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

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In the Matter of	)	
	)	
Number Resource Optimization	)	CC Docket No. 99-200
	)	
	)	
State Utility Commission Requests for Additional Authority to Implement Telecommunications Numbering Conservation Measures	)	NSD File Nos: L-98-136 (CA) L-99-19 (MA) L-99-21 (NY) L-99-27 (ME) L-99-33 (FL) L-99-55 (TX) L-99-62 (CT) L-99-64 (WI)
	)	
Cellular Telecommunications Industry Association Petition for Forbearance from Commercial Mobile Radio Services Number Portability Obligations	)	WT Docket No. 98-229

SPRINT CORPORATION REPLY COMMENTS

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Summary of Reply Comments

States are understandably anxious to begin implementing number pooling, and some want to implement pooling immediately in any area with LNP-capable carriers — including areas outside the 100 most populous MSAs. Sprint agrees that 1000s-block pooling should be implemented promptly, but premature or haphazard deployment could pose a serious risk to network reliability and would almost certainly result in certain calls to pooled or ported numbers being not transmitted to their proper destination.

Results from the Illinois pooling trial indicate that pooling will have a significantly greater impact on carrier networks than number portability has had. In the 847 NPA trial, there are nearly 10 pooled numbers for every ported number (231,374 pooled numbers after eight months of pooling, and 32,785 ported numbers after 19 months of porting). The Illinois Commission recently extended the pooling trial to four additional Chicago-area NPAs, and based on conservative forecasts, there will be 3.8 million pooled numbers in these NPAs by the end of 2000 — or 40% more numbers that the current total of ported numbers nationwide after 19 months of number portability. Clearly, pooling will have a major impact on carrier networks, and a phased deployment schedule for pooling is even more important than the phased implementation schedule the Commission required for number portability.

Fortunately, there is a technological solution for this network capacity/network reliability issue that should be available in the near future. Industry designed Efficient Data Representation ("EDR") so that each block of 1,000 pooled numbers can be stored as a single record — thereby resulting in a 1,000-fold reduction in needed net-

work storage capacity (a savings of 99.9%). The Mid-Atlantic Regional LLC recently charged the NPAC administrator to develop EDR and under the contract, EDR should become generally available during the third quarter of next year and implemented in the fourth quarter. Once EDR becomes available, the capacity issue (and the related concerns over costs and network reliability) becomes a non-issue. Sprint therefore strongly recommends that the Commission not permit any state to commence "interim" portability until EDR becomes generally available.

While Sprint opposes implementation of "interim" pooling before EDR becomes available, it does *not* suggest that industry and regulators do nothing in the interim. To the contrary, Sprint has identified numerous steps that the Commission can take in the immediate future that would enable industry and states to begin meaningful reform, and in the process, improve substantial the efficiency in which carriers use numbers. Among other things, the Commission should promptly adopt national 1,000s-block management guidelines in order to maximize the number of blocks that can be contributed to the pool once pooling can be implemented safely.

If the Commission nonetheless decides to permit states to implement "interim" pooling before EDR becomes available, it should impose several conditions to minimize the risk to network reliability and to ensure that a steady stream of new numbering resources is available to all carriers when they need them. Among other things, states should be required to ensure that adequate pooling capacity exists to minimize the risk of network failures if "interim" pooling is deployed, and carriers should be required to document their need for numbering resources.

Finally, the states addressing the issue have presented no reason for the Commission to reconsider its prior rulings that the creation of wireless-only overlays "would be unreasonably discriminatory and anticompetitive in violation of Sections 201(b) and 202(a) of the Communications Act."[1] The goal of prolonging the life of our numbering plan would not be served by assigning to CMRS providers a separate area code — with its eight million available numbers — to states such as Connecticut (population: 3.3 million); Maine (population: 1.2 million); New Hampshire (population 1.1 million); and North Carolina (population: 6.7 million).

[1] *Second Local Competition Order*, 11 FCC Rcd 19391, 19517 ¶ 281 (1996).

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SPRINT CORPORATION REPLY COMMENTS

Sprint Corporation, on behalf of its local, long distance, and PCS carrier operations ("Sprint"), limits this reply to the important subject of 1000s-block number pooling and the need for Efficient Data Representation ("EDR") to ensure cost effective implementation of pooling without negatively impacting network reliability. Because this issue is relevant to the pending state delegation petitions seeking authority to implement pooling, Sprint also submits this reply as a written *ex parte* in the record in these state petition proceedings.[1]

[1] It is also necessary for Sprint to file this reply as an *ex parte* to a pending reconsideration proceeding (WT Docket No. 98-229) because of the arguments certain states have made with respect to wireless-only overlays. *See* Part III *infra.*

Pooling is unquestionably a promising number conservation measure — at least with respect to new area codes and area codes not now in jeopardy.[2] Nevertheless, implementation of pooling too rapidly or in a haphazard fashion could endanger the continued reliability of the public switched network (by preventing carriers from routing calls to their proper destination). To address these serious network reliability concerns, pooling should not be implemented until EDR becomes available.

I. Delegation to States of "Interim" Pooling Authority Would Raise Serious Network Reliability Concerns

There is broad consensus among commenters that the public interest would be served by implementation of 1000s-block number pooling, but no agreement over when pooling should begin. Industry agrees that pooling beyond the Illinois trial should not be implemented until the Commission adopts national pooling guidelines, including EDR, and industry has an opportunity to implement these guidelines.[3] In contrast, eight states (at last count) have filed petitions seeking to implement "interim" pooling *before* national guidelines (and EDR) can be adopted and implemented, and the comments indicate that there are additional states with an interest in obtaining the same "interim" pooling authority.

This Commission must understand that the premature grant to states of broad "interim" pooling authority could seriously jeopardize the continued reliability of

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[2] Pooling has far fewer benefits with regard to jeopardy NPAs, and those benefits can be offset by the costs of pooling. *See, e.g.*, Ohio PUC Comments at 30 ("Based on our staff's analysis of number utilization in certain areas of Ohio, including major metro areas, number pooling did not appear to provide an appreciable extension in the life of the existing NPA. A small benefit is further decreased when it is compared to the costs associated with implementing number pooling."); *Pennsylvania Area Code Order*, 13 FCC Rcd 19009, 19028 ¶ 29 (1998).

[3] *See Numbering Optimization Notice* at ¶¶ 157-58.

our public switched network. Sprint therefore recommends that pooling not be deployed until industry has an opportunity to implement EDR — a capability that would remove network capacity as an issue and, consequently, eliminate most network reliability concerns. As discussed below, there are other steps industry and states can take in the near future (*albeit* only with the Commission's assistance) to preserve numbering resources for pooling and thereby maximize the beneficial impact of pooling when it can be safely implemented.

A. The Premature or Haphazard Deployment of Pooling Could Have Disastrous Effects on Network Reliability

Number pooling and local number portability ("LNP") are intimately related. Industry will use the same technology and equipment to implement pooling that it presently uses to provide LNP (*e.g.*, regional NPACs, carrier SMS/SCPs).[4] This fact may give some the impression that pooling can be implemented easily and at minimal cost. This perception is not supported by the facts, however.

The current LNP network architecture has been "sized" to handle the growing demand for ported numbers. Thus, if states are given the authority to implement "interim" pooling, industry must have time to increase the capacity of its LNP networks to accommodate both ported *and* pooled numbers. The consequences of implementing pooling before needed additional capacity is available are severe: calls to certain numbers

[4] It is for this reason that only carriers with networks capable of supporting LNP/LRN can implement pooling. *See, e.g., CTIA LNP Extension Order,* WT Docket No. 98,229, FCC 99-19, at ¶ 43 (Feb. 8, 1999).

(whether ported *or* pooled) will be misrouted — and consequently, never delivered to their proper destination.[5]

Forecasting (and then deploying) increased LNP network capacity will be challenging if each state is empowered to determine within its borders when "interim" pooling should begin and how many NPAs should be subject to pooling. With LNP, industry had the benefit of a national implementation plan that was deployed in phases. As a result, carriers could use their experience with LNP Phase I implementation to correctly size their networks for Phase II and later Phase III.

This measured implementation of sophisticated (and highly sensitive) technology will not be possible if states are given broad discretion to implement number pooling at will. The comments reveal a strong interest among states in implementing pooling as quickly as possible, and these comments further suggest that many states, if given the discretion, would implement pooling liberally (*e.g.*, in any area with LNP-capable carriers – including areas outside the 100 most populous MSAs).[6] Based on the pending petitions and comments, it would be reasonable to expect that if given the authority and discretion, 15 states (or more) could order the immediate implementation of pooling in many (if not all) of their NPAs.[7] Such a rapid and haphazard development

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[5] Calls to ported and pooled numbers will be routed correctly only if each carrier has sufficient capacity (a) to store all ported and pooled records, and (b) to process the volume of LNP/pooled data base queries. Because competition does not permit carriers to "gold plate" their networks, network planning and forecasting — the task of sizing one's network correctly — becomes even more critical.

[6] *See, e.g.*, California PUC Comments at 31; Connecticut PUC Comments at 5; Maine PUC Comments at 19; New Hampshire PUC Comments at 14; New Jersey PUC Comments at 6; New York PUC Comments at 9 and 12; North Carolina PUC Comments at 6; Wisconsin PUC Comments at 7.

[7] States in addition to those already filing delegation petitions express an interest in implementing pooling. *See, e.g.*, note 6 *supra*. It is therefore reasonable to anticipate that if the Commis-

could have a serious impact on network reliability because all available evidence suggests that pooling will have a *significantly far greater impact* on carrier networks than number portability has had.

It is important for the Commission to examine available facts before determining whether to delegate broad authority to implement "interim" pooling. Illinois has implemented pooling in the 847 area code (northern Chicago suburbs), and this trial enables a comparison of the network impacts of pooling and porting.[8] During the first 19 months that LNP has been available in the 847 NPA (Jan. 1998 to July 1999), a total of 32,785 numbers have been ported. This means that the Midwest NPAC and each carrier's SMS/SCPs serving the NPA must be capable of storing and processing these 32,785 ported numbers so calls made to them can be routed correctly and completed.

During the eight-month period that pooling has been used in the 847 NPA (Dec. 1998 to July 1999), a total of 222 thousands blocks have been assigned — or 221,374 pooled numbers.[9] This means that given current technology (discussed below), the Midwest NPAC and each carrier's SMS/SCPs must also be capable of storing and processing all 221,374 pooled records (in the same manner as if each one had been ported), so calls made to one of these numbers can be routed correctly. Data from the

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sion grants the pending pooling delegation petitions, additional states will seek the same authority.

[8] The Illinois Commerce Commission recently extended this trial to four additional area codes. *See Approval of NPA Relief Plans for the 312, 630, 708, and 773 NPAs,* No. 98-047 (ICC, June 30, 1999). Pooling in the 630 NPA began on July 15, 1999 and in the 312 NPA on August 15, 1999. Pooling will begin in the 773 NPA on October 1, 1999 and in the 708 NPA early next year. *Id.* Accordingly, pooling/porting comparison data is only available for the 847 NPA.

[9] *See* NPAC, "*How Many Numbers are Ported in North America?*" www.ported.com. The number of thousands blocks assigned in a month has ranged from a low of four blocks to high of 89 blocks *Id.* The uneven number of pooled numbers is the result of the NPAC accepting uncontaminated blocks.

847 NPA, assuming it is representative of what would occur elsewhere as appears to be the case,[10] suggests that *industry may likely require capacity to store nearly 10 pooled numbers for every one ported number.*

The demands of pooling on networks will soon mushroom. As of July 1999, the Midwest NPAC (and, therefore, carrier SMS/SCPs) had to have sufficient capacity to store a total of 594,297 records: 375,253 ported numbers (63% of the total) from five states (encompassing 33 NPAs), and 221,374 pooled numbers (37% of the total) limited to the 847 NPA.[11] However, the Illinois Commerce Commission ("ICC") recently extended its 847 NPA pooling trial to four additional Chicago-area NPAs.[12] Based on the testimony submitted before the ICC, this expansion could *conservatively* result in a total of 3.8 million pooled numbers by the end of year 2000[13] — *or more than 40% more numbers than are stored in all seven regional NPACs after 19 months of LNP.* Clearly, carrier networks (and network reliability) will be dramatically affected if pooling is suddenly deployed in 40 or more area codes.

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[10] Sprint has no basis to conclude that the northern Chicago suburbs covered by the 847 NPA would not be representative of other suburban areas across the country. While it is likely that there are more ported numbers in urban areas, given the great disparity between pooled and ported numbers in the 847 NPA, the ratio of pooled to ported numbers in urban areas would still likely be sizable.

[11] *See* NPAC, "*How Many Numbers are Ported in North America?*" www.ported.com. In this report, pooled numbers in the Midwest NPAC, while listed separately, are also included in the category listing ported numbers.

[12] *See* note 8 *supra.*

[13] The co-chair of the Illinois Number Pooling Subcommittee, a representative of the Citizens' Utility Board, testified on April 8, 1999 that as of May 19, 1999 there was a forecasted demand in the 847 NPA for 769 thousands block through 2Q00. Using 16 months (March 1999 through June 2000) as a divisor equates to 48 blocks per month. If the four other Chicago NPAs encounter the same growth, 3.8 million numbers will be in the Chicago area pool by the end of year 2000.

This hard data suggests that industry may need to be prepared to have up to 10 times the current NPAC/SMS/SCP LNP capacity if "interim" portability is widely deployed. Even putting aside the significant capital required for such a massive investment (and the associated rate impact on consumers), it is unrealistic to think that industry can increase its network capacity by this magnitude in the near future if interim pooling is deployed rapidly. And it bears emphasis that if industry does not have the added capacity in place at the time "interim" pooling is implemented, calls to ported and pooled numbers will fail and will not be completed.[14]

B. A Solution to the Capacity/Network Reliability Issue Should Be Available as Early as Next Year

Implementation of "interim" pooling on a broad scale will impose a severe strain on the capacity of networks and, consequently, will threaten the continued network reliability. Fortunately, there is a technological solution for this network capacity/network reliability issue — EDR — that should be available in a year or so.

The technology used in the Illinois trial (and what would be used if "interim" pooling were expanded) is generally referred to as NPAC Release 1.4.[15] With Release 1.4, each pooled number is stored in the regional NPAC and local SMS/SCPs as a separate record. Thus, if 10 1000s-blocks are contributed to the pool and assigned to carriers in a given NPA, the NPAC and carrier SMS/SCPs must have additional capacity

[14] Call failures of ported numbers will primarily affect customers of competitive LECs and callers to those numbers. Call failures of pooled numbers will affect customers (and their callers) of any carrier using pooled numbers.

[15] Strictly speaking, NPAC Release 1.4 is a software package developed for use in the regional NPACs. Carriers must also modify their own networks (*e.g.*, SMS) in order to interact with the NPACs and thereby download information. For purposes of this pleading, Sprint generically refers to NPAC Releases 1.4 and 3.0 to include all the activity that industry must undertake — both as an industry and individually.

to store 10,000 additional records (10 blocks x 1,000 numbers) — capacity in addition to that needed to store the anticipated number of ported numbers. Similarly, if 222 pooled blocks are in use, as is the case of the 847 NPA today, the NPAC and carrier SMS/SCPs must have additional capacity to store 222,000 additional records.

The storage of a separate record for each pooled telephone number is unnecessary for call processing and grossly inefficient as a result. With 1,000s-block pooling, numbers are assigned to carrier in blocks of 1,000. Thus, for purposes of call processing, a carrier can route a call attempt to the terminating network simply by examining the "G" digit (*i.e.*, NPA-NXX-*X*); there is no need for carriers to screen all 10 digits of the dialed number in order to identify the terminating carrier.[16]

Industry has designed what is known as Efficient Data Representation ("EDR") to address this efficiency issue. EDR, the Commission has noted, is "a data formatting method that facilitates the transfer of large ranges of numbers as a single message."[17] Specifically, EDR will enable the regional NPACs and carrier SMS/SCPs to represent each block of 1,000 pooled numbers as a *single* record — thereby resulting in a 1,000-fold reduction in needed network storage capacity (a savings of 99.9%). Thus, if EDR were available today for use in the 847 NPA pooling trial, the NPAC and local SMS/SCPs would be required to store only 222 records — as opposed to the 222,000 separate records required today to perform the same function.

Industry, through the regional LNP LLCs, has been working with the NPAC administrator (Lockheed Martin IMS) to develop NPAC Release 3.0, which will

[16] Screening the full 10 digits is important only for the carrier serving the called party, so that carrier can direct the call to the correct customer.

include an EDR capability. Earlier this month the Mid-Atlantic Regional LLC executed a Statement of Work in which the NPAC administrator agreed to develop NPAC Release 3.0 (including EDR). Under the contract, the NPAC administrator agreed to make a fully tested version of Release 3.0 available in July 2000.[18]

The execution of this Release 3.0 development contract is a major development for number pooling.[19] Once EDR becomes available, the capacity issue (and the related concerns over costs and network reliability) becomes a non-issue. Sprint therefore recommends that the Commission not permit any state to commence "interim" pooling until EDR becomes generally available for use. The beneficiaries of this slight delay would be consumers who invariably would pay for the consequences of proceeding before EDR is available — whether in the form cost increases caused by deployment of additional (and later, stranded) network capacity or by misrouted calls because carriers do not have needed capacity to route calls to their correct destination.

C. There Are Other Important Steps Industry Can Take in the Immediate Future to Maximize the Benefits of Pooling Once Pooling Can be Activated Safely

While Sprint opposes implementation of "interim" pooling before an EDR capability becomes generally available, it certainly does *not* suggest that industry and regulators do nothing while EDR is being developed, tested, and installed. To the con-

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[17] *See Numbering Optimization Notice* at ¶ 157.

[18] NPAC Release 3.0 is a set of software and hardware designed for use only with the regional NPACs. *See* note 15 *supra*. Carriers must have their own SMS/SCP vendors modify their equipment to include as well an EDR capability. Sprint's SMS/SCP vendor has advised it that it should be able to develop an EDR enhancement before the NPAC completes Release 3.0.

[19] At the present time, only one of the seven regional LLCs has agreed to fund development of Release 3.0. Sprint expects the six other LLCs will follow suit in the near future. If they do not,

trary, Sprint identified in its comments numerous steps that the Commission should take promptly so industry and states can begin meaningful reform and, in the process, improve substantially the efficiency in which carriers use numbers.[20]

Several of Sprint's recommended "action items" merit brief discussion because they relate to number pooling. Most urgently, the Commission should adopt national guidelines as promptly as possible so industry and states can begin planning for and implementing pooling under a uniform plan. States addressing the issue recognize that it will take time for industry to implement new guidelines so industry can implement pooling without negatively impacting network reliability.[21] The sooner the Commission acts, the sooner industry can implement pooling, and the sooner the benefits of pooling can be realized.[22]

Sprint also believes that it is important that the Commission promptly adopt national 1,000s-block management guidelines, so industry can begin implementing these guidelines.[23] The benefits of pooling will be realized only if there are uncontaminated thousands blocks available for contribution to the pool. The sooner carriers begin

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the Commission should be prepared to intervene to ensure that the Release 3.0 costs are shared equitably among all LLCs (and, therefore, shared equitably among all carriers).

[20] *See* Sprint Comments at 5-34.

[21] *See, e.g.,* Colorado PUC Comments at 4 ¶ 8; California PUC Comments at 26; Florida PUC Comments at 9-10.

[22] In its pooling report, industry estimated that it would take 10-19 months from an before pooling could be implemented. *See Numbering Optimization Notice* at ¶ 158. With the development of NPAC Release 3.0 (and EDR), Sprint believes that a start date between October 1 and December 31, 2000 may be possible under the time frames established by the Mid Atlantic Statement of Work. However, *and of critical importance,* given the significant impacts pooling will have on networks, it will be important that pooling be implemented in phases just as LNP was implemented in phases.

[23] *See* Sprint Comments at 19-21. Sprint recommends the Commission adopt the guidelines industry adopted in Florida. *See id.* at Attachment B (appending a copy of the Florida guidelines).

managing numbers in blocks of 1,000, the more uncontaminated thousands blocks that will be available for contribution to the pool once pooling can be activated. Thus, early adoption of 1,000s-block management rules would increase substantially the number of blocks available for pooling.[24] In this regard, states should be given the authority to ensure that all carriers are complying with these guidelines (*e.g.*, "for cause" audits).

Sprint submits that prompt adoption of these and the other steps it identified in its comments would enable industry and states to begin meaningful reform, which they can then build on once pooling can be activated safely.

D. California Is Wrong in Asserting that the Cost of Implementing "Interim" Pooling Will be "Relatively Small"

California asserts that the costs to carriers of implementing pooling "should be relatively small."[25] California submits no facts in support of this assertion. Instead, it reaches its conclusion based on its assumption that "the majority of the costs to deploy the network infrastructure to support both LNP and pooling already are being borne by the public directly."[26]

In fact, California's assumption — most pooling costs have already been incurred — is erroneous. As demonstrated above, if pooling is implemented before an EDR capability is available, carriers would need to make a sizable capital investment to expand dramatically their LNP network capacity — capacity that may largely become

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[24] As Sprint has previously explained (Comments at n.42), 1000s-block management guidelines produce the same effect as sequential numbering without the major practical problems that are associated with sequential numbering.

[25] California PUC Comments at 28. *See also id.* at 27 ("RCC poses the very real potential for substantial, permanent, direct costs to consumers through rate re-balancing. This is not similarly true for number pooling.").

[26] *Id.* at 28 (emphasis omitted).

stranded once EDR is installed and becomes available for use (given EDR's capacity savings of 99.9%).

California's argument, moreover, overlooks the fact that industry incurs costs associated with pooling unrelated to core network investment. The NPAC administrator does not provide its services *gratis*; it understandably wants to be paid additional sums for devoting additional equipment and labor for additional work. The NPAC administrator will assess a separate administrative fee for each NPA in which pooling is used. In addition, it will assess a transaction fee per telephone number download from the NPAC to carrier SMS/SCPs. This transaction fee with respect to a single pooled number is today the same as for a single ported number. (Of course, once EDR is installed, the cost to store and process one 1,000-block of ported numbers will be the same as that of a single ported number.) Based on current contract prices, Sprint estimates that without EDR and using the current porting fee, industry would spend at minimum over $15 million annually in NPAC administrative expenses alone.[27]

The implementation and maintenance of number pooling will involves costs — costs that invariably will be passed on to consumers. These pooling costs will increase exponentially if carriers are required to begin pooling before EDR becomes available. Sprint submits minimization of deployment costs, particularly given consumer

[27] This estimate assumes that pooling is utilized with only 20 NPAs and that within each NPA only 48 blocks are activated each month. Of course, this estimate would increase exponentially if "interim" pooling is used in additional NPAs or if more than 48 blocks within an NPA are activated in a month. By way of comparison, 89 blocks were assigned in the 847 NPA in April 1999 alone. If another 20 NPAs are pooled in the next year at the same rate, this administrative expense would jump to $50 million.

sensitivity to additional rate increases,[28] provides an independent basis to postpone commencement of pooling.

* * *

The Commission has repeatedly reaffirmed that network reliability is of "paramount importance,"[29] and on several occasions it has extended deadlines of new technology precisely "to safeguard network reliability."[30] As the Commission has explained:

> Consumers, both business and residential, rely on the public switched telephone network for their livelihood, health and safety. Jeopardizing the reliability of the network would stifle business growth and economic development, and endanger individuals' personal safety and convenience. Consumers, both business and residential, have also come to expect a certain level of quality and convenience in using basic telecommunications services. We note that this Commission has repeatedly affirmed its commitment to maintaining service quality and network reliability.[31]

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[28] *See, e.g., Number Optimization Notice* at ¶ 204; Wisconsin PUC Comments at 6.

[29] *First LNP Reconsideration Order,* 12 FCC Rcd 7236, 7285 ¶ 83 (1997). *See also Third LNP Reconsideration Order,* 13 FCC Rcd 16090, 16097 ¶ 10 (1998)("We continue to believe that network reliability is of the utmost importance.").

[30] *First LNP Reconsideration Order,* 12 FCC Rcd 7236, 7283 ¶ 78 (1997)(FCC extends Phase II deadline by three months to protect network reliability). *See also Second LNP Order,* 12 FCC Rcd 12281, 12325 ¶ 76 (1997)(FCC permits incumbent LECs to block LNP default routed calls "when failure to do so is likely to impair network reliability"); *SBC LNP Deadline Waiver Order,* 13 FCC Rcd 9578 (1998)(FCC grants carrier-specific extension to ensure that LNP deployment does not negatively impact other network functions).

[31] *First LNP Order,* 11 FCC Rcd 8352, 8382 ¶ 55 (1996).

For example, with regard to LNP, the Commission expressly required that LNP "not cause any unreasonable degradation to the network or the quality of existing services."[32]

The costs and risks to network reliability of implementing "interim" portability are both real and significant. These costs and risks can be avoided if implementation of portability is deferred until EDR becomes generally available. Because an EDR capability should become available within a year, on behalf of its customers, Sprint respectfully requests that the Commission postpone further implementation of 1,000s-block portability until EDR becomes available. In the meantime, the Commission should take steps necessary so industry can begin preserving 1,000s blocks for pooling.

II. If the Commission Decides to Proceed with "Interim" Portability Despite the Risks to Network Reliability, It Should Condition the Exercise of That Authority

If the Commission decides to permit states to implement "interim" pooling before EDR becomes available notwithstanding the costs and risks involved, it should then impose the following conditions on such implementation:

A. States Must Ensure That Adequate LNP/Pooling Capacity Is Available. As noted, the principal problem with implementation of pooling before EDR is available is that carriers may not have the necessary network capacity, with the result that certain calls will not be completed. To prevent this danger from occurring, states should

[32] *Id. See also* 47 C.F.R. § 52.23(a)(4) ("[A]ll local exchange carriers (LECs) must provide number portability in compliance with the following performance criteria: . . . (4) Does not result in unreasonable degradation in service quality or network reliability when implemented.").

ensure that all carriers (nationwide) whose networks will be impacted by pooling will have adequate network capacity in place before pooling is activated.[33]

B. For Area Codes in Jeopardy, States Must Make an Affirmative Filing That the Benefits of Pooling Exceed the Costs. States addressing the issue have acknowledged that pooling should be implemented only where the benefits exceed the associated costs of pooling.[34] For example, the Ohio Commission has performed a study and based on the study's results, has conducted that the benefits of introducing pooling in existing area codes would be marginal and may be offset by the costs of pooling:

> Based on our staff's analysis of number utilization in certain areas of Ohio, including major metro areas, number pooling did not appear to provide an appreciable extension in the life of the existing NPA. A small benefit is further decreased when it is compared to the costs associated with implementing number pooling.[35]

The Commission should, therefore, require states to make an affirmative finding that the benefits of pooling exceed the associated costs as a condition to implementing pooling. Obviously, there are far fewer benefits of pooling if there are relatively few uncontaminated blocks available for pooling and an area code is in need of relief in the near future. An alternative approach that would achieve the same objective but would

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[33] It bears remembering that LNP was implemented over time using a phased approach. Because pooling promises to have at least has much impact as LNP (if not more), a similar phased approach should be used with pooling. Simply stated, states cannot expect industry to implement pooling around the same date yet expect no impact on network reliability.

[34] *See, e.g.*, Ohio PUC Comments at 31 ("[W]e believe that the costs associated with pooling should be determined and assessed before implementing pooling in any area."); North Carolina PUC Comments at 13 (Pooling should be implemented only after "a determination that the costs of ordering number pooling are outweighed by the benefits.").

[35] Ohio PUC Comments at 30. *See also Pennsylvania Area Code Order*, 13 FCC Rcd 19009, 19028 ¶ 29 (1998)("In fact, number pooling would probably be a more effective conservation tool if applied to new area codes with many whole NXX codes, rather than to codes that already have a high usage rate, because there will be more whole NXXs, including blocks of 1,000 or fewer numbers and individual telephone numbers, to pool.").

be administratively more efficient would be to prohibit implementation of pooling unless pooling would extend the life of the area code by a minimum of 18 months.

C. "Interim" Pooling Must be Limited to Carriers Already Equipped with LNP Capability. As noted, pooling can be implemented only by carriers capable of supporting LNP. As part of this rulemaking, the Commission has asked whether it has the authority (including the authority to delegate to states) to order carriers to implement LNP for number pooling purposes.[36] Even if the Commission determines that it has the authority, it must then determine as a matter of policy (*e.g.,* perform a cost-benefits analysis) whether it should exercise its authority. Until these important questions are resolved, any new state authority to conduct pooling should be limited to those carriers and in those areas where a LNP capability exists today.[37]

D. States Must Develop an Equitable Plan for Assignment of Numbering Resources to Non-Pooling Carriers. Because pooling can be implemented only by carriers with a LNP capability, it is imperative that a state wanting to implement pooling set aside a sufficient set of available numbering resources for non-LNP-capable carriers. If the circumstances present themselves, the state must also be willing to reassign numbers set aside for pooling to non-pooling carriers. As the Commission has already determined,

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[36] *See Numbering Optimization Notice* at ¶ 145.

[37] There is no factual basis whatever for New Jersey's passing comment that states are in "a better position" to determine whether CMRS carriers should deploy LNP so they can participate in pooling. New Jersey PUC at 6. As this Commission is well aware, no CMRS carrier may implement LNP unless all CMRS carriers activate LNP simultaneously — at least if roaming is to be preserved. *See, e.g., First LNP Order,* 11 FCC Rcd 8352, 8440 ¶ 166 (1996). This Commission understands the complexity, cost, and competitive considerations involved with CMRS LNP, and the CMRS industry should not be required to re-litigate this matter in the states.

"[n]o carrier . . . may be denied a NXX code so that it can be saved for pooling purposes."[38]

E. Area Code Relief Plans Must be in Place. If states want to utilize pooling in assigning numbering resources, it is also imperative that they adopt relief decisions, that area code relief plans be implemented, and that the new NPAs be ready for activation *before* the last numbering resources in the current NPA is assigned. As this Commission has recognized, "State commissions, by declining to implement area code relief, should not put carriers in the position of having no numbers and therefore being unable to serve customers."[39] Thus, the Illinois Commerce Commission in the same order that it expanded the pooling trial adopted relief plans for the involved NPAs, noting that "backup" NPA relief "will allow the maximum opportunity for conservation measures and number pooling to delay NPA exhaust and will ensure that NPA relief is not implemented until it is absolutely necessary."[40] Other states should be subject to the same requirement.

F. States Should be Required to Follow the Illinois "Interim" Pooling Guidelines. There is general recognition, even among most states, that uniform, national pooling guidelines are important (if not, imperative).[41] Because federal guidelines should

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[38] *Pennsylvania Area Code Order,* 13 FCC Rcd 19009, 19028 ¶ 27 (1998). Indeed, the Commission has already determined that a state pooling plan that did not set aside sufficient resources for non-pooling carriers was unreasonably discriminatory. *See id.* at 19035-37 ¶¶ 40-44.

[39] *Pennsylvania Area Code Order,* 13 FCC Rcd at 19033 ¶ 38.

[40] *NPA Relief Plans for the 312, 630, 708, and 773 NPAs,* No. 98-047, at 3 (ICC, June 30, 1999). Earlier, the ICC declared that it would be "irresponsible" to implement pooling without adopting a "backup" NPA relief plan. *Number Pooling Within the 312, 773, 847, 630, and 708 Area Codes,* Nos. 97-0192 and 97-0211 (ICC, May 11, 1998).

[41] *See, e.g.,* Maine PUC Comments at 24; New Hampshire PUC Comments at 18; North Carolina PUC Comments at 12-12; Ohio PUC Comments at 31.

be adopted in the near future and because "interim" guidelines have already been adopted and have proven to work in practice, it makes no sense for each state to attempt to develop its own set of "interim" guidelines.[42] Most carriers operate regional and national networks, and the development of inconsistent, state-specific pooling guidelines would present administrative nightmares. Besides, reinventing new guidelines in every state will cause unnecessary delays in areas already facing exhaust, and code rationing must be stopped as quickly as possible.

G. Pooling Should Be Implemented Only in Conjunction with Use of Demonstrated Needs-Based Assignment Rules. Pooling improves number conservation by allowing the assignment of numbers in smaller increments. An equally important conservation measure is requiring applicants for numbering resources to document their need.[43] In Illinois, a carrier may receive a growth code only if at least 75% of its current number assignments are utilized, unless it demonstrates that it will exhaust within 90 days. In Long Island, the applicant must furnish six months of historical and forecast data, with a code assigned (without further documentation) only if projected demand is in within 15% of the average historical utilization.[44] States should be required to utilize one of these approaches.[45]

III. There Is No Basis for the Commission to Reverse Its February 1999 Decision Postponing CMRS LNP/Pooling

[42] *See, e.g.,* California PUC Comments at 28 (agreeable to using Illinois guidelines in interim).

[43] Sprint demonstrated in its comments that under current assignment criteria, two carriers alone were able to obtain over 200 NXX codes in four jeopardy NPAs that they had never used. *See* Sprint Comments at 10.

[44] *See* Sprint Comments at 12.

[45] The Commission should also tighten the eligibility process to receive an initial code or thousands block. *See id.* at 10-12.

Six months ago, the Commission extended to November 2002 the date by which CMRS providers must support number portability.[46] Several states had opposed an extension because LNP is a necessary predicate to pooling, with these states arguing that the benefits of pooling may "significantly diminish if wireless carriers are not capable of participating."[47] The Commission, after reviewing the facts, concluded that extending the CMRS LNP implementation date (and, therefore, the CMRS pooling implementation date) will "*not adversely effect* our efforts to increase the efficiency with which carriers, including carriers who are not LNP-capable, utilize number resources":

> In this regard, several wireless carriers have provided data regarding their current number utilization, which suggests that these carriers are using a relatively high percentage of their allocated numbering resources in high-density and high-growth markets. Indeed, a number of CMRS providers support the Commission's efforts to slow the pace of area code exhaust . . . because they have been hampered in their ability to obtain access to sufficient numbering resources to meet the demand for their services in area codes where jeopardy has been declared.[48]

A handful of states in their comments effectively ask the Commission to reconsider this February 1999 decision by arguing that it should accelerate the date by which CMRS carriers implement LNP and, therefore, pooling.[49] These states have offered no reason for the Commission to change its decision, and all available facts demonstrate that CMRS participation in pooling (at least in the near future while rapid growth continues) would add marginal value to number conservation. Importantly, there are

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[46] *See CTIA LNP Forbearance Petition Order,* Docket Nos. 95-115 and 98-229, FCC 99-19 (Feb. 8, 1999). Sprint will not repeat here the numerous reasons the Commission relied upon in taking this action.

[47] *Id.* ¶ 15. *See also id.* at ¶ 43.

[48] *Id.* at ¶¶ 26 and 45. *See also id.* at ¶ 48 ("[W]e find that the public interest in efficient use of numbering resources is not harmed by this limited extension of the LNP deadline.").

[49] Maine PUC Comments at 22; North Carolina PUC Comments at 14.

other conservation measures that CMRS providers can take to improve further the efficiency in which they use numbers.[50]

Take, for instance, the situation in the Denver metropolitan area (the 303 NPA and, more recently, the 720 overlay). The Colorado Commission reduced the number of landline rate centers from 43 to 16.[51] With this development, a competitive LEC wanting to enter and serve the entire Denver market requires 16 NXX codes (160,000 numbers) — as opposed to the 43 codes (430,000 numbers) that had been needed in the past. Once pooling is implemented, a competitive LEC would require only 16,000 numbers to serve the entire market.[52]

In contrast, Sprint PCS and many other CMRS providers serve the Denver area using NXX codes assigned from only one the 16 Denver rate centers. Thus, a CMRS provider can enter the entire Denver market with only 10,000 numbers to serve 10,000 customers — as opposed to the 160,000 numbers required by a new entrant landline carrier. CMRS providers, even without participating in pooling, still require fewer numbering resources to cover the same geographic area than landline carriers participat-

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[50] For example, Maine points to the fact that "some wireless carriers use multiple codes in the same rate center to offer different types of services." Maine PUC Comments at 21-22. Sprint shares this concern. In this regard, Sprint agrees that the use of "special use" codes should be minimized. *See* Sprint Comments at n.19. It further notes that Sprint PCS does not use separate NXX codes for prepaid services. Because of the efficiencies that would be realized, all CMRS providers should be precluded from using separate NXX codes for prepaid services.

[51] *See Numbering Optimization Notice* at n.185; Colorado PUC Comments at 8 ¶ 16.

[52] Colorado notes that this consolidation has *already* saved the unnecessary assignment of *over 150 NXX codes.* Colorado PUC Comments at 11 ¶ 20. Sprint seconds Colorado's recommendation that the Commission advise states of the benefits that can be realized through rate center consolidation. *See id.* at 9 ¶ 17.

ing in pooling (10,000 vs. 16,000 numbers).[53] And, even though they require fewer numbering resources than landline carriers, CMRS providers will often have much higher utilization rates than landline carriers (because of their rapid growth and the fact that use numbers over such a large area).

In addition, and also unlike carriers committed to a rate center paradigm, a CMRS provider can assign numbers in a growth code to a customer located anywhere in a metropolitan area — as opposed to limiting use of the 10,000 numbers to a single rate center.[54] Thus, it is not at all surprising that the Colorado Numbering Task Force determined following a comprehensive study that "for both 1997 and 1998, cellular and PCS providers had an average utilization percentage of 58% overall."[55]

There is, moreover, a second important factor that makes the CMRS industry unique: it is growing so rapidly. Sprint PCS has several markets where it is consuming an entire NXX code is less than 10 weeks — the time it takes to activate a code following assignment. As a practical matter, it makes little sense to assign numbering

[53] Given these facts, Ohio's unsupported assertion — exclusion of CMRS from pooling "would drastically reduce any level of potential benefit from the very start" — is not credible. *See* Ohio PUC Comments at 30.

[54] Maine recites a situation where in one rate center a CMRS provider is using only nine of the 20,000 numbers allocate to it. Maine PUC Comments at 22. This is a matter for enforcement if the allegation is based in fact. However, the Commission should not make national policy decisions based on the practices of one carrier in one rate center.

[55] Colorado PUC Comments at 7 ¶ 12. Sprint does not mean to suggest that this 58% utilization figure cannot be improved through more rigorous conservation measures. But if the national utilization figure for all carriers were 58%, we would not be facing the crisis we now find ourselves.

resources in blocks of 1,000 to a carrier that is using the resources at a rate faster than 1,000 a week.[56]

Several other states alternatively argue that wireless-only overlays should now be permitted if the CMRS industry does not implement pooling.[57] But if CMRS carriers use numbers efficiently, a point these states do not contest,[58] it is not apparent how establishing service-specific area codes will eliminate or minimize the need to adopt relief decisions; to the contrary, given the large number of area codes now in jeopardy, establishment of service-specific area codes would simply result in the need to adopt *additional* relief plans.[59] Indeed, one of the proponents of wireless-only overlays readily admits use of wireless-only overlays "will do very little to further delay the introduction of new area codes in Connecticut."[60]

The Commission also needs to examine the subject of wireless-only overlays in the context of the impact such overlays would have on the life of the North American Numbering Plan. Sprint submits that it makes no sense to assign to CMRS providers a separate area code, with its eight million available numbers, to states such as Connecticut (population: 3.3 million); Maine (population: 1.2 million); New Hampshire

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[56] It is precisely for this reason that if the Commission ever adopts a utilization threshold (*e.g.*, 75%) as a condition to obtaining a growth code, it is imperative that it establish a "safety valve" for carriers growing faster than the administrative process is able to work.

[57] *See* California PUC Comments at 34; Connecticut PUC Comments at 8-11. This view is by no means shared by all states. *See, e.g.*, Colorado PUC at 13 ¶ 23 (opposing use of wireless-only overlays).

[58] *See* California PUC Comments at 34 ("The wireless carriers' claims of higher utilization rates may prove to be true.").

[59] The experience with the one wireless-only overlay that had been implemented (917 in New York City) suggests that once established, states will simply begin assigning numbers from the NPA to landline carriers so as to avoid making another area code relief decision for landline carriers.

(population: 1.1 million); and North Carolina (population: 6.7 milllion). Such action certainly would not extend the life our our numbering plan.

Twice in recent years the Commission has ruled that the creation of service- or technology-specific overlays "would be unreasonably discriminatory and anti-competitive in violation of Sections 201(b) and 202(a) of the Communications Act."[61] None of the states seeking reconsideration has presented any facts that would justify the Commission reconsidering this holding. To contrary, newly available facts confirm that validity of the Commission's prior determinations.[62] And, the experience from the Illinois pooling trial confirms that LNP and non-LNP carriers can co-exist in a pooling environment without undermining the value of pooling.[63]

IV. Conclusion

Unquestionably, prompt adoption and implementation of new conservation measures serve the public interest. Number pooling is an important new conservation tool, at least for area codes not now in jeopardy. However, the public interest would

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[60] Connecticut PUC Comments at 11.

[61] *Second Local Competition Order,* 11 FCC Rcd 19391, 19517 ¶ 281 (1996). *See also Ameritech NPA Order,* 10 FCC Rcd 4596, 4611-12 ¶ 35 (1995). *See also* 47 C.F.R. § 52.19(c)(3)(i) ("No group of telecommunications carriers shall be excluded from assignment of central office codes in the existing area code, or be assigned such codes only from the overlay area code, based solely on that group's provision of a specific type of telecommunications service or use of a particular technology.").

[62] Several states assert, again without any supporting facts, that there is no competition between landline and wireless carriers. *See, e.g.,* Connecticut PUC Comments at 9; New York PUC Comments at 20. In fact, head-to-head competition is beginning to occur. *See, e.g., Communications Daily* (Aug. 11, 1999)("Survey conducted by PCIA and Yankee Group showed 2% of mobile phone users said their mobile phone was only phone they used and 6% said wireless phone had replaced significant part of their landline usage.").

[63] It bears remembering that in this trial, CMRS providers can obtain a growth code only if they demonstrate (a) they have reached 75% utilization with their existing numbering resources; or (b) they will exhaust their remaining supply within 90 days.

not be served if the costs of pooling exceed the benefits or if pooling results in network failures. For all the foregoing reasons, Sprint respectfully requests that the Commission prohibit states from implementing number pooling before Efficient Data Representation becomes available.

Respectfully submitted,

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August 30, 1999

Certificate of Service

I, Anthony Traini, do hereby certify that a copy of the Comments of Sprint Corporation in CC Docket 99-200, were served by first class United States Mail, postage prepaid, upon the attached service list this 30th day of August, 1999.

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