codes.<sup>290</sup> In an alternative projection, the NANPA estimates that implementation of pooling by wireline carriers alone (*i.e.*, with no CMRS participation) would extend NANP life until 2027.<sup>291</sup>

165. We seek comment on the assertions of CMRS carriers and state regulators regarding the potential numbering resource optimization benefits that would flow from covered CMRS participation in thousands-block number pooling. We also seek comment on the projections presented by the NANPA concerning the comparative impact on NANP exhaust depending on whether pooling includes or does not include CMRS participants.<sup>292</sup> We recognize that the NANPA's projections have been criticized by some carriers,<sup>293</sup> and that the NANPA has

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<sup>287</sup> See, e.g., Kentucky Commission comments at 2; North Carolina Commission comments at 3.

<sup>288</sup> See, e.g., Letter from Lawrence G. Malone, General Counsel, New York Commission, to William E. Kennard, Chairman, FCC, dated Dec. 10, 1998 (New York Commission December 10, 1998, *ex parte*), filed in WT Docket No. 98-229 and CC Docket No. 95-116.

<sup>289</sup> See *CMRS LNP Forbearance Order* at ¶¶ 43-44; Number Utilization Study at 8, 20-21.

<sup>290</sup> See Number Utilization Study at 21.

<sup>291</sup> See Number Utilization Study at 21.

<sup>292</sup> See Number Utilization Study and NANP Exhaust Study.

<sup>293</sup> See, e.g., Letter from Lincoln E. Brown, SBC Communications, to Magalie Roman Salas, FCC, dated April 21, 1999, Attachment at 2 (SBC April 21, 1999, *ex parte*).

indicated that its efforts to project the impact of pooling on NANP exhaust are ongoing.<sup>294</sup> Nevertheless, we believe that careful review and further analysis of the NANPA's number exhaust projections are essential to our evaluation of the issue of pooling participation by different industry segments. We commend the NANC for initiating this process by establishing a team to review the NANPA's projections in detail and submit its findings to the NANC.<sup>295</sup> We encourage the NANC to submit any conclusions or recommendations that it may have regarding pooling, including pooling by CMRS carriers, based on the NANPA's projections or the team's findings. We also urge all participants in this proceeding to consider and comment on the Number Utilization Study and NANP Exhaust Study and any responses to the report as they pertain to CMRS participation in pooling.

166. If we were to extend thousands-block pooling requirements to covered CMRS providers, we seek comment on whether such requirements should be limited to specific NPAs or rate centers or whether they should apply to all NPAs located in the largest 100 MSAs. We also seek comment on the potential cost to covered CMRS providers if they are subject to pooling requirements. Assuming that they will have already incurred the cost of implementing LNP, what additional cost would be required to implement number pooling? Commenters should specifically address and, if possible, provide documentation of the incremental costs that would be incurred over and above the cost of LNP deployment.

167. We also seek comment on the timeframe that would be required for implementation of number pooling by covered CMRS providers following LNP deployment. As noted above, the NANC has estimated that deployment of thousands-block number pooling by wireline carriers that have already deployed LNP could occur within 10 to 19 months of a regulatory order establishing pooling requirements.<sup>296</sup> This estimate, however, is based in part on the estimated time required to select a pooling administrator and establish administrative procedures for the pooling process. Assuming that this process could be completed before the November 2002 deadline for CMRS LNP deployment, covered CMRS carriers would presumably not require as lengthy a time interval to initiate pooling, because the administrative infrastructure for pooling would already be in place. We seek comment on this assumption, and on the ability of covered CMRS carriers to participate in decisions regarding number pooling administration prior to their development of LNP capability. Commenters should also address whether there are any

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<sup>294</sup> The NANPA has indicated that its Number Utilization Study, which was submitted to NANC on Feb. 18, 1999, is preliminary and that its NANP Exhaust Study, which was submitted to NANC on April 22, 1999, does not incorporate the 1999 COCUS. *See* NANC Meeting Minutes, Feb. 17-18, 1999, at 12; NANP Exhaust Study at 1-4.

<sup>295</sup> The team was established at the Feb. 17-18, 1999, NANC meeting. *See* NANC Meeting Minutes, February 18-19, 1999. On May 3, 1999, the team issued its findings. *See* Report of the NANP Exhaust Team, May 3, 1999.

<sup>296</sup> *See supra* Section V.C.3.

other technical considerations and administration issues unique to covered CMRS carriers that could affect the timing of their participation in pooling.

168. In the *CMRS LNP Forbearance Order*, we noted that our decision to extend the LNP implementation deadline for covered CMRS providers to November 24, 2002, does not limit our ability to require CMRS participation in pooling at an earlier date, if doing so is deemed necessary to address specific number exhaust problems.<sup>297</sup> Some state regulatory agencies, such as the North Carolina Commission, argue that CMRS participation in pooling prior to November 2002 may be necessary in order for the public to realize the full benefits of pooling.<sup>298</sup> On the other hand, requiring CMRS carriers to participate in pooling earlier than November 2002 would require these carriers to accelerate their deployment of LNP technology, which would impose significant costs and burdens that we have concluded in the *CMRS LNP Forbearance Order* are not warranted for LNP purposes. In light of our decision to extend the deadline for CMRS implementation of LNP until November 2002, we seek comment on whether there is a need to consider such an accelerated schedule to address specific number exhaust problems. Specifically, commenters should address whether there are potential benefits from CMRS participation in pooling earlier than November 2002 that would be sufficient to justify the significant added cost and burden that would be borne by covered CMRS providers in deploying LNP architecture on an accelerated basis.

169. The second category of non-LNP-capable carriers consists of wireline and covered CMRS carriers outside the largest 100 MSAs, who will be required to deploy LNP at some time in the future only if and when they receive a request from a competing carrier. In the case of wireline carriers outside the largest 100 MSAs, such deployment could occur as early as July 1, 1999, if a request was received by January 1, 1999.<sup>299</sup> In the case of covered CMRS carriers outside the largest 100 MSAs, such deployment would not occur before May 22, 2003, under the timetable established by the *CMRS LNP Forbearance Order*.<sup>300</sup>

170. At present, it is not certain to what degree carriers in this category will be subject to requests to provide LNP in their own markets, or when such deployment will occur. It is unlikely, however, that deployment of LNP outside the largest 100 MSAs will be uniform. For example, in some instances, carriers outside the largest 100 MSAs may be requested to provide LNP only in certain switches, so that they will not necessarily have LNP capability throughout

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<sup>297</sup> *CMRS LNP Forbearance Order* at ¶ 48.

<sup>298</sup> See, e.g., North Carolina Commission comments at 3.

<sup>299</sup> See 47 C.F.R. § 52.23(c).

<sup>300</sup> See 47 C.F.R. § 52.31(a)(iv).

their service areas. It is also possible that widespread deployment of LNP in these markets will occur gradually over an extended period of time. In light of these uncertainties, we seek comment on the degree to which carriers in this category should be required to participate in any pooling regime we may establish for wireline or CMRS carriers in the largest 100 markets. Specifically, should a carrier that establishes LNP capability based on another carrier's request presumptively be required to participate in pooling? Alternatively, are there circumstances under which we should impose pooling obligations on carriers even if they have not received a request for LNP from another carrier?<sup>301</sup> To what extent should pooling obligations apply if the carrier's deployment of LNP is limited to certain switches rather than its entire service area?

171. Another potential factor that could affect the ability of covered CMRS carriers outside the largest 100 MSAs to participate in pooling is the requirement that CMRS carriers who deploy LNP be able to support nationwide roaming.<sup>302</sup> As a result of this requirement, covered CMRS carriers outside the largest 100 MSAs will need to make certain changes to their networks before November 24, 2002 so that they can support roaming by CMRS customers from the largest 100 markets who use ported numbers. These changes are not as extensive as those that would be required to implement LNP for their own customers, or to participate in number pooling. Nevertheless, we seek comment on whether implementing the network changes required to support roaming would affect the cost to CMRS carriers of implementing pooling, even if such carriers do not receive a request from a competing carrier to deploy LNP in their home markets.

172. The final category of non-LNP-capable carriers consists of wireless carriers outside the covered CMRS definition, who are not required to deploy LNP at all.<sup>303</sup> This category includes, among others, paging carriers, data-only services, and small SMR carriers who fall outside the covered CMRS definition because they do not provide switched-network mobile voice service with seamless handoff of calls. In the *Telephone Number Portability* proceeding, we concluded that these services should not be subject to LNP requirements because LNP implementation by these classes of carriers would have little impact on wireless-wireless or wireless-wireline competition.<sup>304</sup> Some of these classes of carriers, however, particularly paging

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<sup>301</sup> See discussion *supra* ¶ 145

<sup>302</sup> See 47 C.F.R. § 52.31(a)(2).

<sup>303</sup> 47 C.F.R. §§ 52.23, 52.31.

<sup>304</sup> See *Telephone Number Portability First Report and Order*, 11 FCC Rcd at 8352, 8433-38; *Telephone Number Portability, First Memorandum Opinion and Order on Reconsideration*, CC Docket No. 95-116, 12 FCC Rcd 7236, 7272 (1997) (*Telephone Number Portability First Memorandum Opinion and Order*); *Telephone Number Portability, Second Memorandum Opinion and Order on Reconsideration*, CC Docket No. 95-116, 13 FCC Rcd 21204, 21228-31 (1998) (*Telephone Number Portability Second Memorandum Opinion and Order*).

carriers, are significant users of numbering resources.<sup>305</sup> Therefore, even though they are not subject to LNP requirements, it is important to assess both the potential benefits and the cost of participation by these carriers in number pooling.

173. We seek comment on whether the need for numbering resource optimization warrants the participation in pooling by wireless carriers that are not included in the definition of covered CMRS providers. We recognize that extending pooling requirements to these carriers would impose significant costs and burdens that we have concluded in the *Telephone Number Portability* proceeding are not warranted for LNP purposes. Therefore, we believe that such requirements should not be extended to non-LNP-capable carriers without a substantial showing that their participation in pooling would have significant numbering optimization benefits that outweigh those costs. We seek comment on whether participation by these carriers in pooling is necessary to achieve our numbering resource optimization objectives.

174. As an alternative, we seek comment on the feasibility of numbering resource optimization methods that would enable non-LNP-capable carriers to participate in or approximate the effect of pooling without requiring them to develop LNP capability. For example, paging carriers currently receive allocations of numbers in thousands blocks through Direct Inward Dialing (DID) agreements. Under DID agreements, ILECs set aside blocks of numbers for paging carriers and route the numbers to them through PBX or Centrex trunks.<sup>306</sup> In some states, wireless service providers receive allocations of numbers in thousands blocks through NXX code sharing arrangements, which are similar to DID agreements, except that they do not involve the use of PBX or Centrex trunks.<sup>307</sup>

175. In addition, the Colorado Commission is considering a proposal that would enable rural LECs to receive numbers in thousands blocks by modifying their switches to query LNP-capable switches ("Colorado Rural LEC Proposal").<sup>308</sup> Under the Colorado Rural LEC Proposal,

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<sup>305</sup> Approximately ten percent of the total NXX code assignments are allocated to paging carriers. Number Utilization Study at 7.

<sup>306</sup> See Telephone Number Portability, *Notice of Proposed Rulemaking*, CC Docket No. 95-116, 10 FCC Rcd 12350, 12369-70 (1995) for a further description of DID. See also DICTIONARY OF PC HARDWARE AND DATA COMMUNICATIONS TERMS at <[http://www.oreilly.com/reference/dictionary/terms/D/Direct\\_Inward\\_Dialing.htm](http://www.oreilly.com/reference/dictionary/terms/D/Direct_Inward_Dialing.htm)>.

<sup>307</sup> NANC Report at § 15.11.

<sup>308</sup> See Colorado Telephone Numbering Task Force Report at § 5.7.1. See also letter from James U. Troup, Counsel for Bay Springs Telephone Company, Inc., Roanoke Telephone Company, Inc., National Telephone Company of Alabama, Inc., Crockett Telephone Company, Inc., Peoples Telephone Company, Inc., and West Tennessee Telephone Company, Inc., to Lawrence Strickling, FCC, dated Oct. 27, 1998, at 4 n.8, for a description of a similar method.

a small LEC could have, for example, only 400 telephone numbers assigned within the 0000-0999 block of an NPA-NXX, but it would have all 10,000 numbers associated with the NXX allocated to it. Since the numbers 1000-9999 associated with NXX would not be assigned, these numbers could be released to the pool administrator for allocation elsewhere in the rate center. The small LEC's switch could be programmed to handle calls from its own subscribers to telephone numbers in the 0000-0999 block that it retains, including vacant number treatment. The switch could also be programmed to direct calls initiated by the small LEC's own subscribers to telephone numbers in the 1000-9999 number block (which contains nine thousand-number blocks) to an LNP-capable switch, either to obtain the routing information so it could route the call itself, or to have the LNP-capable switch route the call. Calls coming to the LNP-capable switch to numbers that are within the 0000-0999 number block would be sent to the small LEC's switch. Calls to numbers in the 1000-9999 number block would be routed using a query to the LNP database to determine the appropriate LRN. We seek comment on the Colorado Rural LEC Proposal, DID agreements, NXX code sharing arrangements, and any other methods that would accomplish the goal of enabling non-LNP-capable carriers to participate in or approximate the effect of pooling without requiring them to develop LNP capability.

176. Finally, to the extent that non-LNP-capable carriers in a market are unable to use an "alternative" pooling method not based on LNP, it will be necessary to continue allocating numbers to these carriers in full NXX blocks while LNP-capable carriers in the same market may draw smaller blocks of numbers from the pool. This will require the establishment of a number allocation method that does not discriminate unfairly in favor of either pooling participants or non-pooling participants. We seek comment on how to establish such an allocation method and what its elements should be. In particular, we seek comment on how requests for numbering resources should be sequenced by the administrator to avoid unfair discrimination in favor of either pooling participants or non-pooling participants.

#### **D. Pooling Implementation Issues**

##### **1. Technical Issues**

177. *Thousands-Block Number Pooling Standards.* For wireline service providers, the Alliance for Telecommunications Industry Solutions (ATIS) T1S1.6 Working Group on Number Portability (T1S1.6) has developed the technical requirements that define the switch and number portability database requirements for thousands-block number pooling, within a rate area, using the LRN method of number portability.<sup>309</sup> Among other things, this document specifies the

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<sup>309</sup> See *Technical Requirements for Number Pooling (1000s Block) using Number Portability* (Technical Requirements for Number Pooling). The T1S1.6 Working Group, which is part of the American National Standards Institute (ANSI) Accredited Standards Committee-T1 Telecommunications, was created to develop

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network prerequisites that must be met for number pooling to function properly using LRN number portability.<sup>310</sup>

178. We seek comment on whether we should adopt the T1S1.6 proposed technical requirements for thousands-block pooling as the standard for a national pooling architecture or, in the alternative, whether we should direct the NANC to recommend technical standards for thousands-block pooling once such standards have been adopted by the American National Standards Institute (ANSI). In addition, we seek comment on whether there are any technical issues with respect to thousands-block number pooling that have not been identified, such as potential impacts to private branch exchange equipment, or that remain to be resolved, and whether it is necessary for the Commission to direct or request resolution of these issues.

179. *Public Safety Impacts.* Several entities have expressed concern about thousands-block pooling's impact on the provision of E911 services, and the need for upgrades and changes to E911 systems if pooling is implemented. For instance, the Colorado Commission has identified a potential problem if LNP, rate center consolidation, and number pooling are implemented simultaneously. The Colorado Commission is concerned that, as rate areas become consolidated and more numbers are ported between service providers, there could be routing delays for, or mishandling of, E911 calls.<sup>311</sup>

180. The National Emergency Number Association (NENA), however, in its comments on the NANC Report, states that number pooling is a better option than other numbering resource

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standards and requirements for number portability with the support of the Alliance for Telecommunications Industry Solutions (ATIS). See Accredited Standards Committee-T1 Telecommunications Procedures Manual at 21. Committee-T1 documents are available at <<http://www.atis.org>>.

<sup>310</sup> Technical Requirements for Number Pooling references T1S1.6 Technical Requirements for Number Portability for most of the network functions that are necessary for database and global title translations, operator services switching systems, and switching systems so thousands-block pooling can function properly. See ATIS T1S1.6 Working Group, Technical Requirements for Number Pooling at 5. Technical Requirements for Number Pooling, however, specifies a few additional number portability database and global title translation requirements. *Id.* at 16. These draft proposed Technical Requirements were distributed to voting ATIS Committee-T1 members for letter ballot, which closed January 28, 1999. See Standards Committee T1 Telecommunications letter to Mr. G.H. Peterson, Chairman, Committee-T1, Lucent Technologies, dated Feb. 1, 1999 (regarding T1 Letter Ballot LB 743, "Draft Proposed Technical Requirements-Number Pooling (1000s Block) using Number Portability"). Voting results and comments have been forwarded to the Committee-T1 Chairman. Upon completion of the procedures for voting, disposition of views and objections, and appeals, the proposed standards shall be submitted to the American National Standards Institute (ANSI) for consideration. See Accredited Standards Committee-T1 Telecommunications Procedures Manual at 14.

<sup>311</sup> See Colorado Commission comments at 10.

optimization methods, such as rate center consolidation or inconsistent rate centers.<sup>312</sup> In fact, the impact of thousands-block pooling on E911 systems has been assessed by the 911 Subcommittee of the Illinois Number Portability Workshop.<sup>313</sup> In addition, in Technical Requirements for Number Pooling, T1S1.6 did not specifically identify any impacts on the provision of E911 service associated with the implementation of thousands-block pooling.<sup>314</sup> Significantly, however, in Technical Requirements for Number Portability - Switching Systems, T1S1.6 recommends that routing numbers to which E911 calls are translated not be ported. This is because the call-back to a ported number is handled best whenever the call-back is over a dedicated trunk between the Public Safety Answering Point switch and the originating switch.<sup>315</sup>

181. We seek comment, then, on whether the NENA-recommended standards, as well as the T1S1.6 recommended restriction on the porting of E911 routing numbers, are sufficient to ensure the reliable provision of E911 service where thousands-block pooling is implemented. If commenters do not believe they are sufficient, we ask them to describe in detail what additional measures the Commission should take to ensure that calls to E911 are completed accurately and without delay.

## 2. Administration

182. Any nationwide implementation of thousands-block pooling will require detailed guidelines governing its administration. In the areas of administration of the NANP and LNP, certain industry groups, particularly the INC and Committee T1S1, have drafted guidelines and technical specifications that describe, in detail, the procedures to be followed both by administrators and those carriers requesting NANP resources or subject to number portability requirements.<sup>316</sup> We anticipate that a similar type of arrangement will exist in relation to administration of thousands-block pooling. Indeed, the INC has already drafted guidelines relating to the functioning of the Pooling Administrator and entities requesting numbering

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<sup>312</sup> See NENA comments at 7.

<sup>313</sup> See NANC Report at § 8.1 (Illinois Report on Number Pooling) identifying the impacts of implementing LNP on E911 systems. See also *NENA Recommended Standards For Service Provider Local Number Portability* (NENA-recommended standards).

<sup>314</sup> See ATIS T1S1.6 Working Group Technical Requirements for Number Pooling (1000s Block) using Number Portability at 18.

<sup>315</sup> See ATIS T1S1.6 Working Group Technical Requirements for Number Portability - Switching Systems at 48.

<sup>316</sup> See, e.g., NPA Assignment Guidelines; CO Code Guidelines; ATIS T1S1.6 Working Group Technical Requirements for Number Pooling (1000s Block) using Number Portability.

resources from the Pooling Administrator. We seek comment on whether this arrangement should be the model for thousands-block pooling administration.

183. The INC Guidelines propose a pooling architecture in which a Pooling Administrator functions essentially as another carrier, requesting numbering resources from the NANP in order to maintain a sufficient inventory of thousands blocks for allocation to carriers within a rate area.<sup>317</sup> Carriers desiring blocks of numbers within a rate area request those blocks from the Pooling Administrator, rather than the NANPA.<sup>318</sup> We seek comment on whether this general method of administration satisfies parties that may be taking numbers in thousands blocks from a pool as well as those that continue to take whole NXXs,<sup>319</sup> and, in particular, if this model sufficiently addresses concerns about the neutral administration of the numbering resource.

184. *Selecting a Pooling Administrator.* We seek comment on whether the NANPA should serve as thousands-block Pooling Administrator or whether the Commission should seek competitive bids in response to a request for proposal or requirements, as it did with respect to NANP administration.<sup>320</sup> Parties recommending that the Commission seek competitive bids on pooling administration should discuss the advantages of using the competitive bidding process and the specific criteria to be used in selecting a Pooling Administrator. Having determined that thousands-block pooling may appropriately be considered a numbering administration function, the NANC is currently assessing a proposal from the NANPA to add thousands-block pooling administration to its present duties.<sup>321</sup> We tentatively conclude we should ask the NANC for a recommendation regarding what entity should serve as the Pooling Administrator. We seek comment on whether the criteria used by the NANC to evaluate potential Pooling Administrators adequately addresses concerns of the industry, state regulators, and the public.<sup>322</sup> If not, we invite commenters to propose other criteria by which to judge potential Pooling Administrators.

185. Related to the question of who will recommend a potential Pooling Administrator

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<sup>317</sup> See Thousand Block Pooling Guidelines at §§ 5 & 8.3.3.

<sup>318</sup> See Thousand Block Pooling Guidelines at § 4.

<sup>319</sup> See discussion *supra* Section V.C.4.

<sup>320</sup> Administration of the North American Numbering Plan, *Report and Order*, CC Docket 99-237, 11 FCC Rcd 2588, 2616 (1995).

<sup>321</sup> See, e.g., NANC Meeting Minutes, March 16-17, 1999, at 14.

<sup>322</sup> See North American Numbering Council (NANC) North American Numbering Plan (NANP) Thousand Block Pool Administrator Requirements Document at § 4 (rev. Jan. 12, 1999). This document is available at <<ftp://ftp.atis.org/pub/nanpawg/oversite/require.doc>>.

and under what criteria will potential applicants be judged is the matter of the relationship between the Pooling Administrator and the NANPA and LNPA. Although there were two LNPAs initially, now all LNPA functions exist in one entity.<sup>323</sup> If the current NANPA is also chosen as the Pooling Administrator, all nationwide numbering administration functions will be concentrated in one entity. We seek comment on concerns raised by this possible hegemony over all nationwide number administration matters and whether we should seek a different entity to serve as the Pooling Administrator.

186. We also note that there may be certain advantages to simply adding pooling administration functions to the NANPA and LNPA. Thousands-block pooling administration involves matters of central office code administration in that the Pooling Administrator requests full NXX blocks from the NANPA as are necessary to maintain the inventory in the pools, but relies on the LNP architecture that is administered by the LNPA. Thus, because duties imposed on the NANPA as it administers central office code assignments may be reduced as a result of carriers requesting numbering resources from the Pooling Administrator, some cost savings may be realized in that area. We seek comment on the efficiencies that may be gained by allowing the current NANPA and LNPA to serve as the Pooling Administrator, and whether these efficiencies outweigh the concerns associated with the concentration of these duties in one entity.

187. *Reclamation of Thousands Blocks.* One aspect of pooling administration in particular raises questions regarding the competitive impact of thousands-block pooling on particular industry segments. Both the NANC Report and the INC Number Pooling Report contemplate a "donation" of thousands-blocks already assigned to a service provider to the pool.<sup>324</sup> Because a service provider may not be using all of the numbering resources allocated to it in a particular NXX code, donation of "uncontaminated" or lightly contaminated thousands-blocks in the NXX code could add significant numbering resources to number pools within an NPA.<sup>325</sup> The NANC and INC have proposed that carriers with thousands-blocks that are up to 10% contaminated should donate those blocks to a pool within a rate center.

188. MCI WorldCom and Ad Hoc have stated that the 10% level will work to excuse ILECs from having to contribute to the pool numbers from their "embedded base" of available

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<sup>323</sup> See *Telephone Number Portability Second Memorandum Opinion and Order*, 13 FCC Rcd at 21204.

<sup>324</sup> NANC Report at § 5.7.3; Thousand Block Pooling Guidelines at §§ 4.1, 8.1.4-8.1.8.

<sup>325</sup> A "contaminated block" of numbers, in relation to thousands-block number pooling, refers to a block of 1,000 numbers (*e.g.*, 3000-3999), in which at least one telephone number is not available for assignment. See Thousand Block Pooling Guidelines at § 14.0.

numbers.<sup>326</sup> Cox Communications states that there are relatively few thousands-blocks allocated to ILECs that do not have some numbers assigned from them, and as a consequence, it is unlikely that ILECs would return many blocks of numbers to a pool.<sup>327</sup> Cox also suggests that a contamination level of 25% may be more appropriate than 10%.<sup>328</sup> We seek comment on whether setting a 10% threshold contamination level will harm a particular segment of the industry.

189. To compensate for the perceived competitive advantage in favor of ILECs, MediaOne proposes that the contamination level for ILECs should be at least 25%, while 10% is appropriate for CLECs. MediaOne argues that this difference would help to ensure that ILECs and CLECs contribute to the industry pool in an equitable way.<sup>329</sup> We seek comment on MediaOne's proposed alternative. In addition, we seek comment on network capacity and SCP implications of setting a contamination level at 25%.

190. *Sequential number assignment.* Because a thousands-block pooling infrastructure will likely require some time to implement,<sup>330</sup> we seek comment on whether we should order some form of sequential number assignment prior to the actual implementation of pooling. By sequential number assignment, we envision a requirement that carriers assign numbers within individual thousands-blocks sequentially, and that, except where necessary to specific customer needs, they fill or substantially fill each thousands block before beginning to assign numbers from another block. Sequential number assignment from within thousands blocks has the potential to forestall other thousands blocks from becoming contaminated—and thus ineligible for possible donation to a pool—prior to implementation of pooling in a given area. Moreover, sequential number assignment may improve carrier efficiency in utilizing numbering resources, regardless of whether pooling is implemented. The INC Pooling Administration Guidelines require that prior to the pooling implementation date, carriers will be required to protect thousands blocks that are less than 10% contaminated.<sup>331</sup> BellSouth states that it supports voluntary sequential number

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<sup>326</sup> NANC Report at 116 (Minority Opinion of MCI WorldCom and Ad Hoc on 1000 Block Pooling).

<sup>327</sup> Cox comments at 3.

<sup>328</sup> Cox comments at 3 n.3.

<sup>329</sup> MediaOne comments at 9.

<sup>330</sup> The NANC Report estimates that thousands-block pooling could be implemented within 10 to 19 months following an FCC order. *See* NANC Report, Recommendation Regarding the Report of the Numbering Resource Optimization Working Group.

<sup>331</sup> *See* Thousand Block Pooling Guidelines at § 8.1.4.

assignment in areas in which number pooling is being deployed on a trial basis.<sup>332</sup> The California Commission states that it has required ILECs to assign numbers sequentially in certain areas.<sup>333</sup>

191. We seek comment in a number of areas regarding a possible requirement for the sequential assignment of numbers. Should sequential number assignment be limited to those areas in which pooling would be required within a certain amount of time? Should non-LNP capable carriers be required to assign numbers sequentially in anticipation of a pooling mandate at some future time? Should any decision to require sequential number assignment be left to state commissions, or are there consistency concerns that would be better addressed by adoption of a nationwide standard? What exceptions to a general requirement of sequential number assignment would have to be put in place to assure a service provider could meet the needs of a large customer or could respond to other types of customer requests or needs? Would sequential numbering cause undue burden to any particular industry segment, or create unnecessary customer inconvenience?

192. Finally, the Thousands Block Pooling Guidelines propose a nine-month inventory of numbers in both the industry inventory and service provider inventory. That is, the Pooling Administrator will attempt to maintain thousands-blocks sufficient for a nine-month inventory,<sup>334</sup> and each service provider may maintain sufficient resources within a pool to last for nine months.<sup>335</sup> We seek comment on whether these inventory levels are appropriate to assure adequate access to numbering resources, while avoiding potential waste of the resource by permitting numbers to lie unused for overly long periods of time.<sup>336</sup>

### 3. Cost Recovery

193. *Federal/State Jurisdiction.* Because we conclude that thousands-block number pooling is a numbering administration function, we tentatively conclude that section 251(e)(2) authorizes the Commission to provide the distribution and recovery mechanism for both intrastate and interstate costs of number pooling. In reaching this conclusion, we note that section 251(e)(2) expressly and unconditionally grants the Commission authority to ensure that carriers

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<sup>332</sup> See BellSouth comments at 18.

<sup>333</sup> See California Commission comments at 13.

<sup>334</sup> See Thousand Block Pooling Guidelines at § 8.0.

<sup>335</sup> See Thousand Block Pooling Guidelines at § 9.3.4.

<sup>336</sup> See NANC Report at 117 (Minority Opinion of MCI WorldCom and Ad Hoc on 1000 Block Pooling).

bear the costs of numbering administration on a competitively neutral basis.<sup>337</sup> Section 251(e)(2) states that carriers shall bear the costs of numbering administration "as determined by the Commission," and does not distinguish between numbering administration costs incurred in connection with intrastate calls and costs incurred in connection with interstate calls.<sup>338</sup> Thus, we tentatively conclude that section 251(e)(2) addresses both interstate and intrastate matters and overrides section 2(b)'s reservation of authority to the states over intrastate matters.<sup>339</sup> We seek comment on these tentative conclusions.

194. We tentatively conclude that an exclusively federal recovery mechanism for number pooling will enable the Commission to satisfy most directly its competitively neutral mandate, and will minimize the administrative and enforcement difficulties that might arise were jurisdiction over numbering administration divided. Further, such an approach obviates the need for state allocation of the shared costs of the number pooling administration, a task that would likely be complicated by the multistate nature of the databases to be used for thousands-block pooling implementation. Under the exclusively federal numbering administration cost recovery mechanism, we tentatively conclude that incumbent LECs' numbering administration costs, including costs incurred as a result of number pooling, will not be subject to jurisdictional separations. Instead, we will allow incumbent LECs to recover their costs under the federal cost recovery mechanism established in our final order in this proceeding. We seek comment on these tentative conclusions.

195. *Competitively Neutral Requirement.* Because we tentatively conclude that thousands-block pooling falls within the scope of numbering administration under section 251(e)(1), we also tentatively conclude that section 251(e)(2) requires that the costs of thousands-block pooling implementation be borne by all telecommunications carriers on a competitively neutral basis.<sup>340</sup> Our conclusion is based on the plain language of the statute together with the underlying goal of section 251(e)(2) to prevent the costs of numbering administration and number portability from themselves undermining competition. Parties that argue that the Commission has authority to exclude a class or classes of carriers from the costs of thousands-block pooling implementation should provide a detailed discussion of their position, including applicable statutory and regulatory authority. Commenters also should identify which class or classes of carriers should be excluded and why.

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<sup>337</sup> 47 U.S.C. § 251(e)(1); *see* In the Matter of Telephone Number Portability, CC Docket No. 95-116, *Third Report and Order*, 13 FCC Rcd 11701, 11719 (1998) (*Telephone Number Portability Third Report and Order*).

<sup>338</sup> 47 U.S.C. § 251(e)(2).

<sup>339</sup> 47 U.S.C. § 152(b).

<sup>340</sup> 47 U.S.C. § 251(e)(2).

196. Further, we tentatively conclude that, like number portability cost recovery,<sup>341</sup> principles for both the distribution and the recovery of thousands-block pooling implementation must be competitively neutral.<sup>342</sup> We tentatively conclude that an interpretation of section 251(e)(2) that permits the Commission to oversee both the distribution and the recovery of the costs of thousands-block pooling implementation best achieves the policy goal of ensuring the numbering administration costs overall, including thousands-block pooling costs, are not at odds with the pro-competitive goals of the Act. If the Commission ensured the competitive neutrality of only the distribution of costs, carriers could effectively undo the competitively neutral distribution scheme by recovering their costs only from other carriers. Moreover, we tentatively conclude that the two-part test adopted by the Commission to determine whether carriers will bear the interim and long-term costs of number portability<sup>343</sup> on a competitively neutral basis should be applied here. Specifically, the mechanism for recovering the costs of thousands-blocking pooling: (a) should not give one provider an appreciable, incremental cost advantage over another, when competing for a specific subscriber; and (b) should not have a disparate effect on competing providers' abilities to earn a normal return.<sup>344</sup> We seek comment on these tentative conclusions. Parties that oppose our conclusions should propose specific alternatives.

197. *Cost categories.* We tentatively conclude that thousands-block pooling administration involves three categories of costs: (1) costs incurred by industry as a whole (such as NANP administrator costs, and enhancements to the existing number portability regional database system<sup>345</sup>); (2) carrier-specific costs directly related to thousands-block pooling implementation (such as enhancements to carriers' SCP, LSMS, SOA, and OSS systems<sup>346</sup>); and (3) carrier-specific costs not directly related to thousands-block pooling implementation (such as unrelated upgrades to carriers' networks that happen as a result of thousands-block pooling implementation). We seek comment on these cost categories, and ask commenters to identify other categories of costs, if any, involved in thousands-block pooling implementation. To the extent other costs are identified, commenters should discuss who will incur such costs, for

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<sup>341</sup> See *Telephone Number Portability First Report and Order*, 11 FCC Rcd at 8352, 8419-21 (1996); *Telephone Number Portability Third Report and Order*, 13 FCC Rcd at 11731-32.

<sup>342</sup> 47 U.S.C. § 251(e)(2).

<sup>343</sup> See *Telephone Number Portability First Report and Order*, 11 FCC Rcd at 8419-21; *Telephone Number Portability Third Report and Order*, 13 FCC Rcd at 11731-32.

<sup>344</sup> *Id.*

<sup>345</sup> NANC Report at §§ 5.3.2.4, 5.3.2.13, 5.6.1.

<sup>346</sup> NANC Report at §§ 5.3.2.7 - 5.3.2.11, 5.6.3-5.6.4.

example, LECs, IXCs, CMRS providers, or others.

198. Although the NANC Report recommended that cost allocation and cost recovery issues be addressed by the appropriate regulatory agency<sup>347</sup> and Bell Atlantic, OPASTCO, SBC, and Teligent recommend that the Commission adopt cost recovery methods for any implementation of thousands-block pooling,<sup>348</sup> few parties commented on the costs associated with implementation of thousands-block pooling. SBC estimates that its general costs to implement thousands-block pooling will range from \$160 to \$190 million.<sup>349</sup> U S West estimates that its initial general implementation costs for 1999 will be in excess of \$65 million, including changes to its OSS, network modifications, and the creation of a new administrative process.<sup>350</sup> We seek further detailed estimates of the costs of thousands-block pooling, and ask that commenters separate any estimates by category of cost. In addition, we seek comment on the methodology used to develop these and other cost estimates, whether other parties have developed similar cost estimates, and whether the cost estimates account for avoided costs, such as savings from delay in the implementation of an expanded NANP. In particular, we also encourage comments from parties with knowledge of the costs incurred to implementing thousands-block pooling initiatives in the states of Illinois and New York.

199. We tentatively conclude that 251(e)(2)'s competitively neutral requirement applies only to the allocation and recovery of thousands-block pooling implementation costs, that is, shared industry costs and carrier-specific costs directly related to the implementation of thousands-block pooling, and not to carrier-specific costs not directly related to thousands-block pooling implementation (network upgrades). Based on the plain language of the statute, we tentatively conclude that costs not directly related to thousands-block pooling implementation, are not costs of thousands-block implementation. As with number portability, we expect costs not directly related to providing number pooling to encompass a wide range of costs that carriers incur to provide telecommunications functions unrelated to number pooling.<sup>351</sup> Because we tentatively conclude that costs not directly related to providing number pooling are not subject to section 251(e)(2), we also tentatively conclude that the Commission is not required to create special provisions by which those costs may be recovered and carriers may recover those costs in

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<sup>347</sup> NANC Report at § 5.3.2.17.

<sup>348</sup> Bell Atlantic comments at 4; OPASTCO comments at 3; SBC comments at 8; Teligent comments at 4.

<sup>349</sup> SBC asserts that its actual costs could be higher or lower depending on the Commission's final number pooling plan, ordered industry standards, and implementation schedule. *See* SBC April 21, 1999, *ex parte*.

<sup>350</sup> U S West asserts that detailed estimates are not possible now because of the large number of unknowns still associated with the thousands-block pooling process. U S West comments at 18-19.

<sup>351</sup> *Telephone Number Portability Third Report and Order*, 13 FCC Rcd at 11724.

any lawful manner consistent with their obligations under the Act. We seek comment on our tentative conclusions.

200. *Allocation and Recovery of Shared Industry Costs.* We tentatively conclude that the shared industry costs of thousands-block pooling implementation should be recovered through the existing NANPA formula. We note that the NANC Report reached the same conclusion.<sup>352</sup> We seek comment on this tentative conclusion.

201. The shared industry costs of thousands-block pooling implementation include, for example, modifications to the number portability regional databases to support thousands-block pooling. We tentatively conclude that a competitively neutral allocation of shared industry costs of thousands-block pooling implementation should allocate costs among all telecommunications carriers in proportion to each carrier's intrastate, interstate and international end-user telecommunications revenues. We conclude that the allocation among carriers based on end-user revenues will fulfill section 251(e)(2)'s requirement that "[t]he cost of establishing telecommunications numbering administration arrangements . . . shall be borne by all telecommunications carriers on a competitively neutral basis as determined by the Commission."<sup>353</sup> We also tentatively conclude that once a telecommunications carrier has been allocated its portion of the shared costs of thousands-block pooling implementation, the carrier shall treat that portion of its costs as a carrier-specific cost directly related to thousands-block pooling implementation. We seek comment on these tentative conclusions, and ask whether other methods would allocate shared industry costs on a more competitively neutral basis. Commenters that oppose our tentative conclusions should propose specific alternatives.

202. Further, we seek comment on whether the Commission has the authority to allocate the shared costs of thousands-block pooling implementation only to those carriers that receive thousands-blocks of numbers. For example, if incumbent LECs recover their costs of thousands-block pooling implementation through rate-of-return or price-cap adjustments, we seek comment on whether IXCs would be charged twice for the shared industry costs of thousands-block implementation -- once when the IXCs incur an allocated portion of the shared industry costs, and again when incumbent LECs recover their shared industry costs through access charges. We also ask commenters to address the impact of allocating shared industry costs only to carriers that receive numbering resources. Commenters should discuss whether such an allocation scheme meets the competitively neutral requirement of section 251(e)(2).

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<sup>352</sup> NANC Report at § 5.3.2.17.

<sup>353</sup> We also used end-user telecommunications revenues to allocate the shared regional database costs of number portability, the costs of which are also governed by section 251(e)(2). See *Telephone Number Portability Third Report and Order*, 13 FCC Rcd at 11725-26, 11754-55.

203. *Allocation and Recovery of Carrier-Specific Costs Directly Related to Thousands-Block Pooling Implementation.* Carrier-specific costs directly related to thousands-block pooling implementation include, for example, updating carriers' LSMS and interfaces to support thousands-block pooling. We tentatively conclude that carrier-specific costs directly related to thousands-block pooling implementation could be allocated in at least two ways: (a) individual carriers bearing and recovering their own costs of thousands-block pooling implementation; and (b) carriers adding their carrier-specific costs directly related to thousands-block pooling implementation to the shared industry costs. We tentatively conclude that it is competitively neutral for carriers to bear and recover their own carrier-specific costs directly related to thousands-block pooling implementation. We seek comment on these tentative conclusions.

204. Recognizing consumers' sensitivity to end-user charges, we tentatively conclude that incumbent LECs subject to rate-of-return or price-cap regulation may not recover their interstate carrier-specific costs directly related to thousands-block pooling implementation through a federal charge assessed on end-users. Instead, we tentatively conclude that incumbent LECs subject to rate-of-return or price-cap regulation should recover their carrier-specific costs directly related to thousands-block pooling implementation through the existing cost recovery mechanisms of rate-of-return or price-cap adjustments.<sup>354</sup> We also tentatively conclude that carriers not subject to rate regulation -- such as competitive LECs, CMRS providers, and non-dominant IXC's -- may recover their carrier-specific costs directly related to thousands-block pooling implementation in any lawful manner consistent with their obligations under the Act.<sup>355</sup> We seek comment on these tentative conclusions, and ask whether they meet section 251(e)(2)'s requirement that numbering administration costs must be borne on a competitively neutral basis.

205. Price cap regulation may affect carriers' ability to recover their costs under the methods described above, or other possible methods, because it restricts the flexibility with which price cap carriers may price various services. We seek comment, therefore, on how price cap carriers should be permitted to recover shared industry costs of thousands-block pooling implementation, carrier-specific costs directly related to thousands-block pooling implementation, and carrier-specific costs not directly related to thousands-block pooling implementation. In particular, we seek comment on whether price cap carriers should be permitted to treat exogenously any of the above thousands-block pooling implementation cost categories. We also seek comment on whether these costs, alternatively, should be placed in a new price cap basket or an existing basket. If parties recommend that such costs should be placed in an existing basket,

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<sup>354</sup> See Bell Atlantic comments at 4 (recommending that incumbent LECs recover thousands-block pooling implementation costs through exogenous adjustments to their access charges).

<sup>355</sup> Although generally not rate regulated, competitive LECs, CMRS providers, and IXC's—as telecommunications carriers—remain subject to the Communications Act and Commission rules.

we ask parties to identify which basket would be most appropriate.

206. As an alternative to recovering costs based on end-user revenues, as proposed above, we seek comment on whether pooling costs should be recovered through a per-number charge. Specifically, we seek comment on whether this approach may have advantages over a revenue-based cost recovery mechanism. For example, would such an approach allocate costs in proportion to quantity of numbering resources being held by each carrier and thus require carriers with larger quantities of numbering resources to make larger contributions to pooling costs than carriers with fewer resources? In addition, we seek comment on whether basing cost recovery on the quantity of numbers being held would discourage carriers from maintaining excessively large quantities of non-revenue generating numbers while rewarding carriers that efficiently use their numbering resources.

207. We also seek comment on whether tying cost recovery for pooling to the quantity of numbers held by each carrier would provide economic incentives to participate in the pooling process by donating excess blocks back to the pool. We seek comment on whether holding spare numbers creates a cost for such carriers for which they have no offsetting revenue and whether each carrier would balance the benefit of holding a block of unused numbers against the costs associated with cost recovery. We seek comment on whether this method of cost recovery would provide an incentive to return spare blocks of numbers for which there is no foreseeable need, and ask whether this method meets section 251(e)(2)'s competitively neutral requirement. We also seek comment on other recovery methods for thousands-block pooling implementation costs.

208. Finally, as discussed in section V.E, above, one possible solution to the numbering crisis is for us to simply establish thresholds for efficient use of numbering resources, but leave the choice of method for achieving these thresholds to individual carriers. Thus, we would require carriers to achieve certain utilization levels for their numbering resources within a given area, but we would not mandate that they implement any particular technical solution, such as participating in thousands-block number pooling, provided the mandatory threshold levels are achieved. If we allow carriers to choose the method for achieving compliance with the mandatory threshold levels, we tentatively conclude that carriers would bear their own implementation costs, whether they meet the mandatory threshold levels through thousands-block pooling implementation or by some other means. We seek comment on this tentative conclusion, and ask whether it complies with section 251(e)(2)'s competitive neutrality requirement.

209. *Allocation and Recovery of Carrier-Specific Costs Not Directly Relating to Thousands-Block Pooling Implementation.* We tentatively conclude that, whether or not the NANPA formula covers the costs of thousands-block pooling implementation, carrier-specific costs not directly related to thousands-block pooling implementation should be borne by individual carriers as network upgrades; as such, carrier-specific costs not directly related to thousands-block pooling implementation are not subject to the competitively neutral requirements

of section 251(e)(2). We seek comment on this tentative conclusion, and ask if there are alternative methods for recovering this type of cost.

210. *State Allocation and Recovery Mechanism.* As noted above, we tentatively conclude the determination of whether to implement thousands-block pooling in a given area may be made in several ways.<sup>356</sup> We tentatively conclude that the states' role in deciding on a cost distribution or recovery mechanism for thousands-block pooling implementation will depend on who decides whether to implement pooling in a given area. If we simply order that LNP-capable carriers engage in thousands-block number pooling in the largest 100 MSAs, we tentatively conclude that states must follow the cost distribution and cost recovery mechanism adopted by the Commission. If, on the other hand, we delegate to state utility commissions the decision-making authority as to whether to implement thousands-block pooling in any area, we tentatively conclude that we also will delegate to states the authority to implement a cost distribution and recovery mechanism, subject to our principles of the competitively neutral mandate of section 251(e)(2). Finally, if we allow state utility commissions to make the decision as to whether to opt in or out of a nationwide thousands-block pooling architecture on a regional basis, we tentatively conclude that we also will allow state utility commissions to choose whether to opt in or out of our cost distribution and recovery mechanism. If a state commission elects not to make the decision as to whether an area should opt in or out of a nationwide thousands-block pooling architecture, and we choose another entity to make the decision, we tentatively conclude that the state must follow our cost distribution and recovery mechanism. We seek comment on these tentative conclusions.

#### 4. Transition Issues

211. In commenting on the NANC Report, several parties suggested that, although ITN pooling constituted the most efficient manner in which to allocate numbering resources, due to the difficulty in implementing it both in terms of time and cost, thousands-block pooling should be implemented in the near term with a transition to ITN pooling to follow in the future.<sup>357</sup> Other parties assert that thousands-block pooling is not a "stepping stone" toward ITN pooling.<sup>358</sup>

212. Although we have tentatively concluded not to pursue ITN pooling,<sup>359</sup> we are

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<sup>356</sup> See *supra* ¶¶ 146-147.

<sup>357</sup> Madison comments at 2; MediaOne comments at 6; New Hampshire Commission comments at 4; New York Commission comments at 5.

<sup>358</sup> Ameritech comments at 21; Nextel comments at 12.

<sup>359</sup> See *supra* Section V.C.1.

interested in further study on the use of ITN pooling as a numbering resource optimization measure, as it appears to offer the greatest potential for eliminating, or nearly eliminating, "stranded" numbers that may be allocated to carriers in either an NXX code or a thousand-block of numbers, but are not assigned to individual customers. Because of the potential for ITN pooling to offer a more efficient use of numbering resources than thousands-block pooling, we seek comment on the possibility of migrating from a thousands-block pooling regime to an ITN pooling regime.

213. As a threshold matter, we seek comment on whether the benefits of moving to ITN pooling from thousands-block pooling outweigh whatever costs may be involved. We are also concerned that the implementation of thousands-block pooling not hinder a possible migration to ITN pooling. Therefore, we seek comment on what measures can be taken in implementing thousands-block pooling that could ease a transition to ITN pooling. We also seek comment on whether the costs of building thousands-block pooling systems that may allow for an easier transition to ITN pooling are not outweighed by the benefits of doing so, in terms of future cost savings in implementing ITN pooling.

214. We also seek comment on whether UNP can be used simultaneously with thousands-block pooling, or whether special considerations must be met for the two measures to coexist. If it appears that the costs of allowing UNP and thousands-block pooling to coexist outweigh the benefits, we seek comment on whether we should allow carriers to port numbers by mutual agreement among themselves prior to a mandate of pooling, or in areas in which pooling may never be mandated.

#### **E. Carrier Choice of Numbering Optimization Strategy**

215. In addressing potential numbering optimization solutions outlined above, we believe it is also important to consider whether there are incentive-based mechanisms that could be used to address the numbering crisis without the need for more intrusive or burdensome regulatory mandates on carriers. In Section IV, among other things, we sought comment on whether carriers should be required to meet certain utilization thresholds to obtain additional numbering resources. In preceding subsections of Section V, we sought comment on whether carriers should further be required to implement technical measures, both LNP-based and non-LNP based, that would promote more efficient allocation and use of numbering resources.

216. Here, we seek comment on whether we should simply establish thresholds for efficient use of numbering resources, but leave the choice of method for achieving these thresholds to individual carriers. Under this alternative, as discussed in Section IV,<sup>360</sup> we would

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<sup>360</sup> See discussion *infra* ¶¶ 64-67.

require carriers to achieve certain utilization levels for their numbering resources within a given area, but we would not mandate that they implement any particular technical solutions, such as thousand-block number pooling, so long as they achieved the mandatory levels. Thus, carriers would be able to meet prescribed utilization thresholds by choosing the optimization method or methods that are most suitable to their situation, including participation in number pooling, or simply returning excess codes. We particularly encourage commenters to address whether and to what extent these alternatives would further the objectives of this proceeding.<sup>361</sup>

217. The principal advantage to this proposal is that it encourages carriers to arrive at their own solutions to the problem of number exhaust rather than requiring the Commission to select and impose regulatory requirements that may prove more burdensome or less beneficial than anticipated. If, over time, certain methods of numbering optimization prove more effective than others, or if certain methods or combinations of methods suit local conditions better than others, a "carrier choice" alternative could give carriers greater flexibility to adopt whatever method works best. This alternative also limits the need for regulatory intervention by the Commission: although the Commission would be responsible for enforcing carriers' utilization obligations, the manner in which carriers fulfilled those obligations would be left largely up to the carriers themselves.

218. Allowing carriers to choose among numbering optimization methods also raises certain issues, however. One potential concern is that carrier choice could reduce the effectiveness of certain numbering optimization methods because fewer carriers would be required to implement them. For example, if carriers with high utilization rates elected not to participate in thousand-block number pooling, they would be unable to draw available thousand-blocks from number pools formed by carriers that have opted to pool because of their low utilization rates. Thus, even though high-utilization carriers would be unlikely to *contribute* numbers to thousand-block number pools in any event, their *drawing* additional numbering resources in the traditional fashion could leave many potential numbers, on an absolute basis, stranded and unavailable for assignment by other carriers. We seek comment on the degree to which carrier choice could reduce the potential effectiveness of certain optimization strategies, particularly thousands-block number pooling.

219. Another potential concern on which we seek comment is how to establish an appropriate utilization rate that is competitively neutral to all participants in the telecommunications marketplace that require numbering resources. We seek comment on what

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<sup>361</sup> These objectives include ensuring access to numbering resources for all service providers that need them, to prolong the life of the NANP, to minimize the negative impact on consumers, to impose the least cost possible on a competitively neutral basis while yielding the highest benefit, to ensure that no class of carrier or customer is unduly favored or disfavored, and to minimize incentives for warehousing or hoarding of numbers. *See supra* ¶ 6.

an appropriate rate would be. Setting a relatively high rate applicable to all carriers would presumably create greater incentives for carriers to increase the efficiency of their use of numbering resources, and would likely lead to broader participation in number pooling, including participation by carriers that have already achieved comparatively high utilization rates. On the other hand, setting a uniform rate at too high a level, particularly at the outset, could impose undue burdens on carriers and limit the flexibility of carriers to choose numbering optimization methods that are most suitable to their particular circumstances. This is particularly true of competitive LECs (CLECs), which typically have low utilization rates given their nascency in the marketplace compared to the more established ILECs.

220. One way to balance these considerations might be to start with a utilization rate that is reasonably consistent with current levels of usage and adjust it upward over time. This would give carriers more flexibility to plan their strategies for using numbering resources more efficiently, and to increase their efficiency on a gradual basis. Another possibility might be to establish differing utilization rates for different classes of carriers. We question, however, whether such a system would be competitively neutral. Therefore, we seek comment on whether a utilization rate should apply across the board, or whether different rates could be set depending on the class of carrier. If we mandate a uniform utilization rate that imposes a disparate impact on different types of carriers, we seek comment on whether this system would be competitively neutral. Alternatively, we seek comments on whether mandating different utilization rates for different classes of carriers would be competitively neutral. Finally, we invite comment on the feasibility of equalizing utilization rates among the various classes of carriers if those rates start out at different thresholds.

221. We seek comment on the implementation of this approach, including how to determine an appropriate initial utilization rate and how quickly the rate should rise over time. Because gathering baseline data on current utilization rates is critical to the success of this proposal, we also seek comment on how quickly this proposal could be implemented, how quickly we could reasonably expect carriers with low utilization rates to meet successively higher thresholds, and how the timetable for such increases would affect their likely choices of numbering optimization methods. We also seek comment on the penalties for operating in an area without having achieved a threshold fill rate.<sup>362</sup>

222. Another variable to consider as part of the carrier choice alternative is the relevant area in which utilization rates would apply and the geographic basis on which they would be calculated. We seek comment on whether utilization rates should be based on individual NXXs, rate centers, NPAs, states, or the entire region or regions served by a service provider. One advantage of setting a larger area is that it encourages high levels of number utilization across

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<sup>362</sup> See *supra* Section IV.F.

many different boundaries. Another is that it may encourage rate center consolidation. Setting a smaller area as the relevant region, however, may be more feasible for carriers serving vastly different regions, and could also take into account differences between regions, such as the number of competing carriers in an area and the number of rate centers in an area. In addition, we seek comment on whether utilization rates should vary based on the likely overall demand for numbers. For example, a lower utilization rate -- or no requirement at all -- may be appropriate in less densely populated areas of the country where demand for numbers is not high and area code relief may not be required for years. Similarly, in areas where there are few competing carriers that require numbering resources, there might be no useful purpose to establishing utilization thresholds even under a carrier choice regime. Thus, we seek comment on how to adapt the carrier choice alternative to variable local market conditions.

223. We recognize that the carrier choice alternative may serve as a substitute for some of the other optimization measures outlined above, and also as a supplement to other measures. For example, it appears that for the carrier choice plan to function effectively, certain measures, like the reporting and utilization thresholds outlined above, would need to be put in place prior to implementing carrier choice.<sup>363</sup> Other numbering optimization measures, such as pooling, may be substituted, however, by the carrier choice plan. That is, while carrier choice requires threshold fill levels be met, it does not necessarily result in a mandate of thousands-block pooling for all carriers. We seek comment on what measures outlined above would be a predicate for enacting a carrier choice regime. We also seek comment on the impact that adopting a carrier choice alternative would have on cost recovery for numbering resource optimization, as discussed in Sections IV.H and V.D.3.

224. Finally, we seek comment on the role of the Commission and state authorities if this alternative were adopted. Because this approach would largely leave number optimization solutions up to individual carriers, regulation of numbering at both the state and federal level would presumably be less intrusive than if these solutions were imposed on a mandatory basis. Nevertheless, we must still consider the respective roles of federal and state authority in implementing this alternative. We seek comment on whether carrier choice should be governed by federal standards or whether we should delegate authority to the states to establish utilization rates and timetables that would apply to carriers under their jurisdiction. We also seek comment on the respective roles that this Commission and the states should play in sanctioning carriers that do not achieve the requisite utilization rates.

## VI. PRICING OPTIONS

225. An alternative approach for improving the allocation and utilization of numbering

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<sup>363</sup> See *supra* Sections IV.C and IV.D.

resources would be to require carriers to pay for the numbering resources that they request or receive. This approach could be used in isolation or in combination with the administrative and numbering optimization approaches discussed in previous sections. Below, we seek comment on both the theoretical and practical issues related to using pricing to allocate optimally numbering resources.

226. Unlike most other resources used by the telecommunications industry, numbering resources are administratively allocated rather than sold -- that is, they are priced at zero. The poor utilization of numbering resources that we have experienced in recent years may be in part due to administrative allocation rules that fail to recognize the economic value of numbers.<sup>364</sup> If a pricing mechanism for allocating numbering resources were instituted, carriers would likely seek ways of using numbers more efficiently. We recognize that, in the short term, it is probably not feasible to replace our existing numbering allocation mechanism with a pricing allocation mechanism, but we nonetheless believe it is important to consider price-based mechanisms as a possible long-term alternative to administrative numbering allocation and as a supplement to or substitute for mandatory numbering optimization measures such as pooling and rate center consolidation.

227. As a matter of business and economics, telecommunications carriers request NXX codes when they expect the incremental benefits of having an additional code to exceed the cost of acquiring that code. At the current price of zero, even inconsequential benefits can justify a request for an additional NXX code. Moreover, carriers have little incentive to seek ways of improving the utilization of their current pool of numbers. Changing the method of allocating numbers from one that relies on administrative rules to one that is price-based can provide needed incentives to foster the efficient utilization of numbers. As the cost of holding numbering resources increases, carriers will seek ways of reducing their numbering resource costs. For example, they may look for ways of increasing the utilization of existing stocks of numbers by engaging in number pooling and other optimization measures. These activities will decrease the demand for new NPAs and extend the life of the NANP. In areas where numbering resources are being rationed, i.e., NPAs that are in jeopardy, a pricing system could ensure that remaining numbering resources are allocated to those carriers and end users that need and value them the most.

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<sup>364</sup> The inefficiency of the existing numbering resource allocation approach can be seen by looking at current utilization rates. At the end of 1998, 207 geographic area codes had been assigned for use within the U.S. by the NANPA. *See* Number Utilization Study at 4. Each area code has 792 NXX codes that are assignable to carriers and each NXX code has 10,000 numbers that can be assigned to end users. Thus, at the end of 1998, the 207 geographic area codes assigned in the United States yielded 163,944 available NXX codes. 96,168 of these NXX codes had been assigned by the end of 1998. *Id.* at 7. Within these assigned NXX codes, there are 961,680,000 available individual telephone numbers. According to data provided by the NANPA, approximate 34% of available numbers (328.3 million telephone numbers out of 961.68 million) are assigned. *Id.* at 7.

228. We seek comment, generally, on the legal issues involved in establishing a pricing mechanism for numbering resources. Section 251(e)(2) of the Act provides that the costs of numbering administration arrangements and number portability shall be borne by carriers on a competitively neutral basis as determined by the Commission.<sup>365</sup> We seek comment on whether this delegation of statutory authority to the Commission is sufficiently broad to allow us to establish a pricing mechanism that would be based on the market value of numbering resources to carriers, or whether its scope is limited to recovery of administrative costs related to numbering administration. We also seek comment on whether we have general authority to establish price-based mechanisms for number allocation based on our plenary jurisdiction over numbering issues in the United States under section 251(e)(1) of the Act.<sup>366</sup> In the alternative, if necessary, should we seek such authority?

229. Assuming that we have statutory authority to establish a pricing mechanism for numbering resources, we seek comment on whether there are any public policy reasons not to do so. For example, could we achieve increased efficiency in numbering usage through refinements and reform of existing administrative allocation mechanisms? In particular, we seek comment on arguments that have been raised against using prices to allocate numbering resources. One such argument is that numbers are a public resource that can not be owned, and that establishing a pricing mechanism would turn numbers into a private commodity. We agree that numbers are a public resource, although this is not necessarily an argument against requiring payment for their use, much as payments are required for other public resources, including radio spectrum and public lands. Consequently, the charges we envision for numbering resources would be more akin to license or rental arrangements rather than outright ownership of numbers. We seek comment on whether a license-type arrangement would be consistent with our long-held view that numbers are a public resource. If we were to permit a charge for numbering resources, should such a charge be monthly, annual, or multi-year? We also seek comment on whether a two-tier pricing system would be preferable. Under a two-tier pricing system we envision a flat charge and variable charge for every NXX code. The purpose of the flat charge would be to discourage carriers from requesting more numbers than they need. Without such a charge, carriers may have the expectation that they could return excess numbers to the NANPA without incurring material costs. We seek comment on these observations.

230. Another consideration in determining whether to establish prices for numbers is that the added cost and administrative burden to carriers may inhibit competitive entry if it imposes a disproportionate burden on new entrants. We recognize that requiring carriers to pay for numbers would impose costs on all carriers, but seek comment on whether these costs might

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<sup>365</sup> 47 U.S.C. § 251(e)(2).

<sup>366</sup> 47 U.S.C. § 251(e)(1).

pose a particular challenge for new entrants that require numbering resources simply to establish a presence in a market. To assess this burden fairly, however, one must compare it to the societal costs imposed on carriers and subscribers by the current allocation system, including the potential impact on competitive entry in markets that are facing or will soon face numbering exhaust. We believe that, even if some carriers will have more difficulty than others paying a market-based price for numbers, this outcome does not necessarily mean that the use of a pricing mechanism will be discriminatory or anti-competitive. To the contrary, so long as there are no distortions in the market, the pricing of numbering resources should be competitively neutral. In addition, pricing numbering resources may actually aid competitive entry by discouraging carriers from amassing excessively large inventories of numbers, thereby ensuring that an adequate supply of numbering resources is available to all service providers. We seek comment on these issues, and on what measures would be needed to ensure competitive neutrality in using a pricing mechanism to allocate numbering resources.

231. We also seek comment on the possible components of a pricing mechanism for allocating numbers. There appear to be two basic approaches for setting a "price" for numbering resources: administratively determined pricing and market-based pricing. An administratively determined pricing system could, for example, be based on a traditional cost-based pricing mechanism, where the "price" of numbering resources would be limited to levels that are required to recover industry related numbering costs. Alternatively, it could be based on total societal costs. A market-based mechanism, on the other hand, permits prices to be determined by both the supply and demand for numbering resources. As discussed in more detail below, the rate of increase in the supply of numbers, for example, could be set based on achieving a prescribed life for each NPA and the market could then be permitted to determine the price for each NXX code.<sup>367</sup> Depending on market conditions, such market-based prices can be higher or lower than they would be under an administratively determined pricing system.

232. With respect to administratively determined pricing approaches, a traditional cost-based pricing mechanism would focus on the costs incurred by the telecommunications industry in rolling out numbering resources, including costs associated with reprogramming switches and purchasing new equipment. Prices based on cost recovery, however, exclude any consideration of the costs imposed on the rest of society when new numbers are rolled out. These costs range from those associated with changing business cards and stationery to those associated with NANP exhaust.<sup>368</sup> Since the societal cost of numbering exhaust should exceed the direct industry costs of activating individual NPAs, pricing based on traditional cost recovery may result in too low a

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<sup>367</sup> See Martin L. Weitzman, *Prices vs. Quantities*, 44 (4) REV. ECON. STUD. 477 (1974).

<sup>368</sup> See discussion *supra* Section III.

price to encourage efficient conservation of numbers.<sup>369</sup> For this reason, we believe that a more expansive definition of cost must be used if we were to adopt an administratively determined pricing mechanism. Our view is supported by the NANC, which has stated that the goal of national numbering optimization policy should be to minimize total societal costs and impacts.<sup>370</sup> We seek comment on the relative advantages and disadvantages of using an administratively determined pricing mechanism for numbering resources. More specifically, we seek comment on the types of costs that should be recovered. For example, commenters should address whether prices for numbers should be set to recover the cost of implementing a new NPA or the cost of expanding the NANP, as well as how these types of costs can best be estimated. We also seek comment on whether a traditional cost-based system can yield prices that are sufficient to encourage carriers to utilize numbers efficiently and what should be done if there is more demand for numbering resources than there is available supply at the administratively set price.

233. Under a market-based approach, on the other hand, prices could be set by an auction-like process in each market and would vary from one time period to another and from one market to another depending on the supply and demand conditions in each market. We seek comment generally on how such a market-based pricing mechanism could be structured and implemented. We also seek comment on whether a market-based pricing mechanism can be designed to reflect fully the total private and societal cost of numbering resources. As we indicated above, the costs associated with numbering exhaust in a particular NPA extend beyond the costs incurred by industry, end users, and state commissions in that specific location. Because there are a finite number of area codes in the ten-digit NANP, each area code that is activated leaves one less that could be used in another part of the country, or in the other countries that participate in the NANP. Thus, a properly designed market-based pricing mechanism should take into account all societal costs, including the cost of NANP exhaust.

234. We believe one way of recognizing and addressing the societal cost of eventual NANP exhaust would be to prescribe a life for NPAs and to release NXX codes at a rate that corresponds to this life. The price of NXX codes could be increased to reflect higher societal costs by lengthening the expected lives of NPAs or could be reduced to reflect lower societal

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<sup>369</sup> Because numbering resources are a shared finite resource, the societal cost (cost to all users of the NANP) of activating a new NPA will exceed the costs incurred by the carriers and subscribers in the region that implements it. Specifically, the direct costs exclude any consideration of the cost of expanding the NANP. When societal costs exceed direct costs, implementation of a price-based allocation system must include a mechanism that includes societal costs that are external to the directly affected parties. These external costs are commonly called externalities.

<sup>370</sup> See, e.g., NRO Working Group Mission Statement, attachment to letter from Alan Hasselwander, NANC Chairman, to Kathryn C. Brown, Chief, Common Carrier Bureau, dated September 23, 1998.

costs by shortening prescribed lives. We request comment on whether controlling the release of NXX codes in each market provides a reasonable mechanism for reflecting all relevant societal costs associated with numbering resource use. Commenters are asked to identify other approaches that could be used to ensure that a market-based pricing system reflected the full societal cost of numbering resources.

235. By permitting the price of numbering resources to float depending on the relative supply and demand for numbers in each market, carriers will have an incentive to use newly activated numbers, as well as previously assigned numbers efficiently. We seek comment on the types of procedures and safeguards that would have to be employed for a market mechanism to operate efficiently and in a non-discriminatory manner. For example, how could we prevent the price of NXX codes from fluctuating widely from month to month in the same market or rising to levels that might discourage competitive entry? We also seek comment on whether and how previously assigned numbers should be priced. Efficiency would require that all numbers, whether previously assigned or currently available for assignment, reflect their current market value. Otherwise, there will be little incentive for carriers to improve their utilization of existing stocks of numbers. Moreover, incumbent carriers would have a distinct competitive advantage over new entrants if they had large stocks of numbers for which they did not have to pay the current market price. We also seek comment on whether a secondary market for numbers should be permitted. We believe that this would facilitate improved use of existing stocks of numbers and would facilitate the most efficient use for all numbers.

236. In spite of the differences between administratively determined and market-based pricing mechanisms, implementation of both must begin with a proper definition of the geographic area(s) in which the prices will apply. For an administratively determined pricing system, the geographic area will be determined by a definition of which costs will be reflected in the price for numbers. In a market-based pricing system, the area in which carriers compete for available numbering resources can be used to define a single market. Commenters are requested to address the above distinction and provide suggestions on how geographic areas under each mechanism should be defined. Our initial impression is that the area covered by each NPA represents a separate geographic area under both mechanisms. We note that NXX codes can be located anywhere within the NPA from which they are assigned but cannot be moved between NPAs. Thus, NXX codes in different NPAs logically could have different prices because they have different cost and demand characteristics. NXX codes in Wyoming, for example, can be expected to have a different price than NXX codes from a New York City or Long Island area code. Alternatively, the geographic area could be defined as broadly as the nation or as narrowly as a rate center. We seek comment on the appropriate geographic area for administratively determined or market-based pricing mechanisms and whether this market should be defined broadly or narrowly.

237. If we were to adopt either an administratively determined or a market-based

pricing mechanism, we seek comment on what should be done with revenues generated by this type of allocation system. One possibility would be to use the funds primarily to offset all costs associated with numbering such as administration, pooling, and rate center consolidation. With respect to rate center consolidation, revenues could be used to cover all transitional costs incurred by local exchange carriers, subscribers, Public Safety Answering Point service providers, and others. Another possibility is that we could substitute numbering revenues for other funds used to finance existing telecommunications programs. It is possible, however, that Congress will require all funds that are collected to be turned over to the U.S. Treasury.

238. We recognize that adopting an administratively determined or market-based allocation mechanism for numbering resources raises significant transitional issues that could adversely impact some carriers early on. Specifically, carriers would have to review their numbering use practices and adjust them to take into account an explicit cost for these resources. If we were to adopt such a mechanism, we seek comment on what a feasible time frame for implementing it would be, and whether this decision should affect our thinking about number optimization methods discussed elsewhere in this Notice that could be implemented in the interim. We believe that gradual implementation of a price-based allocation mechanism would be preferable to a flash-cut change because this would allow carriers time to make necessary changes in institutional arrangements and/or implement procedures that encourage efficient numbering resource use.

239. Therefore, we seek comment on what types of transitional pricing mechanisms and transitional safeguards could be used during a gradual implementation of either an administratively set or market-based pricing mechanism. For an administratively set pricing mechanism, we could establish a low initial price designed to recover a specified portion of costs and over time gradually increase that price to recover all relevant costs. For a market-based pricing system, we could set an initial price cap at the average cost of activating a new NPA in the existing NANP. That cap could be gradually increased until it approximated the average cost of activating a new NPA in an expanded NANP. We also seek comment on how long such caps should be kept in place. One possibility is to permanently retain a cap based on the long run average cost of activating a new NPA in an expanded NANP. Alternatively, we could gradually move away from any cap. We seek comment on the use of a cap to limit prices during the transition, how we should set the cap, and whether the cap should be permanent. One of the problems with setting a cap is that if it is set too low, demand for numbers may exceed supply at the capped price and administrative allocation controls such as rationing will be also required. We seek comment on the procedures we might adopt to address or avoid those situations.

240. Finally, we have previously suggested that synergies exist between establishing a price for numbers and number conservation measures. We seek comment on the potential synergies between a price-based allocation system for numbers and certain of the other number optimization measures discussed in this Notice. We believe that charging for the use of numbers

would improve the effectiveness of several of the mechanisms contained in this Notice and that optimization measures such as number pooling and rate center consolidation, in turn, would make a price-based allocation system more effective. For example, pooling would reduce the size of the number blocks that a carrier would need to acquire in order to establish a service footprint, thereby making the numbers more affordable to small or new entrants and promoting competition. We request commenters to indicate which of the other numbering resource optimization measures discussed in this Notice would work in conjunction with a pricing mechanism. Commenters should also address whether the economic incentives provided by pricing numbering resources would be sufficient to encourage the industry to undertake these optimization measures on their own or whether at some level, regulatory authorities would still have to mandate the implementation and enforcement of such measures.

## VII. AREA CODE RELIEF

### A. Introduction

241. In Sections IV, V and VI above, we have sought comment on various numbering optimization methods that focus on conservation of numbering resources within each area code that is activated for use. By maximizing efficient use of numbers within area codes, we reduce the need to introduce new area codes, which can help prevent premature exhaust of the existing NANP. We recognize, however, that the adoption of any of these numbering resource optimization measures does not eliminate the need for states to continue to implement area code relief in those area codes that are approaching depletion. As discussed in Section III.A above, the rapid increase in area code consumption throughout the country may lead to the creation of approximately 68 new area codes by the year 2000 through the implementation of geographic splits and overlays.<sup>371</sup> In this section, we seek comment on what action the Commission can take to assist states in implementing area code relief in a manner that is consistent with any other numbering resource optimization measures that we may adopt in this proceeding.

### B. Background

242. As outlined in Section III.A., state commissions have the authority to implement appropriate forms of area code relief, as delegated by the Commission in the *Local Competition Second Report and Order*.<sup>372</sup> Under Section 52.19 of the Commission's rules,<sup>373</sup> states can introduce new area codes through the use of: (1) an area code overlay, which occurs when a new

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<sup>371</sup> See Number Utilization Study at 5.

<sup>372</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19512.

<sup>373</sup> 47 C.F.R. § 52.19.

area code is introduced to serve the same geographic area as an existing area code; (2) a geographic split, which occurs when the geographic area served by an area code is split into two or more geographic parts and one part maintains the old area code and one (or more) receive a new area code; or (3) an area code boundary realignment, which occurs when the boundary lines between two adjacent area codes are shifted to allow unassigned NXX codes in one area code to be used in another area code for which few or no NXX codes are left for assignment.

243. In the *Local Competition Second Report and Order*, the Commission emphasized that its delegation of authority to the states for implementing area code relief is subject to the Commission's guidelines for numbering administration.<sup>374</sup> The Commission reiterated the guidelines that it had set forth in a declaratory ruling on Ameritech's area code relief plan for Chicago ("*Ameritech Order*"),<sup>375</sup> stating that numbering administration 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 a particular industry segment or group of consumers; and (3) not unduly favor one technology over another.<sup>376</sup> The Commission also clarified its numbering administration guidelines with respect to how area code overlays can be lawfully implemented. First, the Commission prohibited all service-specific or technology-specific overlays because it found that such overlay plans would be unreasonably discriminatory and would unduly inhibit competition.<sup>377</sup> Second, the Commission concluded that, if a state commission chooses to implement an all-services area code overlay, the all-services overlay plan must include: (1) mandatory ten-digit local dialing by all customers between and within area codes in the area covered by the new code; and (2) availability to every existing telecommunications carrier, including CMRS providers, authorized to provide telephone exchange service, exchange access, or paging service in the affected area code 90 days before the introduction of a new overlay area code, of at least one NXX in the existing area code, to be assigned during the 90-day period preceding the introduction of the overlay.<sup>378</sup> The Commission stated that imposing these conditions on the implementation of all-services overlay plans would

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<sup>374</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19512.

<sup>375</sup> See Proposed 708 Relief Plan and 630 Numbering Plan Area Code by Ameritech - Illinois, *Declaratory Ruling and Order*, 10 FCC Rcd 4596 (1995) (*Ameritech Order*). In the *Ameritech Order*, the Commission concluded that Ameritech's proposed wireless-only overlay plan would be unreasonably discriminatory and anticompetitive in violation of Sections 201(b) and 202(a) of the Act, 47 U.S.C. §§ 201(b), 202(a).

<sup>376</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19516-17, as codified in the Commission's rules, 47 C.F.R. § 52.9(a).

<sup>377</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19518.

<sup>378</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19518.

ensure that competitors, including small entities, do not suffer competitive disadvantages.<sup>379</sup>

244. In the *Local Competition Second Report and Order*, the Commission stated that if a state acts inconsistently with federal numbering guidelines designed to ensure the fair and timely availability of numbering resources to all telecommunications carriers, parties wishing to dispute a proposed area code plan may file a petition for declaratory ruling, rulemaking, or other appropriate action with the Commission.<sup>380</sup> In a subsequent order in CC Docket 96-98, the Commission granted in part a petition for declaratory ruling challenging an area code relief plan of the Pennsylvania Public Utility Commission, ruling that certain of the actions mandated in the plan exceeded the scope of authority that the FCC had delegated to state commissions and unduly disfavored carriers that could not participate in certain of the measures ordered.<sup>381</sup> The Commission, however, elected to delegate additional authority to state commissions to order NXX code rationing in conjunction with area code relief decisions, in the absence of industry consensus on a rationing plan.<sup>382</sup> In addition, the Commission encouraged state commissions to seek further limited delegations of authority to implement other innovative number conservation methods.<sup>383</sup>

245. The Connecticut Department of Public Utility Control ("Connecticut Commission"), the Massachusetts Department of Telecommunications and Energy ("Massachusetts Commission"), and the California Public Utilities Commission and the People of the State of California ("California Commission") have filed petitions to amend or waive the Commission's rules prohibiting technology-specific or service-specific overlays so that they can implement such overlays.<sup>384</sup> In addition, the Florida Public Service Commission ("Florida

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<sup>379</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19518-19.

<sup>380</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19520.

<sup>381</sup> *Pennsylvania Numbering Order*, 13 FCC Rcd at 19031, 19035-37.

<sup>382</sup> *Pennsylvania Numbering Order*, 13 FCC Rcd at 19025-26. The Commission specified that state commissions may exercise such additional authority if they have decided on a specific form of area code relief and established an implementation date. See 47 C.F.R. § 52.19(a).

<sup>383</sup> *Pennsylvania Numbering Order*, 13 FCC Rcd at 19009, 19030.

<sup>384</sup> See Connecticut Department of Public Utility Control Files Petition for Rulemaking, Public Comment Invited, *Public Notice*, RM No. 9258 (rel. 1998) (Connecticut Petition); Common Carrier Bureau Seeks Comment on Massachusetts Department of Telecommunications and Energy Petition for Waiver to Implement a Technology-Specific Overlay in the 508, 617, 781, and 978 Area Codes, *Public Notice*, DA 99-460, (rel. March 4, 1999) (Massachusetts Petition); Common Carrier Bureau Seeks Comment on a Petition of the California Public Utilities Commission and the People of the State of California for a Waiver to Implement a Technology-Specific or Service-Specific Area Code, *Public Notice*, NSD File No. L-99-36, DA 99-929 (rel. May 14, 1999) (California Petition).

Commission"), the Maine Public Utilities Commission ("Maine Commission"), the Massachusetts Commission, the New York Department of Public Service ("New York Commission"), and the California Commission have requested additional delegated authority to implement other number conservation methods such as thousands-block pooling.<sup>385</sup>

### C. Discussion

246. As discussed in Section VII.A above, the Commission has delegated authority to the states to implement area code relief measures, subject to the Commission's numbering administration guidelines. In general, numbering administration should promote entry into the communications marketplace by making numbering resources available on an efficient and timely basis, should not unduly favor or disadvantage a particular industry segment or group of consumers, and should not unduly favor one technology over another. In applying these principles, the Commission specifically prohibited technology-specific or service-specific overlays and required that all-services overlays be accompanied by implementation of mandatory ten-digit dialing.<sup>386</sup>

247. In this section, we seek comment on whether the Commission, to facilitate the maximum optimization of numbering resources, should amend its existing guidelines or develop additional guidelines for area code relief. First, we seek comment on the advantages and disadvantages of geographic splits, the approach most commonly used by states to accomplish

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Pleadings filed in response to these public notices will be incorporated into the record for this proceeding.

<sup>385</sup> See Common Carrier Bureau Seeks Comment on a Petition of the California Public Utilities Commission and the People of the State of California for Delegation of Additional Authority Pertaining to Area Code Relief and to NXX Code Conservation Measures, *Public Notice*, NSD File No. L-98-136, DA 99-928 (rel. May 14, 1999); Common Carrier Bureau Seeks Comment on the Florida Public Service Commission's Petition for Authority to Implement Number Conservation Measures, *Public Notice*, NSD File No. L-99-33, DA 99-725 (rel. April 15, 1999); Common Carrier Bureau Seeks Comment on the Maine Public Utilities Commission's Petition for Additional Authority to Implement Number Conservation Measures, *Public Notice*, NSD File No. L-99-27, DA 99-638 (rel. April 1, 1999); Common Carrier Bureau Seeks Comment on Massachusetts Department of Telecommunications and Energy Request for Additional Authority to Implement Various Area Code Conservation Methods in the 508, 617, 781, and 978 Area Codes, *Public Notice*, NSD File No. L-99-19, DA 99-461 (rel. March 5, 1999); Common Carrier Bureau Seeks Comment on New York Department of Public Service Petition for Additional Authority to Implement Number Conservation Methods, *Public Notice*, NSD File No. L-99-21, DA 99-462 (rel. March 5, 1999); Common Carrier Bureau Seeks Comment on a Petition of the California Public Utilities Commission and the People of the State of California for an Additional Delegation of Authority to Conduct NXX Code Rationing, *Public Notice*, NSD File No. L-98-136, DA 99-108 (rel. Jan. 6, 1999). These petitions for additional authority will be addressed in separate proceedings.

<sup>386</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19518.

area code relief.<sup>387</sup> Second, we seek comment on whether area code overlays may be preferable to geographic splits from a numbering resource optimization perspective, and whether the Commission should consider modifying the conditions it has imposed on the use of all-services overlays. Third, we seek comment on whether we should reexamine our prohibition of service-specific or technology-specific overlays, and whether there may be numbering resource optimization benefits that warrant modifying or lifting this prohibition under some circumstances.

248. *Geographic Splits.* In most cases, states create new area codes through the implementation of geographic splits. The NANC Report identified a number of advantages of a geographic split as a measure of area code relief, including the following: customers will be able to associate an NPA with a unique geographic area; any given customers' premises will be served by one NPA; customers maintain intra-NPA seven-digit dialing; and equal availability of unassigned NXXs in both the new and the old NPA to all industry segments.<sup>388</sup> The NANC Report also identified a number of disadvantages of a geographic split as a measure of area code relief.<sup>389</sup> First, geographic splits require approximately half of the subscribers in the existing NPA to change to the new NPA. As a result, these subscribers may incur additional costs, including disruption to users due to the need for reprogramming CPE and changes made to stationary and advertising. Second, because geographic splits require approximately half of the subscribers in the existing NPA to change to a new NPA, successive geographic splits would create substantial costs for subscribers, thus increasing the consequences associated with inaccurately forecasting growth versus non-growth areas.

249. We seek comment on the advantages and disadvantages of geographic splits relative to other methods of area code relief from a numbering optimization perspective. We also seek comment on whether there is a need for additional rules or guidelines at the federal level with respect to the implementation of geographic splits by state authorities. For example, if a split has recently been implemented, should there be any limitations or conditions on implementing another split as opposed to an overlay in the same area within a certain time frame? Are there other circumstances in which limitations or conditions on splits might be warranted such as following rate center consolidations, rollout of service provider number portability, or implementation of number pooling in an NPA? Alternatively, should we direct that the implementation of splits be accompanied by other numbering optimization initiatives to ensure that numbering resources in both the new and the pre-existing area code are used efficiently? If so, which of the methods

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<sup>387</sup> See NPA Relief Activities, *supra* note 200 (indicating that of approximately 100 recent and pending area code relief activities, 80 are or will be splits).

<sup>388</sup> NANC Report at § 14.

<sup>389</sup> NANC Report at § 14.

discussed in previous sections are most suitable?

250. *All-Services Overlays.* The NANC Report identified a number of advantages of all-services overlays as a method of area code relief.<sup>390</sup> First, from a numbering optimization perspective, an all-service overlay creates a new numbering resource that is available for use throughout the entire geographic area covered by the old NPA code. As a result, the consequences associated with inaccurately forecasting growth versus non-growth areas may be reduced. Second, because overlays only affect the assignment of new numbers, existing consumers are not required to change their telephone numbers. This advantage is particularly significant in areas where there is a need for frequent area code relief because subsequent prospective all-services overlays can also be implemented without requiring existing consumers to change their telephone numbers.

251. The NANC Report also identified a number of disadvantages of all-services overlays.<sup>391</sup> First, customers must use ten-digit dialing for calls in their own area, both to call numbers that use the overlay area code and, pursuant to the Commission's mandate, to call numbers within their own area code.<sup>392</sup> Thus, although an overlay does not require existing customers to change their own telephone numbers, it leads to additional costs associated with ten-digit dialing and it reduces the ability of customers to identify geographic areas with specific NPAs.<sup>393</sup> Second, if an all-services overlay is implemented on a prospective basis (i.e., no existing customers are reassigned to the new NPA), it does not free up new numbering resources within the existing NPA. Thus, new entrants in a market are less likely to be able to obtain numbers in the existing NPA, and therefore may be less able to compete effectively against incumbents for customers desiring numbers in the existing NPA. The introduction of LNP, however, may mitigate the disadvantage to new entrants, because customers with numbers in the pre-overlay NPA will have the option of porting their numbers if they elect to obtain service from a new competitor.

252. We seek comment on the advantages and disadvantages of all-services overlays relative to other methods of area code relief from a numbering resource optimization perspective. In particular, we seek comment on the cost of implementing all-services overlays relative to other methods of area code relief and how this cost varies depending on whether the overlay is implemented on a prospective basis and whether other overlays have previously been implemented

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<sup>390</sup> NANC Report at § 12.1.

<sup>391</sup> NANC Report at § 12.1.

<sup>392</sup> *Local Competition Second Report and Order*, 11 FCC Rcd at 19518.

<sup>393</sup> NANC Report at § 12.1.

for the relevant area. We also seek comment on whether there is a need to modify our existing guidelines with respect to the implementation of all-services overlays. For example, should we retain the requirements concerning ten-digit dialing or are there numbering resource optimization benefits that would justify allowing states to implement overlays without this condition? Also, as in the case of geographic splits, commenters should address whether the implementation of overlays should be accompanied by other numbering resource optimization initiatives to ensure that numbering resources in both the new and the pre-existing area code are used efficiently. We also seek comment on the relative impact of splits versus overlays on the deployment and potential benefits of LNP. For example, if the geographic area covered by an NPA is reduced because of a split, could this reduce opportunities for customers to port their numbers that would have existed otherwise?

253. Another possible overlay option is the use of so-called "reverse" overlays, which involve the creation of a single area served by two or more existing NPAs when a previously established NPA boundary is eliminated. For example, the Public Utility Commission of Texas has deployed reverse overlays in the Dallas area (214/972) and the Houston area (713/281).<sup>394</sup> The NANC Report notes that such an overlay plan can be especially useful in areas where the NPAs from the previous split are exhausting unevenly and relief is necessary in one but not the other.<sup>395</sup> We seek comment on this alternative.

254. We also seek comment on how the size of an all-services overlay area would affect the advantages and disadvantages discussed above. Although all overlay area codes implemented to date have used the same geographic boundaries as the underlying area codes, there is no requirement that they be limited in this respect. For example, the NANC Report identifies an "expanded NPA overlay" proposal that would implement an overlay covering a region that is larger than an existing NPA.<sup>396</sup> Potentially, use of such expanded overlay area codes could have significant numbering resource optimization benefits, because it would allow for use of a single area code to provide relief to multiple existing codes. Moreover, allocating new numbering resources over a larger geographic region than existing NPAs would give states enhanced flexibility to accommodate demand for numbers in high-growth areas that may not correspond to

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<sup>394</sup> See Public Utility Commission of Texas Petition for Expedited Waiver of 47 C.F.R. Section 52.19(c)(3)(ii) for Area Code Relief, *Order*, 13 FCC Rcd 21798 (Com. Car. Bur. 1998) (granting the Texas Commission a waiver of the ten-digit dialing requirement in section 52.19(c)(3)(ii) for a period not to exceed six months from the date of implementation of the reverse overlays).

<sup>395</sup> NANC Report at § 12.2.

<sup>396</sup> NANC Report at § 12.3. We also note that the Georgia Public Service Commission implemented an expanded NPA overlay for the 770 and 404 NPAs in Atlanta. See North American Numbering Plan Planning Letter, PL-NANP-102, Nov. 21, 1997. This document is available at <<http://www.nanpa.com>>.

existing area code boundaries. Creation of expanded area codes would also raise complex rating and billing issues, however, because the overlay NPA would have a larger calling area than the underlying NPAs it overlaps.

255. We seek comment on the feasibility of expanded area overlays as a means of allocating new numbering resources to areas facing exhaust of existing NPAs. In particular, we seek comment on the practicality of this approach in light of its potential effect on rating and billing of calls between the overlay NPA and underlying NPAs. We also seek comment on whether there are any practical limits to the size of overlay NPAs. For example, should we consider the possibility of regional NPAs that cover NPAs in multiple states, or even national NPAs established for overlay purposes? If we were to consider this approach, should the Commission assume responsibility for implementation of such codes, or should it delegate authority to the states to enter into agreements with one another for purposes of establishing multi-state overlay area codes?

256. *Service-Specific and Technology-Specific Overlays.* As noted above, the Commission has prohibited service-specific and technology-specific overlays, initially in the *Ameritech Order* and then more broadly in the *Local Competition Second Report and Order*. In the *Ameritech Order*, we rejected a wireless-only overlay plan proposed by Ameritech for the 708 area code on the grounds that it would be unreasonably discriminatory and would unduly inhibit competition. Specifically, we were concerned about several facets of Ameritech's area code relief plan: the proposal to continue assigning 708 numbers to wireline carriers but to exclude paging and cellular carriers from such assignments; the proposal to require paging and cellular carriers to take back 708 numbers previously assigned to their subscribers, while wireline carriers would not be required to do so; and the proposal to assign all numbers to paging and cellular carriers exclusively from the existing 312 and the new 630 area codes, while wireline carriers (and perhaps others) would continue to receive 708 numbers.<sup>397</sup> We found that Ameritech's plan would place paging and cellular companies at a distinct competitive disadvantage because their customers would suffer the cost and inconvenience of having to surrender existing numbers and go through the process of reprogramming their equipment, changing over to new numbers, and informing callers of their new numbers.<sup>398</sup> We also found that any numbering resource optimization benefits from this plan were outweighed by the disproportionate burden that the plan would place on paging and cellular carriers.<sup>399</sup>

257. We continue to believe that service-specific or technology-specific overlays raise

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<sup>397</sup> *Ameritech Order*, 10 FCC Rcd at 4605, 4607-09, 4610-12.

<sup>398</sup> *Ameritech Order*, 10 FCC Rcd at 4608.

<sup>399</sup> *Ameritech Order*, 10 FCC Rcd at 4608.

serious competitive issues that must be carefully considered for the reasons stated in our prior orders. Nonetheless, in light of the increased urgency of the numbering crisis and the broader issues raised in this proceeding, we believe it is appropriate at least to reexamine our policies with respect to service-specific and technology-specific overlays, and to consider whether we should modify or lift the restriction on these area code relief methods. Do technology-specific and service-specific overlays yield potential numbering resource optimization benefits that would not also result from implementation of an all-services overlay? To what extent would concerns about the discriminatory impact of service or technology-specific overlays be mitigated if such overlays were prospective only and did not involve the taking back of numbers from existing customers? Commenters should also address whether technology-specific and service-specific overlays could yield potential new benefits that were not previously contemplated. For example, in the event that the wireless industry were to move to "calling party pays" (CPP) as a pricing option,<sup>400</sup> could use of wireless-specific area codes provide a means to notify wireline customers that they are making a chargeable call to a wireless number?

258. We also seek comment on whether there are particular services or technologies that could be assigned numbers from a technology or service-specific overlay code without raising the competitive concerns that we cited with respect to Ameritech's wireless-overlay proposal. In their respective petitions, Connecticut and Massachusetts argue that service-specific or technology-specific overlays would not produce anti-competitive effects if there is no existing or likely competition between the industry segment using the service/technology that is targeted by the overlay and the industry segment using the service/technology that is unaffected by the overlay.<sup>401</sup> We seek comment on this assertion, and on what non-competing services or technologies, if any, would meet this standard.

259. We further seek comment on how a technology-specific or service-specific overlay could be implemented in a manner that would promote our number optimization objectives. Because wireless carriers often require, on average, fewer NXXs than wireline carriers to serve the same size geographic footprint, technology-specific or service-specific overlays that cover the same geographic scope as pre-existing NPAs might decrease, rather than increase, the efficiency with which numbering resources are used. These circumscribed service-specific overlays would provide wireless carriers serving the area with many more NXX codes than they need, which would, at the same time, be unavailable to wireline carriers that need them. Therefore, we seek

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<sup>400</sup> See generally *Calling Party Pays Service Option in the Commercial Mobile Radio Services, Notice of Inquiry*, WT Docket No. 97-207, 12 FCC Rcd. 17693 (1997) (initiating an inquiry to explore the subject of calling party pays (CPP) in order to develop a record for determining whether the wider availability of CPP would enable CMRS providers to compete more readily with wireline services provided by LECs, and for determining whether there are actions that the Commission could take to promote the wider availability of CPP for CMRS providers).

<sup>401</sup> Connecticut Petition at 10-11; Massachusetts Petition at 5.

comment on whether technology-specific or service-specific overlays should only be implemented on an expanded or regional basis.

260. We also seek comment on the relationship between technology-specific or service-specific overlays and other numbering resource optimization methods discussed above, such as number pooling. For example, if we were to adopt pooling requirements for LNP-capable carriers, should we consider allowing the creation of overlay area codes specifically for carriers that are not LNP-capable? Arguably, this would ensure that non-LNP capable carriers continue to have access to numbering resources in markets where existing area codes are in jeopardy, while increasing the potential availability for pooling of codes in existing NPAs. On the other hand, segregating LNP-capable and non-LNP capable carriers by area code assignment could have a discriminatory impact on users of the overlay code, and could inhibit the ability of non-LNP capable carriers to compete with LNP-capable carriers. We seek comment on the relative costs and benefits of this alternative.

261. Finally, to the extent that we consider any modification of our prohibition on service-specific and technology-specific overlays, we seek comment on whether we should consider exceptions to the current prohibition on a case-by-case basis or whether we should adopt general rules and guidelines. We also seek comment on whether we should address requests for service-specific and technology-specific overlays at the federal level, or whether we should delegate authority to the states to establish service-specific and technology-specific overlays within federal rules or guidelines.

## VIII. PROCEDURAL MATTERS

### A. *Ex Parte* Presentations

262. This matter shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.<sup>402</sup> Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required.<sup>403</sup>

### B. Initial Paperwork Reduction Act Analysis

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<sup>402</sup> See Amendment of 47 C.F.R. 1.1200 et seq. Concerning Ex Parte Presentations in Commission Proceedings, *Report and Order*, 12 FCC Rcd 7348, 7356-57 (1997) (citing 47 C.F.R. 1.1204(b)(1)).

<sup>403</sup> See 47 C.F.R. § 1.1206(b)(2), as revised.

263. This Notice of Proposed Rulemaking (Notice) contains either a proposed or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this Notice, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Public and agency comments are due at the same time as other comments on this Notice; OMB comments are due 60 days from date of publication of this Notice in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

### C. Initial Regulatory Flexibility Act Analysis

264. Pursuant to the Regulatory Flexibility Act (RFA),<sup>404</sup> the Commission has prepared the following Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules in this Notice. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of the Notice, and should have a separate and distinct heading designating them as responses to the IRFA. The Commission shall send a copy of this Notice, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with the RFA.<sup>405</sup>

265. *Need for and Objectives of the Proposed Rules.* The Commission is issuing this Notice to seek public comment on how best to create national standards for numbering resource optimization. In doing so, we seek to: (1) ensure sufficient access to numbering resources for all service providers that need them to enter into or to compete in telecommunications markets; (2) avoid, or at least delay, exhaust of the NANP and the need to expand the NANP; (3) minimize the negative impact on consumers; (4) impose the least cost possible, in a competitively neutral manner, while obtaining the highest benefit; (5) ensure that no class of carrier or consumer is unduly favored or disfavored by our numbering resource optimization efforts; and (6) minimize the incentives for building and carrying excessively large inventories of numbers.

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<sup>404</sup> See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et seq.*, was amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

<sup>405</sup> 5 U.S.C. § 603(a)

266. *Legal Basis.* The proposed action is authorized under sections 1, 4(i) and (j), 201, 208, and 251 of the Communications Act of 1934, as amended.<sup>406</sup>

267. *Description and Estimate of the Number of Small Entities That May Be Affected by this Notice.* The RFA requires that an initial regulatory flexibility analysis be prepared for notice-and-comment rulemaking proceedings, unless the agency certifies that "the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities."<sup>407</sup> The RFA generally defines "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."<sup>408</sup> In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.<sup>409</sup> A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>410</sup>

268. In this IRFA, we consider the potential impact of this Notice on all users of telephone numbering resources. The small entities possibly affected by the proposed rules, if adopted, include wireline, wireless, and other entities, as described below. The SBA has defined a small business for Standard Industrial Classification (SIC) categories 4,812 (Radiotelephone Communications) and 4,813 (Telephone Communications, Except Radiotelephone) to be small entities having no more than 1,500 employees.<sup>411</sup> In the FRFA to the *Universal Service Order*, we described and estimated in detail the number of small entities that would be affected by the new universal service rules.<sup>412</sup> Although some affected incumbent local exchange carriers (ILECs)

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<sup>406</sup> 47 U.S.C. §§ 151, 154(i), 154(j), 201, and 251(e).

<sup>407</sup> 5 U.S.C. § 605(b).

<sup>408</sup> *Id.* § 601(6).

<sup>409</sup> *Id.* § 601(3) (incorporating by reference the definition of "small business concern" in Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

<sup>410</sup> Small Business Act, 15 U.S.C. § 632.

<sup>411</sup> 13 C.F.R. § 121.201.

<sup>412</sup> Federal-State Joint Board on Universal Service, *Report and Order*, CC Docket No. 96-45, 12 FCC Rcd 8776, 9227-9243 (1997) (*Universal Service Order*), as corrected by Federal-State Joint Board on Universal Service, *Erratum*, CC Docket No. 96-45, FCC 97-157 (rel. June 4, 1997), *appeal pending sub nom. Texas Office of Public Utility Counsel v. FCC and USA*, No. 97-60421 (5th Cir. 1997).

may have 1,500 or fewer employees, we do not believe that such entities should be considered small entities within the meaning of the RFA because they are either dominant in their field of operations or are not independently owned and operated, and therefore by definition not "small entities" or "small business concerns" under the RFA. Accordingly, our use of the terms "small entities" and "small businesses" does not encompass small ILECs. Out of an abundance of caution, however, for regulatory flexibility analysis purposes, we will separately consider small ILECs within this analysis and use the term "small ILECs" to refer to any ILECs that arguably might be defined by the SBA as "small business concerns."<sup>413</sup>

269. The most reliable source of information regarding the total numbers of certain common carrier and related providers nationwide, as well as the numbers of commercial wireless entities, appears to be data the Commission publishes annually in its *Carrier Locator: Interstate Service Providers Report (Locator)*.<sup>414</sup> These carriers include, *inter alia*, local exchange carriers, competitive local exchange carriers, interexchange carriers, competitive access providers, satellite service providers, wireless telephony providers, operator service providers, pay telephone operators, providers of telephone toll service, providers of telephone exchange service, and resellers.

270. *Total Number of Companies Affected.* The U.S. Bureau of the Census (Census Bureau) reports that, at the end of 1992, there were 3,497 firms engaged in providing telephone services, as defined therein, for at least one year.<sup>415</sup> This number contains a variety of different categories of carriers, including local exchange carriers, interexchange carriers, competitive access providers, cellular carriers, mobile service carriers, operator service providers, pay telephone operators, personal communications services providers, covered specialized mobile radio providers, and resellers. It seems certain that some of those 3,497 telephone service firms may not qualify as small entities or small ILECs because they are not "independently owned and operated."<sup>416</sup> For example, a PCS provider that is affiliated with an interexchange carrier having more than 1,500 employees would not meet the definition of a small business. It is reasonable to conclude that fewer than 3,497 telephone service firms are small entity telephone service firms or

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<sup>413</sup> See 13 C.F.R. § 121.201, SIC code 4813. Since the time of the *Local Competition* decision, 11 FCC Rcd 15499, 16144-45 (1996), 61 FR 45476 (Aug. 29, 1996), the Commission has consistently addressed in its regulatory flexibility analyses the impact of its rules on such ILECs.

<sup>414</sup> FCC, *Carrier Locator: Interstate Service Providers* at 1-2. This report lists 3,604 companies that provided interstate telecommunications service as of December 31, 1997 and was compiled using information from Telecommunications Relay Service (TRS) Fund Worksheets filed by carriers (Jan. 1999).

<sup>415</sup> U.S. Department of Commerce, Bureau of the Census, *1992 Census of Transportation, Communications, and Utilities: Establishment and Firm Size*, at Firm Size 1-123 (1995) (*1992 Census*).

<sup>416</sup> See generally 15 U.S.C. § 632(a)(1).

small ILECs that may be affected by the proposed rules, if adopted.

271. *Local Service Providers.* There are two principle providers of local telephone service; ILECS and competing local service providers. Neither the Commission nor the SBA has developed a definition for small providers of local exchange services (LECs). The closest applicable definition under the SBA rules is for telephone communications companies other than radiotelephone (wireless) companies.<sup>417</sup> According to data set forth in the *FCC Statistics of Communications Common Carriers (SOCC)*, 34 ILECs have more than 1,500 employees.<sup>418</sup> We do not have data specifying the number of these carriers that are either dominant in their field of operations or are not independently owned and operated, and thus are unable at this time to estimate with greater precision the number of ILECs that would qualify as small business concerns under the SBA's definition. Consequently, we estimate that fewer than 1,376 ILECs are small entities that may be affected by the proposed rules, if adopted.

272. *Competitive Local Service Providers.* This category includes competitive access providers (CAPs), competitive local exchange providers (CLECs), shared tenant service providers, local resellers, and other local service providers. Neither the Commission nor the SBA has developed a definition of small entities specifically applicable to competitive local service providers. The closest applicable definition under the SBA rules is for telephone communications companies other than radiotelephone (wireless) companies.<sup>419</sup> According to the most recent *Locator* data, 145 carriers reported that they were engaged in the provision of competitive local service.<sup>420</sup> We do not have data specifying the number of these carriers that are not independently owned or operated, and thus are unable at this time to estimate with greater precision the number of competitive local service providers that would qualify as small business concerns under the SBA's definition. Consequently, we estimate that there are fewer than 145 small entity competitive local service providers that may be affected by the proposed rules, if adopted.

273. *Providers of Toll Service.* The toll industry includes providers of interexchange services (IXCs), satellite service providers and other toll service providers, primarily resellers. Neither the Commission nor the SBA has developed a definition of small entities specifically applicable to providers of toll service. The closest applicable definition under the SBA rules is for

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<sup>417</sup> *Id.*

<sup>418</sup> *SOCC* at Table 2.9.

<sup>419</sup> 13 C.F.R. § 121.201, SIC code 4813.

<sup>420</sup> *Locator* at 1-2

telephone communications companies other than radiotelephone (wireless) companies.<sup>421</sup> According to the most recent *Locator* data, 164 carriers reported that they were engaged in the provision of toll services.<sup>422</sup> We do not have data specifying the number of these carriers that are not independently owned and operated or have more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of toll providers that would qualify as small business concerns under the SBA's definition. Consequently, we estimate that there are fewer than 164 small entity toll providers that may be affected by the proposed rules, if adopted.

274. In addition, an alternative SBA standard may apply to satellite service providers. The applicable definition of small entity generally is the definition under the SBA rules applicable to Communications Services, Not Elsewhere Classified (NEC). This definition provides that a small entity is expressed as one with \$11.0 million or less in annual receipts.<sup>423</sup> According to the Census Bureau, there were a total of 848 communications services providers, NEC, in operation in 1992, and a total of 775 had annual receipts of less than \$9,999 million.<sup>424</sup> The Census report does not provide more precise data.

275. *Resellers.* This category includes toll resellers, operator service providers, pre-paid calling card providers, and other toll service providers. Neither the Commission nor the SBA has developed a definition of small entities specifically applicable to resellers. The closest applicable SBA definition for a reseller is a telephone communications company other than radiotelephone (wireless) companies.<sup>425</sup> According to the most recent *Locator* data, 405 carriers reported that they were engaged in the resale of telephone service.<sup>426</sup> We do not have data specifying the number of these carriers that are not independently owned or operated, and thus are unable at this time to estimate with greater precision the number of resellers that would qualify as small business concerns under the SBA's definition. Consequently, we estimate that there are fewer than 405 small entity resellers that may be affected by the proposed rules, if adopted.

276. *Wireless Telephony and Paging and Messaging.* Wireless telephony includes cellular, personal communications service (PCS) or specialized mobile radio (SMR) service

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<sup>421</sup> 13 C.F.R. § 121.201, SIC code 4813.

<sup>422</sup> *Locator* at 1-2.

<sup>423</sup> 13 C.F.R. § 120.121, SIC code 4899.

<sup>424</sup> *1992 Economic Census Industry and Enterprise Receipts Size Report*, Table 2D, SIC code 4899 (U.S. Bureau of the Census data under contract to the Office of Advocacy of the U.S. Small Business Administration).

<sup>425</sup> 13 C.F.R. § 121.201, SIC code 4813.

<sup>426</sup> *Locator* at 1-2.

providers. Neither the Commission nor the SBA has developed a definition of small entities applicable to cellular licensees, or to providers of paging and messaging services. The closest applicable SBA definition for a reseller is a telephone communications company other than radiotelephone (wireless) companies.<sup>427</sup> According to the most recent *Locator* data, 732 carriers reported that they were engaged in the provision of wireless telephony and 137 companies reported that they were engaged in the provision of paging and messaging service.<sup>428</sup> We do not have data specifying the number of these carriers that are not independently owned or operated, and thus are unable at this time to estimate with greater precision the number that would qualify as small business concerns under the SBA's definition. Consequently, we estimate that fewer than 732 carriers are engaged in the provision of wireless telephony and fewer than 137 companies are engaged in the provision of paging and messaging service.

277. The SBA has developed a definition of small entities for cable and other pay television services, which includes all such companies generating \$11 million or less in revenue annually.<sup>429</sup> This definition includes cable systems operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems and subscription television services. According to the Census Bureau data from 1992, there were 1,788 total cable and other pay television services and 1,423 had less than \$11 million in revenue.<sup>430</sup>

278. The Commission has developed its own definition of a small cable system operator for the purposes of rate regulation. Under the Commission's rules, a "small cable company" is one serving fewer than 400,000 subscribers nationwide.<sup>431</sup> Based on our most recent information, we estimate that there were 1,439 cable operators that qualified as small cable system operators at the

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<sup>427</sup> 13 C.F.R. § 121.201, SIC code 4813.

<sup>428</sup> *Locator* at 1-2.

<sup>429</sup> 13 C.F.R. § 121.201, SIC code 4841.

<sup>430</sup> *1992 Economic Census Industry and Enterprise Receipts Size Report*, Table 2D, SIC code 4841 (U.S. Bureau of the Census data under contract to the Office of Advocacy of the U.S. Small Business Administration).

<sup>431</sup> 47 C.F.R. § 76.901(e). The Commission developed this definition based on its determination that a small cable system operator is one with annual revenues of \$100 million or less. *Implementation of Sections of the 1992 Cable Act: Rate Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393 (1995), 60 FR 10534 (Feb. 27, 1995).

end of 1995.<sup>432</sup> Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. Consequently, we estimate that there are fewer than 1,439 small entity cable system operators.

279. The Communications Act also contains a definition of a small cable system operator, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."<sup>433</sup> The Commission has determined that there are 66,000,000 subscribers in the United States. Therefore, we found that an operator serving fewer than 660,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed \$250 million in the aggregate.<sup>434</sup> Based on available data, we find that the number of cable operators serving 660,000 subscribers or less totals 1,450.<sup>435</sup> We do not request nor do we collect information concerning whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250,000,000,<sup>436</sup> and thus are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act. It should be further noted that recent industry estimates project that there will be a total of 66,000,000 subscribers, and we have based our fee revenue estimates on that figure.

280. *Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements.* See paragraph 263, for an initial Paperwork Reduction Act analysis. This Notice proposes the following information collection: The Notice seeks comment on whether all NXX codeholders should be required to report the status of all telephone numbers within the NXX blocks assigned to them. In the alternative, the Notice seeks comment on whether utilization data reporting on a more aggregated basis (or some more aggregated set of telephone number status categories) would provide sufficient data to accurately track number utilization. The Notice proposes that any utilization reporting obligation that the Commission adopts would be in addition to the demand forecasting requirement that the COCUS currently places on carriers. The

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<sup>432</sup> Paul Kagan Associates, Inc., *Cable TV Investor*, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

<sup>433</sup> 47 U.S.C. § 543(m)(2).

<sup>434</sup> 47 C.F.R. § 76.1403(b).

<sup>435</sup> Paul Kagan Associates, Inc., *Cable TV Investor*, *supra*.

<sup>436</sup> We do receive such information on a case-by-case basis only if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to section 76.1403(b) of the Commission's rules. See 47 C.F.R. § 76.1403(d).

Notice seeks comment on whether any modifications should be made to improve the quality and accuracy of carriers' demand forecasts. Alternatively, the Notice seeks comment on several alternative data collection options, including the forecast and utilization reporting process in the current Thousand Block Pooling Guidelines, and the Line Number Use Survey (LINUS) data collection model designed by NANPA staff as a replacement for COCUS. The Notice also seeks comment on other industry proposals for a number utilization and forecasting mechanism to replace COCUS. Finally, it seeks comment on whether to supplement the need verification measures and data collection program with a comprehensive audit program that verifies carrier compliance with federal rules and industry numbering guidelines.

281. *Steps taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered.* The rules we propose in this Notice are designed to ensure sufficient access to numbering resources for all service providers that need them. The Notice seeks public comment on how best to create national standards for numbering resource optimization in order to: (1) ensure sufficient access to numbering resources for all service providers that need them to enter into or to compete in telecommunications markets; (2) avoid, or at least delay, exhaust of the NANP and the need to expand the NANP; (3) minimize the negative impact on consumers; (4) impose the least cost possible, in a competitively neutral manner, while obtaining the highest benefit; (5) ensure that no class of carrier or consumer is unduly favored or disfavored by our optimization efforts; and (6) minimize the incentives for carriers to build and carry excessively large inventories of numbers. We seek comment on our tentative conclusions and proposals, and on additional actions we might take in this regard to relieve burdens on users of telephone numbering resources.

282. *Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules.* None.

#### **D. Comment Filing Procedures**

283. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on or before **July 30, 1999** and reply comments on or before **August 30, 1999**. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24,121 (1998). Comments filed through the ECFS can be sent as an electronic file via the Internet to <<http://www.fcc.gov/e-file/ecfs.html>>. Generally, only one copy of an electronic submission must be filed. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number, which in this instance is CC Docket No. 99-200. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to [ecfs@fcc.gov](mailto:ecfs@fcc.gov), and should include the following words in the body of the message, "get form <your e-mail

address." A sample form and directions will be sent in reply.

284. Parties who choose to file by paper must file an original and four copies of each filing. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, 445 Twelfth Street, S.W. Room TW-B204F, Washington, D.C. 20554.

285. Written comments by the public on the proposed information collections are due by July 30, 1999. Written comments must be submitted by the Office of Management and Budget (OMB) on the proposed and/or modified information collections on or before 60 days after date of publication in the Federal Register. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judy Boley, Federal Communications Commission, Room 1-C804, 445 12th Street, S.W., Washington, D.C. 20554, or via the Internet to [jboley@fcc.gov](mailto:jboley@fcc.gov) and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 - 17th Street, N.W., Washington, D.C. 20503 or via the Internet to [fain\\_t@al.eop.gov](mailto:fain_t@al.eop.gov).

286. Parties who choose to file by paper should also submit their comments on diskette. These diskettes should be submitted to Alvin McCloud, Common Carrier Bureau, Network Services Division, 445 Twelfth Street, S.W., Room 6-A423, Washington, D.C. 20554. Such a submission should be on a 3.5 inch diskette formatted in an IBM compatible format using WordPerfect 5.1 for Windows or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labelled with the commenter's name, proceeding (including the docket number), type of pleading (comment or reply comment), date of submission, and the name of the electronic file on the diskette. The label should also include the following phrase "Disk Copy - Not an Original." Each diskette should contain only one party's pleading, preferably in a single electronic file. In addition, commenters must send diskette copies to the Commission's copy contractor, International Transcription Service, Inc., **1231 20th Street, N.W., Washington, D.C. 20037.**

287. Regardless of whether parties choose to file electronically or by paper, parties should also file one copy of any documents filed in this docket with the Commission's copy contractor, International Transcription Services, Inc., **1231 20th Street, N.W., Washington, D.C. 20036.** Comments and reply comments will be available for public inspection during regular business hours in the **FCC Reference Center, 445 12th Street, S.W., Washington, D.C. 20554.**

288. Comments and reply comments must include a short and concise summary of the substantive arguments raised in the pleading. Comments and reply comments must also comply

with section 1.49 and all other applicable sections of the Commission's rules.<sup>437</sup> We also direct all interested parties to include the name of the filing party and the date of the filing on each page of their comments and reply comments. All parties are encouraged to utilize a table of contents, regardless of the length of their submission.

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<sup>437</sup> See 47 C.F.R. § 1.49.

**IX. ORDERING CLAUSES**

289. Accordingly, IT IS ORDERED that pursuant to Sections 1, 3, 4, 201-205, 251 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 153, 154, 201-205, and 251 this NOTICE OF PROPOSED RULEMAKING is hereby ADOPTED.

290. IT IS FURTHER ORDERED that the Commission's Office of Public Affairs, Reference Operations Division, shall send a copy of this NOTICE OF PROPOSED RULEMAKING, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. §§ 602 *et seq.* (1981).

FEDERAL COMMUNICATION COMMISSION

Magalie Roman Salas  
Secretary

**Appendix A**

Comments on the NANC Report were received from 49 entities:

AirTouch Communications, Inc. (AirTouch)  
Allegiance Telecom, Inc. (Allegiance)  
American Cellular Corporation  
Ameritech  
Association for Local Telecommunications Services (ALTS)  
AT&T Corporation (AT&T)  
Bell Atlantic  
Bell Atlantic Mobile, Inc. (Bell Atlantic Mobile)  
BellSouth Corporation (BellSouth)  
California Public Utilities Commission and the People of the State of California  
Cellular Telecommunications Industry Association (CTIA)  
Colorado Public Utilities Commission  
Commonwealth of Virginia, State Corporation Commission, Division of Communications  
Communications Venture Services, Inc. and Richard Bartel (CVSI)  
Cox Communications, Inc. (Cox)  
Dr. Richard Levine  
Florida Public Service Commission  
GTE Service Corporation (GTE)  
Joint Comments (filed by Centennial Cellular Corporation, CenturyTel Wireless, Inc., RFB Cellular, Inc., Thumb Cellular Limited Partnership, and Trillium Cellular Corporation)  
Kentucky Public Service Commission  
Lincoln Madison, LincMad.Com Consulting (Madison)  
Maine Public Utilities Commission  
MCI WorldCom, Inc. (MCI WorldCom)  
MediaOne Group, Inc. (MediaOne)  
National Association of State Utility Consumer Advocates (NASUCA)  
National Emergency Number Association (NENA)  
New Hampshire Public Utilities Commission  
New York State Department of Public Service  
Nextel Communications, Inc. (Nextel)  
Nextlink Communications and Cablevision Lightpath, Inc. (Nextlink)  
North Carolina Utilities Commission  
Organization for the Promotion and Advancement of Small Telecommunications Companies (OPASTCO)  
Paging Network, Inc. (PageNet)  
Pennsylvania Public Utility Commission  
Personal Communications Industry Association (PCIA)  
PrimeCo Personal Communications, L.P. (PrimeCo)  
Public Utilities Commission of Ohio

Public Utility Commission of Texas  
RCN Telecom Services, Inc. (RCN)  
SBC Communications, Inc. (SBC)  
Sprint Corporation (Sprint)  
Telco Year 2000 Forum  
Telecommunications Resellers Association (TRA)  
Teligent, Inc. (Teligent)  
Texas Advisory Commission on State Emergency Communications and Texas Emergency  
Communications Districts  
Unified Dialing Plan for Overlays, Gilbert Yablon  
United States Telephone Association (USTA)  
U S West Communications, Inc. (U S West)  
Vanguard Cellular Systems, Inc. (Vanguard)

May 27, 1999

## Separate Statement of Commissioner Gloria Tristani

*Re: Numbering Resource Optimization. CC Docket No. 99-200*

This Notice represents an important first step towards promoting efficient number utilization and creating standards for number optimization. The advent of new services using our nationwide numbering scheme, the entry of new competitors in the telecommunications market, the explosive growth of customer demand for telephone lines to support additional services, and the inefficient use of numbers all have contributed to a tremendous strain on our nation's numbering resources.

For some states, this problem has reached crisis proportions. Illustrating the rapid pace of area code exhaust, the California Public Utilities Commission projects that by the end of 2002, California will have 41 area codes. At the end of 1992, the state had only 13 area codes in use. In April, the California Public Utilities Commission reported that it had approved 7 new area codes in the previous 10 months. In one instance, immediately after the area code split was completed, the code administrator declared the new area code in jeopardy of exhausting its numbering resources.<sup>1</sup>

The Commission must act expeditiously to relieve the burden not only on the state commissions developing area code relief plans but most importantly on consumers, who face enormous costs and inconvenience each time area code relief is implemented. The carriers that serve these consumers have a vital role to play in forging solutions to promote efficient allocation and use of numbering resources. Accordingly, I urge telecommunications carriers and state commissions alike to participate in this proceeding to help craft a solution that will prevent the exhaust of our North American Numbering Plan.

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<sup>1</sup> See Briefing on Numbering Issues, California Public Utilities Commission, April 1999.