BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own Motion Into Competition for Local Exchange Service.	R.95-04-043 (Filed April 26, 1995)
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REPORT ON THE 909 AREA CODE

Submitted in Compliance with California Public Utilities Code Section 7937, CPUC Decision 99-12-051, and Administrative Law Judge Ruling Issued on January 18, 2000

CALIFORNIA PUBLIC UTILITIES COMMISSION
TELECOMMUNICATIONS DIVISION

Respectfully submitted
November 28, 2000

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CALIFORNIA PUBLIC UTILITIES COMMISSION
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EXECUTIVE SUMMARY

Like much of the country, California currently is experiencing a numbering crisis. From 1947 to January 1997, the number of area codes in this state increased gradually from 3 to 13. During the next three years, however, the number of area codes in California nearly doubled. By the end of 1999, California had 25 area codes. The California Public Utilities Commission (CPUC) recently has implemented several measures intended to ensure efficient use of telephone numbers. Without these measures, the CPUC projects that 16 more area codes would need to be opened by the end of 2002, resulting in a statewide total of 41 area codes.

This study recounts the relatively short history of the 909 area code, one of California's newer area codes, from its creation in 1992. The 909 area code covers portions of San Bernardino, Riverside and Los Angeles Counties, and is contained largely within the San Bernardino Metropolitan Statistical Area (MSA), with the remainder in the Los Angeles-Long Beach MSA. The CPUC suspended the previously ordered 909 area code split and overlay pending this evaluation of telephone number utilization, and ordered a number pooling trial to begin in the 909 area code beginning on December 8, 2000.[1] This report should be viewed in a broader context than the facts pertaining solely to the 909 area code. The report evaluates the status of number availability in the 909 area code, and discusses the various state and federal policies that govern number use in California and nationwide. In addition, the report analyzes number use by carrier category, and identifies what measures the CPUC can employ in the 909 and other area codes to improve efficiency of number use in order to avoid prematurely opening new area codes. Data is self-reported by the companies; the CPUC staff has not audited any of the 909 utilization data submitted for this study and report.

The utilization study sheds new light on the numbering crisis in the 909 area code. The data reveals that, despite increasing demand for numbers, the 909 area code is not fully utilized. The study found that, of the 7.9 million useable numbers in the 909 area code,

[1] Historically, telephone numbers have been allocated to carriers in blocks of 10,000, as a complete prefix, such as (909) 703-XXXX. Number pooling allows carriers to obtain numbers in blocks of 1,000 or even fewer numbers.

approximately 3.9 million, or roughly half, presently are not in use. The data further establishes that the 909 area code possesses considerable room for growth, and thus, aggressive measures such as splits or overlays are not yet warranted in the 909 area code. The report further urges the CPUC to seek from the FCC authority to implement Unassigned Number Porting (UNP) as a means to more efficiently use numbers still available in the 909 area code.

This report is filed in compliance with CPUC Decision (D.) 99-12-051, and with AB 406, enacted by the California Legislature in the 1999 legislative session. (Chapter 99-809, 1999.) AB 406, codified as Public Utilities Code Section 7937, requires the CPUC to obtain historical telephone number use data from every telecommunications company in California. The CPUC's Telecommunications Division (TD) first obtained and analyzed data from the 310 area code in Los Angeles late in 1999, and produced a utilization report on 310 in March 2000. This report on the 909 area code is one of a group of reports covering number utilization in specific area codes.

FINDINGS

The 909 area code contains approximately 7.9 million telephone numbers available for consumer use. These numbers are available to telecommunications companies, which obtain the numbers from the North American Numbering Plan Administration (NANPA),[2] and in turn, assign the numbers to their customers for their immediate use. Alternatively, companies may reserve numbers for future use, or retain numbers for some internal (administrative) use. Some companies provide blocks of numbers to resellers or "dealers", which then assign those numbers to customers. The FCC deems numbers that companies allocate to resellers to be "intermediate" numbers. In addition, each assigned number, after disconnection, must "age" during a transition period before assignment to the next customer. Many companies have inventories of numbers in the aging process. Finally, some numbers are not available for public use, as they have been set aside for emergency purposes, for technical network support, or for other reasons.

[2] The NANPA is an entity currently managed by NeuStar, Inc. The FCC chose NeuStar, formerly Lockheed Martin, to perform the functions of numbering administration and area code changes nationwide.

The FCC has defined numbers in these five categories–assigned, administrative, reserved, intermediate, or aging–as unavailable, either because they are already in use or are designated for some present or future use. Of the nearly 4 million available numbers in the 909 area code, approximately 850,000 have been set aside by the CPUC for a lottery for companies seeking numbers, and for the 909 number pool. Companies possess the remaining 3 million numbers. Wireline carriers, such as Pacific Bell and many competitive local exchange carriers, hold roughly 2.2 million available numbers, while wireless carriers hold approximately 830,000 available numbers.

At the same time, the 909 study finds that, under FCC rules, about 2 million available numbers cannot be contributed to the 909 lottery, nor can they be contributed to the 909 number pool for reassignment to other companies. The FCC has determined that wireless carriers do not have to participate in number pools at this time.[3] In addition, the FCC has determined that the CPUC may only require wireline carriers to contribute to a number pool those blocks of 1,000 numbers that are 10% or less contaminated[4], meaning those blocks in which only 100 or fewer numbers are unavailable. However, wireline carriers may also keep a portion of the 10% or less contaminated blocks if they need to use those blocks within six months. Thus, 2 million numbers in the 909 area code are available only to the companies holding those numbers, because they are in blocks that are more than 10% contaminated, are held by wireless carriers, or are in blocks that are 10% or less contaminated but kept by wireline carriers for their six-month inventories. The study further finds that, of the 3.9 million numbers not in use, about 2.6 million numbers could be available to companies through the 909 number pool if (a) companies were required to donate blocks with higher contamination levels to the pool, and (b) wireless carriers were required to participate in the 909 number pool. The first table below illustrates the current distribution of numbers. The second table shows the distribution that would occur if all the recommendations in this report were implemented.

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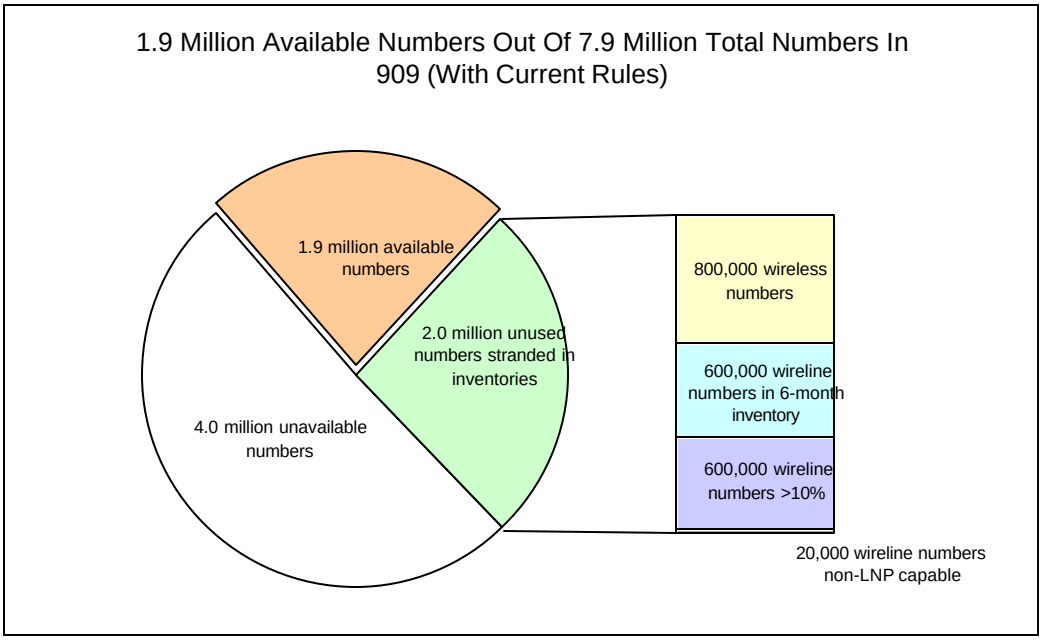
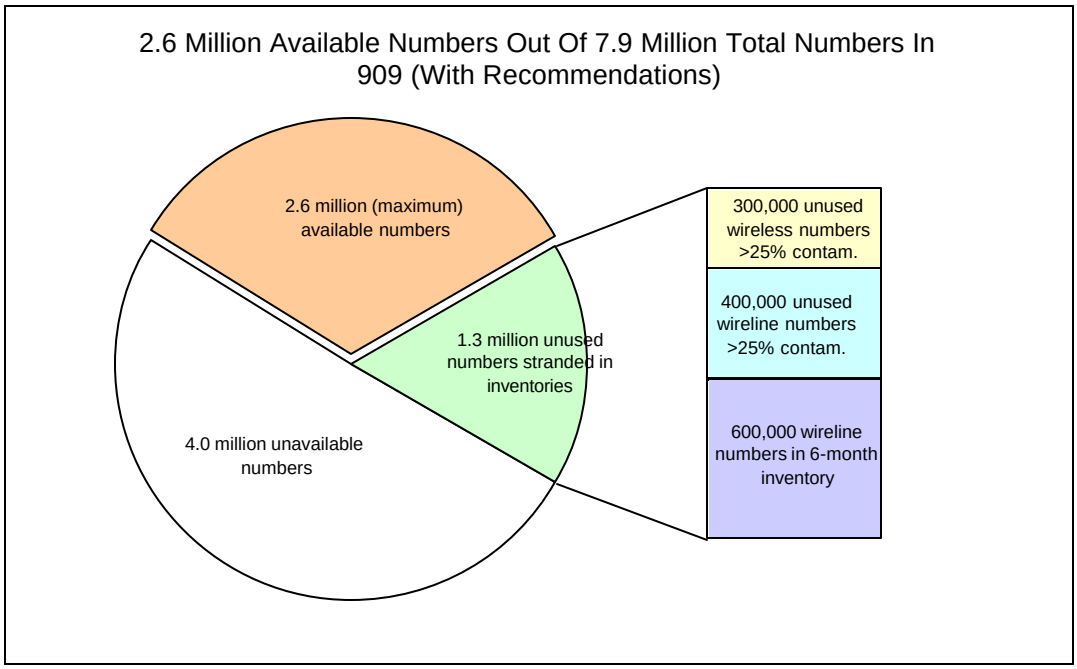
[3] At present, only wireline carriers are required to participate in number pooling. The FCC has granted most wireless carriers an extension of time, until November 2002, to implement the technology that will support number pooling. The FCC has indefinitely exempted paging companies from implementing the technology necessary to pool numbers.

[4] The percentage of numbers in use in a particular block of 1,000 numbers is referred to as the "contamination" level.


1.9 Million Available Numbers Out Of 7.9 Million Total Numbers In 909 (With Current Rules)
1.9 million available numbers
2.0 million unused numbers stranded in inventories
4.0 million unavailable numbers
800,000 wireless numbers
600,000 wireline numbers in 6-month inventory
600,000 wireline numbers >10%
20,000 wireline numbers non-LNP capable



Finally, the study notes that companies identify 4 million numbers as unavailable. TD staff recommends specific measures the CPUC can employ to ensure that companies use those unavailable numbers more efficiently. Given the near doubling of the number of area codes in California from 1996 to 1999, this vital public resource should be used as efficiently and effectively as possible. The CPUC and the telecommunications industry should strive to minimize the quantity of numbers left "stranded" in company inventories. The 909 Area Code Report recommendations are summarized in Appendix I.

CHAPTER ONE: OVERVIEW OF NUMBERING

A. Inefficient Use and Increasing Demand for New Numbers in California Is Causing Area Code Proliferation

California is currently experiencing an explosive demand for telephone numbers and area codes. The increased demand for numbers is due to many factors, including competition for local phone service, as well as the popularity of faxes, pagers, cell phones, internet services, etc. California's robust economy and the growth in the state's population also contribute to the increased demand for telephone numbers. This increase in demand is complicated by a number allocation system dating from the 1940s that is inefficient in today's competitive marketplace.

Prior to 1997, one phone company[5] provided local telephone service to all customers in a particular area, and new area codes were opened as the population grew. The number of California area codes rose steadily from 3 in 1947 to 13 in 1992, and stayed at that level until January 1997. The Telecommunications Act of 1996 brought competition to local telephone service and competitive local phone companies[6] began to enter the marketplace, each requiring its own stock of numbers. The traditional system of number allocation was not designed to provide telephone numbers to more than one company.

In the past, when telecommunication companies needed telephone numbers to serve their customers, they received blocks of 10,000 numbers, i.e. prefixes. Because companies were assigned blocks of 10,000 numbers, they may have been assigned more numbers than they needed. For example, under this system, a company with only 500 customers would have received a 10,000 number block, the same quantity of numbers a company with 9,500 customers would have received. Thus, numbers are taken in these large blocks, creating an artificial demand for more numbers, which in turn fuels the need to open more area codes. The need to assign 10,000 numbers is a practice from the past when one telephone company provided service to all customers in its territory. Today, with over 200 telecommunications companies in the state needing numbers to serve customers, and with the limited quantity of

[5] Today called the Incumbent Local Exchange Carrier (ILEC)

[6] Today called Competitive Local Exchange Carriers (CLEC)

numbers available in each area code, this process is no longer an efficient way to allocate numbers.

The rise in demand for numbers combined with the inefficient allocation system for numbers has forced the rapid opening of new area codes throughout the state. Since 1997, the number of area codes has nearly doubled to 25. Unless major changes occur, the CPUC projects that 16 more area codes would need to be opened in California by 2002. With more and more companies needing numbers of their own, new area codes are not necessarily the best solution.

B. 909 History and CPUC Decisions

The 909 area code is a classic example of area code proliferation in California. The 909 area code, which includes cities and communities in parts of the counties of Riverside, San Bernardino, and Los Angeles, was implemented in 1992 when it was geographically split from the 714 area code. The 714 area code was created in 1951, when it was split from the 213 area code, one of the three original area codes assigned to California in 1948.

Despite the fact that the 909 area code is only eight years old, the North American Numbering Plan Administration (NANPA) determined in early 1998 that the 909 area code was running short of numbers. In response to the NANPA's determination that the CPUC must act to provide additional numbers for phone company use, in March 1999 the CPUC approved for the 909 area code a two-phase change: a geographic split and subsequent overlay. In an overlay, a new area code is created covering the same geographic area as the existing area code. Under CPUC and Federal Communications Commission (FCC) rules, all customers with numbers in either the new or the old area code are required to dial 1 plus the area code plus the seven digit number, (known as 1 + 10 digit dialing) to reach any other number in either of the two area codes. The phase I split was scheduled to be implemented on December 16, 2000, with mandatory 1 + 10 digit dialing to begin on September 9, 2000. The phase II overlay was scheduled to be implemented on February 10, 2001, with mandatory 1 + 10 digit dialing to begin on November 4, 2000.

When the first overlay and 1 + 10 digit dialing were implemented in the 310 area code (located in the Los Angeles area) in April of 1999, customers expressed strong objections to the overlay and to the requisite 1 + 10 digit dialing. The CPUC halted the 310 overlay in September 1999. In December of 1999, by Decision 99-12-051, the CPUC suspended all

overlays previously approved, which included the overlay in the 909 area code, and suspended the split of the 909 area code that was to precede the 909 overlay. In that same decision, the CPUC required its Telecommunications Division (TD) staff to study number use to determine the quantity of available, unused numbers in the 909 area code. This report fulfills that requirement.[7]

1. Monthly Lottery Allocates Prefixes

In all the area codes in danger of running out of numbers, the CPUC has instituted a lottery process to fairly allocate the remaining prefixes among phone companies when demand exceeds supply. The 909 prefix lottery began in March 1998. Currently, the CPUC distributes two prefixes (one initial prefix and one growth prefix[8]) in the monthly 909 lottery. Each company submits applications for initial and growth prefixes to the NANPA Code Administrator. If more applications are received than can be satisfied in that month, the first applicants chosen by random drawing are assigned a prefix, and the remaining applicants are placed on a priority list and receive prefixes in one of the following months' lotteries in the order they were drawn. Once every company requesting a prefix has received one, a new drawing is held and additional companies are eligible to receive prefixes. Twenty-one prefixes have been allocated in the 909 area code through this process between January 1, 2000 and August 31, 2000.

C. CPUC Efforts to Resolve Are a Code Proliferation

Recognizing the substantial social and economic burdens associated with constant area code changes, the CPUC has taken steps to resolve the numbering crisis. Responding to widespread public outcry over the proliferation of new area codes, the CPUC suspended, beginning in December 1999, all plans for new area codes previously approved. In April, 2000, the CPUC ordered a number pooling trial in the 909 area code, to begin December 8,

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[7] In addition, the California state legislature enacted Section 7937 of the California Public Utilities Code. Effective on January 1, 2000, Section 7937 requires the CPUC to prepare and submit to the Legislature, by July 1, 2001, a study of the telecommunications industry's usage rates of telephone numbers in all California area codes. This report also complies with that legislative requirement with respect to the 909 area code.

[8] A company's request for its first prefix in the rate center is considered an initial request; requests for additional prefixes in the rate center are considered growth requests.

2000. In July 2000, the CPUC adopted other number conservation measures, including establishing fill rate and sequential numbering rules.

1. Number Pooling

The CPUC, with FCC approval, has begun pooling trials in four area codes, in order to boost the efficiency of phone number allocation. Number pooling allows telephone companies to receive numbers in smaller blocks than the traditional 10,000 numbers, enabling multiple providers to share a prefix, thereby utilizing this limited resource much more efficiently. The technology that enables the network to support the assignment of smaller blocks is referred to as Local Number Portability or LNP.[9] LNP was originally mandated by the FCC as a means to enable customers to retain their telephone numbers when they switch telephone service to another local provider. This same platform is utilized for number pooling. The FCC had required all wireline carriers to become LNP capable by the end of 1998 in the most populous 100 Metropolitan Statistical Areas (MSAs) in the country[10]. Thirteen of the top 100 MSAs are located in California; the 909 area code is in two of them.

Though LNP technology has existed for several years, the FCC later granted cellular and PCS companies an extension of time until November 2002 to become LNP capable. The FCC exempted paging companies indefinitely from the LNP requirement.[11] Thus, at this time only wireline carriers[12] can participate in number pooling. In the area codes with number pooling, wireline carriers participate in pooling and wireless carriers participate in the lottery. In the remaining area codes, all phone companies participate in the lottery.

The CPUC has been aggressively setting up number pools. The CPUC initiated a mandatory number pooling trial for the 909 area code, the fourth number pooling trial in the state, to begin on December 8, 2000. Pursuant to Assigned Commissioner's Ruling dated April 21, 2000, the CPUC placed 27 prefixes on hold to provide an initial inventory of codes for this pool. All companies with numbers in 909 are required to make initial donations of 1,000-number blocks to the pooling administrator by November 27, 2000. Under the number pooling program, all LNP-capable carriers will receive numbers in blocks of 1,000 in the 909

[9] See Chapter Three of this report for a discussion of LNP.

[10] FCC's Opinion and Order on Telephone Number Portability FCC 97-74, issued March 6, 1997

[11] Cellular companies, PCS companies, and paging companies comprise the wireless category.

[12] ILECs and CLECs

area code on an as-needed basis. There is no rationing process in the pooling trial and the blocks received can be put into service almost immediately upon receipt. A complete discussion of the status of the 909 pooling trial is found later in this report.

2. Improved Number Inventory Management

While the pooling trials have improved the efficiency of the distribution of numbers to companies, companies have not had strong incentives to efficiently manage the numbers already allocated to them. Thus the CPUC ordered companies to improve number inventory management with measures including rules on fill rates and sequential numbering.

In July 2000, the CPUC issued Decision 00-07-052, which extended number conservation measures adopted in the 310 area code to other area codes within California. These number conservation measures include the following:

- Companies are required to return to the NANPA any prefix held for more than six months without being used.
- "Imminent exhaust criteria" are established in all area codes with lotteries or pooling trials. In each rate center in which companies request additional numbers, they must first provide to NANPA a form demonstrating they will be out of numbers within three months.
- Companies must satisfy a minimum 75% fill rate requirement before being eligible to request a growth prefix in any area code in rationing and before being eligible to receive a thousand-block through a number pool. Companies must assign numbers in thousand-block sequence, assigning numbers in the next block only once a 75% fill rate has been attained in the prior block.

TD anticipates these policies will potentially free more numbers for use in number pooling, to be allocated through the lottery, or to be used otherwise by companies. Indeed, these measures have already achieved some positive effects. For example, since the CPUC extended the 75% fill rate and imminent exhaust rules to all area codes, including 909, CPUC staff has observed that the demand for growth prefixes in each month's lottery has declined. Further evidence of the effectiveness of the CPUC's number conservation policies is the increase in the number of excess prefixes in the 909 area code being returned to the NANPA by companies. Between January 1 and the end of August 2000, 11 unused prefixes were returned by companies, offsetting over half of the 21 prefixes that were issued during the same period. As of August 31, 2000, there were 48 remaining prefixes available for assignment in

the 909 area code. These 48 prefixes are in addition to the 27 prefixes set aside for the 909 pool.

3. CPUC Efforts at Federal Level

The FCC has exclusive jurisdiction over numbering in the U.S. Therefore, the CPUC's number conservation and allocation policies (pooling, lottery, fill rates and sequential numbering) are governed by the FCC's delegation of authority to the states. In recognition of the severity of the numbering crisis in California, the CPUC has aggressively petitioned the FCC for additional authority. As a result, the FCC has delegated authority to plan and implement area code changes, as well as authority to implement number conservation measures.

a. Authority Regarding Pooling

On April 26, 1999, the CPUC filed a petition with the FCC requesting authority to institute number pooling trials and other number conservation measures within the state to better manage this public resource. On September 15, 1999, the FCC granted that petition, allowing the CPUC to institute mandatory number pooling on a trial basis, deploying it sequentially in one MSA at a time. When the FCC granted the CPUC the authority to deploy various numbering resource optimization strategies, including the authority to institute thousand-block number pooling trials, it also clarified that California's authority will be superseded by future national measures adopted by the FCC.

On March 31, 2000, the FCC released the Numbering Resource Optimization Report and Order and Further Notice of Proposed Rulemaking (NRO Order).[13] The NRO Order sets forth rules for defining numbers, forecasting, tracking and auditing companies' use of numbers, and for conservation measures associated with number usage, including but not limited to number pooling. The definitions of numbers and the timelines for aging and reserved numbers that were adopted in that order have been incorporated into the utilization data cited herein.

With the release of the NRO Order, the FCC adopted a number of administrative and technical measures that will allow it to monitor more closely the way numbering resources are

[13] Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 99-200 FCC 00-104 (released March 31, 2000).

used and to promote more efficient use of numbering resources. In particular, the FCC adopted a nationwide system for allocating numbers in blocks of one thousand, rather than ten thousand, wherever possible, and announced its intention to establish a plan for national rollout of thousand-block number pooling.

Because the FCC recognized that state thousand-block number pooling trials underway might not conform to the national standards set forth in the NRO Order, the FCC gave state commissions until September 1, 2000 to conform their thousand-block number pooling trials to the national framework. One requirement imposed in California which differs from the national standards is the requirement that companies meet a 75% fill rate in each block before they may receive an additional block from the pooling administrator. The CPUC recognized the 75% fill rate as a critical factor in the success of the 310 pooling trial and petitioned for a waiver of compliance with the national rules. On August 31, 2000, the FCC issued an order granting the CPUC authority to continue to use its own pooling rules until the FCC decides on the merits of the petition, or until December 31, 2000, whichever occurs sooner. This allows California to continue applying the 75% utilization rate in its number pooling efforts.

The NRO further constrains the CPUC by concluding that the rollout of thousand-block number pooling should first occur in area codes that are located in the most populous 100 MSAs. In its comments prior to the release of the NRO, the CPUC had argued that California would be precluded from exploring whether number pooling could alleviate the crises for number resources in many parts of the state that are located outside of the top 100 MSAs. The CPUC believes the FCC should delegate authority to the states to order deployment of LNP. This grant of authority to California would make pooling possible throughout the state.

b. Authority Regarding Technology-Specific Area Codes

Currently, state commissions are constrained by the FCC from establishing an area code specifically for wireless telecommunications services. On April 26, 1999, the CPUC filed another petition with the FCC requesting authority to create service-specific or technology-specific area codes. In the 909 area code, there are 26 wireless carriers holding 191 prefixes. If the CPUC were allowed to create a separate area code for those companies, these 191 prefixes in the 909 area code could be reassigned to other phone uses, thus

prolonging the life of the existing area code. To date, the FCC has not acted on the CPUC's petition.

On September 28, 2000, Governor Davis signed into law Senate Bill (SB) 1741, authored by Senator Bowen. SB 1741 requires the CPUC to request authority from the FCC to require telephone corporations to establish technology-specific area codes based on wireless and data communications, and to permit 7-digit dialing within both that technology-specific area code and the underlying pre-existing area code or codes. The bill requires the CPUC to use any authority so granted unless it makes a specified finding that there is reason not to do so. The legislation also prohibits the CPUC from implementing any authority granted by the FCC in a manner that impairs number portability. The petition that the CPUC filed with the FCC in April 1999 fulfills the technology-specific area code requirement set forth in the bill.

The bill also prohibits the CPUC from approving new area codes unless a telephone utilization study has been performed and all reasonable telephone number conservation measures have been implemented. This utilization study fulfills the telephone utilization study portion of SB 1741.

4. Utilization Studies

Before requiring the residents and businesses of the 909 area code to undergo another area code change, the CPUC recognized the necessity of determining the number of telephone numbers that are in use and the number that are yet to be used. To that end, the CPUC instituted a utilization study of the 909 area code and required companies to provide usage data to the CPUC as of April 30, 2000. he TD contracted with NeuStar to collect the data. NeuStar submitted the aggregated data in its entirety to TD on August 18, 2000. The study parameters and filing requirements appear in Appendix A, as well as a list of companies that have been allocated numbers in the 909 area code.

CHAPTER TWO: 3.9 MILLION UNUSED NUMBERS IN THE 909 AREA CODE

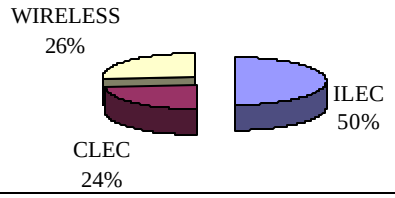
Of the 7.9 million numbers in the 909 area code, companies hold 7 million. The other 0.9 million numbers have yet to be assigned to companies. The CPUC's utilization study found that, of the 7 million numbers held by companies, 3 million remain unused in their inventories. Therefore, 3.9 million numbers in the 909 area code remain unused. A portion of these unused numbers can be made available for use by all companies, either through pooling or through the monthly lottery allocation process. In addition, companies have reported 4.0 million numbers as unavailable. A portion of these unavailable numbers can be used more efficiently if the recommendations contained in this report are implemented.

A. The Scope of the Utilization Study

1. Prefix Distribution Statistics

The CPUC asked 54 companies, holding 696 prefixes (6.96 million numbers) in the 909 area code, to report their utilization data, with a reporting cutoff date of April 30, 2000. Table 2-1 shows the distribution of these prefixes by type of carrier ; incumbent local exchange carrier (ILEC), competitive local exchange carrier (CLEC),[14] and wireless carrier.

Table 2-1
Distribution of Prefixes by Type of Carrier



2. Companies Reporting

Of the 54 companies, 47 submitted utilization data; one company submitted data too late to be included in the summaries provided by NeuStar. Staff has considered this late filer in its analysis.

[14] Wireline carriers include ILECs and CLECs.

3. Non-Reporting Companies

Two of the remaining seven companies holding five prefixes in the 909 area code are no longer offering service in the 909 area code. Both CRL Network Services and Justice Technology wrote to NeuStar that they were returning all their prefixes in California.

The NANPA has confirmed that CRL Network Services has returned the prefix it held in the 909 area code. However, Justice Technology, holding four prefixes in 909, has not yet returned its prefixes.

Recommendation for Prefixes Held by Companies No Longer in Service

? *For the prefixes not yet returned, the CPUC should take action to require the NANPA to reclaim the prefixes.*

Five companies holding prefixes in the 909 area code failed to report utilization data. These five companies hold six prefixes in 909. Table 2-2 summarizes this information.

Table 2-2

Non-Reporting Companies

Company	OCN	Rate Center	Prefix
PageCell, Inc.- CA	6586	Ontario	470
PagePrompt, Inc.	6588	Ontario	407
PagePrompt, Inc.	6588	Ontario	934
Paging Dimensions	6869	Ontario	401
Radiocall Svc. & Systems	6854	Ontario	400
Macland	6348	Anaheim	813

Administrative Law Judge's Ruling Ordering Carriers to Submit Utilization Data, dated June 15, 2000, ordered twelve delinquent companies to submit utilization data within 20 days or be subject to sanctions. PageCell, PagePrompt, Paging Dimensions, Radiocall, and Macland were listed among the twelve companies.

In addition, the CPUC has already issued a report on number utilization in the 310 area code on March 16, 2000. After the report's issuance, the CPUC issued Administrative Law Judge's Ruling Ordering Carriers to Submit Utilization Data, dated May 11, 2000. It should

be noted that PageCell, PagePrompt, Paging Dimensions, and Radiocall were listed in that ruling as companies who did not submit utilization data for the 310 area code.

Recommendations for Data Submittal

? *The CPUC should direct the NANPA to withhold issuing prefixes to these companies until the required information is submitted. The CPUC should also consider levying fines or other penalties for failure to comply. If these prefixes are not being used for customers, the CPUC should direct the NANPA to reclaim the prefixes as soon as possible.*

B. Numbers Available in the 909 Area Code

1. 3.9 Million Numbers Available in the 909 Area Code

The 909 area code has 3.9 million unused numbers. Of these unused numbers, TD found that companies held 3.0 million numbers in their inventories.[15] These numbers held in inventory are currently not used for any purpose but held in anticipation of future need. The remaining 0.9 million unused numbers are not yet assigned to companies : 270,000 have been set aside for number pooling and 580,000 numbers are available for allocation in the 909 monthly lottery. The summary of available numbers is shown in the table below.

[15] A further breakdown of the 3.0 million available numbers held by carriers is shown in Table B-1 in Appendix B.

Table 2-3

Summary of Available Numbers

Wireline Carriers	2,199,027
Wireless Carriers	679,018
Type 1 Carriers[16]	153,223
Total Available/Unused Numbers Held by Carriers	**3,031,268**
Numbers Set Aside for the 909 Pooling Trial	270,000
Numbers Available for the 909 Lottery	580,000
Total Available Numbers in the 909 Area Code	**3,881,268**

Not all of the 3.9 million unused numbers are immediately available to every company that wants numbers. Of the 3.9 million, a maximum of 1.9 million numbers[17] are estimated to be available to all companies via the pooling trial or the lottery. The remaining 2.0 million numbers are only available to the companies that hold them. As shown in the table below, the CPUC could shift 0.7 million numbers from one category to the other by adopting the recommendations[18] in this report: Of the 3.9 million unused numbers, those actions could result in making a maximum of 2.6 million numbers[19] available to all companies, with the remaining 1.3 million numbers available to the companies that hold them.

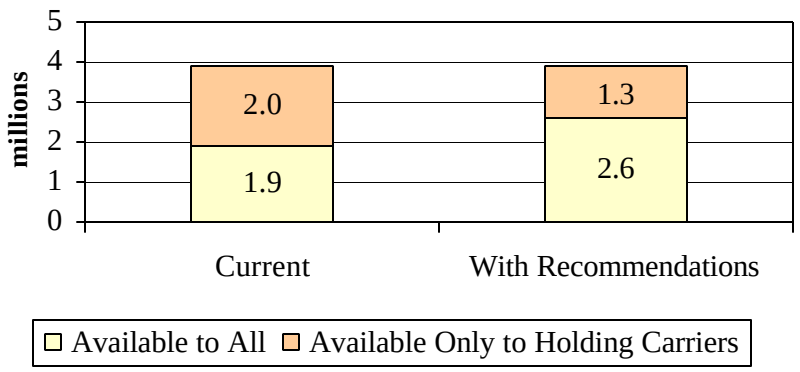
[16] Type 1 carriers are not considered wireline or wireless companies. Type 1 numbers are programmed in the wireline company's end office, but are used by a wireless company.

[17] 1.9 million numbers is comprised of 1 million estimated pooling donations by companies, plus 270,000 initially set aside by the CPUC for pooling, plus 580,000 available through the lottery.

[18] Recommendations dealing with receiving authority from the FCC to increase contamination threshold (25%) for pooling, recovering blocks from special use codes, recovering unused numbers from non-LNP capable carriers and Type 1 carriers, and requiring wireless carriers to participate in pooling, as described later in this report.

[19] See Table B-2 in the appendix for a detailed breakout of the 2.6 million numbers.

Table 2-4
Distribution of Unused Numbers



Current technology requires a company to be LNP capable in order to donate numbers for another company to use. All wireline carriers in the 909 area code are required to be LNP capable.[20] Wireline carriers hold 2.2 million unused numbers in the 909 area code. In order for the unused numbers to be retrieved from company inventories, the FCC requires these unused numbers to be retrieved from blocks which are 10% or less contaminated.[21] Of wireline companies' 2.2 million unused numbers, 1.6 million are contained in 1,606 thousand-blocks held by LNP-capable companies that are 10% or less contaminated. However, not all of these 1.6 million numbers can be retrieved from companies' inventories because companies need to have enough numbers to meet anticipated future need.[22] Both the CPUC and the FCC have determined that six months of inventory is a reasonable quantity to hold for future use. We will not know how many of these 1.6 million numbers will be available for pooling until companies submit their pooling block donations to the pooling administrator on November 27, 2000.[23] In the meantime, a reasonable estimate of numbers likely to be donated to the 909 pool, based on the experience of the 310 pool, is 1.0 million[24]. The difference between the 1.6 million maximum potential currently poolable numbers that wireline carriers hold and the 1.0

[20] Although all wireline carriers are required to be LNP capable, two wireline carriers in the 909 area code remain non LNP capable.

[21] 10% or less contaminated means that out of 1,000 numbers in a block, 100 numbers or less have been classified as unavailable.

[22] Future need may include serving new customers or offering new services.

[23] See Chapter 3 for the status of pooling in the 909 area code.

[24] See Footnote on Table B-2 in Appendix B for the derivation of this estimate.

million numbers estimated as likely to be donated to the pool consists of 600,000 numbers that companies are estimated to need for their six-month inventories.

The remaining 620,000 of the 2.2 million unused numbers cannot be retrieved, either because the numbers are in blocks more than 10% contaminated or because they are in non-LNP-capable blocks. However, companies can immediately use these numbers to provide service to their customers or meet other needs. Wireline carriers hold 590,000 numbers in blocks that are more than 10% contaminated.[25] Non-LNP capable wireline carriers hold 20,000 of the 2.2 million unused numbers. Special use codes [26] are generally not LNP capable, and constitute 10,000 of the 2.2 million unused numbers.

Wireless carriers hold 679,000 unused numbers in the 909 area code. Of these unused numbers, 459,000 are in blocks that are 10% or less contaminated, while 220,000 numbers are in blocks more than 10% contaminated. Until wireless carriers become LNP capable in November 2002, none of these numbers may be reallocated to other companies. In the interim, wireless carriers may assign these numbers to their own customers.

C. Analysis of Available Numbers

1. Analysis of Wireline Carriers' Contamination Rates

The CPUC requires each company participating in the 909 number pool to donate blocks that are 10% or less contaminated, excluding those retained for the company's six-month inventory.[27]

TD analyzed the 909 utilization data to determine the availability of numbers within blocks of different contamination rates, to assess different contamination thresholds that could be employed in the number pool. The following table summarizes available numbers by contamination rate by rate center for wireline carriers.

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[25] See Table B-1 in Appendix B. The 589,848 is comprised of 95,743 numbers from blocks that are 10-15% contaminated, 59,217 from 15-20% contaminated, 23,406 from 20-25% contaminated, and 411,482 numbers from blocks that are more than 25% contaminated. Later in this chapter, TD recommends additional steps that can be implemented to make more of the 589,848 numbers available for number pooling.

[26] For a discussion of numbers held for special uses, see Section D.1.c of this chapter.

[27] INC's Thousand Block (NXX-X) Pooling Administration Guidelines, dated January 10, 2000, state that carriers should donate specified thousand-blocks.

Table 2-5
Wireline Carriers' Available Numbers by Block Contamination Level

	Rate Center	0%	> 0% to 10%	> 10% to 15%	> 15% to 20%	> 20% to 25%
1	Anaheim	0	0	0	0	0
2	Arlington	52,000	26,486	2,644	814	0
3	Arrowhead	8,000	1,998	899	0	0
4	Banning	14,000	11,728	2,655	4,060	0
5	Big Bear City	8,000	5,841	899	1,662	0
6	Big Bear Lake	8,000	3,996	899	800	0
7	Calimesa	16,000	8,842	1,796	0	0
8	Chino	41,000	26,449	1,792	1,620	799
9	Claremont	44,000	42,414	2,654	2,419	794
10	Colton	39,000	29,833	3,527	3,211	1,562
11	Corona	57,000	42,524	7,099	4,026	2,347
12	Crestline	8,000	999	899	0	0
13	Diamond Bar	55,000	32,307	2,655	2,438	759
14	Elsinore	14,000	3,991	899	824	780
15	Etiwanda	17,000	6,948	899	0	0
16	Fontana	17,000	23,570	3,550	0	0
17	Hemet Anza	3,000	926	0	0	0
18	Hemet	18,000	9,918	899	836	0
19	Hemet Homeland	3,000	5,940	899	0	0
20	Hemet Sage	3,000	0	0	842	0
21	Hemet S. Juan	13,000	6,876	899	1,615	0
22	Highland	7,000	16,015	1,787	0	0
23	Idyllwild	7,000	6,923	899	800	1,547
24	Lake View Nuevo	0	0	875	0	0
25	Marshall	23,000	20,704	3,552	800	0
26	Mentone	15,000	6,974	899	0	0
27	Mira Loma	8,000	9,535	899	0	752
28	Moreno	14,000	15,680	1,767	0	1,568
29	Murrieta	22,000	9,936	899	1,637	0
30	Ontario	38,000	48,349	17,683	9,755	2,330
31	Perris	23,000	11,649	899	800	0
32	Pomona	38,000	41,685	1,751	1,628	3,929
33	Redlands	31,000	25,591	1,798	800	0
34	Rialto	30,000	25,720	2,635	800	799
35	Riverside	59,000	36,170	4,409	4,036	0
36	Running Spring	1,000	922	0	0	0
37	San Bernardino	46,000	22,232	7,923	4,848	2,343
38	Santa Ana	0	0	0	0	0
39	Sun City	22,000	13,678	1,798	827	0
40	Temecula	35,000	23,355	4,366	2,431	2,325

41	Temescal Canyon	11,000	0	880	833	0
42	Upland	61,000	37,771	2,662	3,252	772
43	Woodcrest	5,000	10,704	899	803	0
	Total	934,000	675,179	95,743	59,217	23,406

The first two numeric columns of Table 2-5 show the potential numbers available to the pooling trial, except for those numbers kept for companies' six-month inventory, under current rules. Available numbers in one rate center cannot be used in another rate center. Table 2-5 shows that all rate centers except Anaheim, Lake View Neuvo, and Santa Ana have available numbers that companies could donate to the pool. Unless some numbers that were reported as unavailable become available and are donated to the 909 pool, the pooling administrator presumably will have to open new prefixes in these rate centers if companies request blocks of 1,000 numbers in them.

The last three columns of Table 2-5 capture available numbers in blocks that are more than 10% contaminated but no more than 25% contaminated. Under the current 909 number pool rules, companies retain thousand-number blocks that are more than 10% contaminated. Increasing the contamination rate threshold for donations from 10% to 25% would potentially free up an additional 178,000[28] numbers for use in the number pool. TD cautions that, although Table 2-5 shows potential results from increasing allowable contamination levels, further analysis and input from the industry may be necessary to determine accurately the quantity of additional blocks that could be added to the pool while still leaving companies with a six-month inventory.

As shown by Table 2-5, and also shown graphically in Tables B-3a and B-3b of Appendix B, most rate centers have available numbers from blocks of differing contamination levels up to 25%. The tables show that if the contamination level were increased from 10% to 25%, more unused numbers exist in most rate centers that potentially could be donated to the pool.

Recommendation from Block Contamination Analysis of Wireline Carriers

? *The CPUC should petition the FCC to increase the contamination level for pooling to 25%. If the FCC grants the petition, the CPUC should increase the maximum*

[28] Additional numbers from the last three columns of Table 2-5: 95,743 + 59,217 + 23,406 = 178,366.

contamination level of donated blocks from 10% to 25% for all LNP-capable carriers.

2. Analysis of Wireless Carriers' Contamination Rates

Under current FCC rules, cellular and PCS companies are exempt from number pooling until November 2002 when they must become LNP capable. The FCC has indefinitely exempted paging companies from becoming LNP capable. Table 2-6 shows available numbers in blocks of differing contamination levels held by wireless carriers. Wireless carriers hold 459,000 available numbers in blocks that are 10% or less contaminated, as shown in the first two numeric columns of Table 2-6. Wireless carriers also have 27,000 available numbers in blocks with contamination levels greater than 10% but less than or equal to 25%, as indicated by the last three columns of Table 2-6. Of these 486,000 unused numbers held by wireless carriers, TD estimates that 243,000 are held by paging companies.

Table 2-6
Wireless Carriers' Available Numbers by Block Contamination Level

	Rate Center	0%	> 0% to 10%	> 10% to 15%	> 15% to 20%	> 20% to 25%
1	Anaheim	26,000	0	0	0	0
2	Banning	18,000	0	0	0	0
3	Colton	14,000	8,903	0	0	764
4	Corona	38,000	998	0	813	1,508
5	Elsinore	8,000	1,997	0	0	0
6	Hemet	11,000	3,848	0	0	0
7	Highland	3,000	0	0	0	0
8	Lake View Nuevo	8,000	1,946	0	0	0
9	Mira Loma	1,000	0	0	0	0
10	Murrieta	18,000	988	0	800	0
11	Ontario	141,000	11,562	1,723	0	2,312
12	Perris	9,000	0	897	0	0
13	Pomona	5,000	5,821	0	0	0
14	Riverside	46,000	22,660	3,464	1,638	10,064
15	San Bernardino	20,000	1,988	858	827	0
16	Sun City	3,000	0	0	0	0
17	Temecula	22,000	0	0	831	0
18	Upland	5,000	1,942	0	0	0
19	Woodcrest	0	0	0	0	775
	Total	396,000	62,653	6,942	4,909	15,423

Note: Rate centers with no available numbers in blocks 25% or less contaminated are not shown.

Because the FCC has granted wireless carriers an extension of time to implement LNP, no wireless carriers serving the 909 area code are capable of implementing LNP. Thus, wireless carriers cannot participate in number pooling at this time, resulting in 486,000 unused numbers in blocks between 0% and 25% contaminated in the 909 area code.

Recommendations from Block Contamination Analysis of Wireless Carriers

? *When cellular and PCS companies become LNP capable in November 2002, the CPUC should direct those wireless carriers to donate to and participate in all number pooling trials in California, using the same contamination threshold for donated blocks in effect for all LNP-capable companies.*

? *The CPUC should solicit comments on the feasibility of paging companies becoming LNP capable and participating in pooling.*

? *If deemed feasible, the CPUC should petition the FCC to rescind the paging companies' indefinite exemption from becoming LNP capable.*

3. Potential Block Contamination Abuses

When blocks are slightly more than 10% contaminated, those blocks cannot be donated to the pool under current pooling rules. TD found instances where companies have contaminated several blocks in one prefix just more than 10%. The CPUC's rules on sequential numbering and fill rate practices promulgated in Decision 00-07-052 are designed to prevent this problem from occurring in the future. Fill rates mitigate contamination by requiring companies to use contaminated blocks up to 75% before they can receive additional blocks or prefixes. Sequential numbering minimizes contamination by requiring companies to begin assignment in the next thousand-block only after a 75% fill rate has been attained in the prior block. Where companies possess significant available numbers in a given rate center, these two efficiency measures could prevent the opening of new blocks or prefixes.

Companies reported utilization data as of April 30, 2000. The sequential numbering and fill rate decision was issued in July 2000. Therefore, TD does not expect companies to continue contaminating blocks unnecessarily.

Recommendation for Block Contamination Issues Affecting All Carriers

- ? *The CPUC should monitor compliance with its fill rate and sequential numbering policies through future number utilization filings and audits.*
- ? *The CPUC should establish penalties for non-compliance with fill rate and sequential numbering policies adopted in Decision 00-07-052.*[29]

4. Reclamation of Prefixes

Decision 00-07-052 directed companies to return prefixes that are held unused for more than six months.[30] As shown in Tables 2-5 and 2-6, wireline carriers and wireless carriers hold 934,000 unused numbers and 396,000 unused numbers, respectively, in the 0% contaminated blocks. Of these unused numbers, 240,000 are in 24 whole prefixes that are completely uncontaminated, i.e., spare prefixes, while 1,090,000 numbers are in uncontaminated blocks

[29] See Chapter 1 for the discussion of Decision 00-07-052.

[30] Carriers must file monthly reports with TD identifying prefixes which have not been activated within the six month time frame and explain the circumstances causing the delay in activating the code. The CPUC would then consider each carrier's circumstances and determine whether to direct the NANPA to reclaim the codes.

that are scattered throughout many different prefixes. The following table shows the breakdown between wireless and wireline carriers.

Table 2-7

Breakdown of Numbers in 0% Contaminated Blocks

	Total Avail. Nos. in 0% Contam. Blocks	Avail. Nos. in Spare Prefixes	Avail. Nos. in Differing Prefixes
Wireline Carriers	934,000	120,000	814,000
Wireless Carriers	396,000	120,000	276,000
Total		240,000	

The 240,000 numbers in 24 spare prefixes can possibly be reclaimed if not used within six months. However, as a result of the FCC's March 31, 2000 NRO Order, the NANPA no longer has sole authority to reclaim unused prefixes. The FCC granted authority to state regulatory commissions to investigate and determine whether prefix holders have activated prefixes within the allowed time frames, and directed the NANPA to abide by the state commission's determination to reclaim a prefix if the state commission is satisfied that the prefix holder has not activated the prefix within the time specified in the NRO Order.[31] Substantial cooperation between the CPUC and the NANPA will be required in order for the CPUC to exercise this new authority and determine whether a prefix should be reclaimed. Furthermore, the NANPA must still perform the mechanical steps to reclaim prefixes once the CPUC directs the NANPA to reclaim a prefix.

Recommendation for Reclamation of Prefixes

? *An order should be issued requiring the NANPA to notify the CPUC when a prefix in any California area code has not been placed in service during the legally required time period. The order should specify the procedures that the CPUC will follow in directing the NANPA to reclaim unused prefixes, and should require the NANPA to notify the CPUC of the steps the NANPA has taken to reclaim a prefix.*

[31] FCC 00-104, Paragraphs 237, 238, and 241

D. Analysis of 4.0 Million Unavailable Numbers

In the following sections, the TD recommends a series of policies designed to require companies to use unavailable numbers more efficiently. These policies would potentially free more numbers for use in the pool, to be allocated through the monthly lottery, or to be used otherwise by companies.

Companies report that 4.0 million numbers in the 909 area code are either assigned to customers or are used by companies for reserved, administrative, intermediate and aging purposes. Companies commonly refer to these numbers as "unavailable". Unavailable numbers include not only those actually in use by customers, but also the following categories:

- ? Reserved numbers – Numbers that are reserved in blocks for future use by specific customers;
- ? Administrative numbers – Numbers that companies use for their own internal purposes;
- ? Intermediate numbers – Numbers that are made available for use by another telecommunications carrier or non-carrier entity for the purpose of providing telecommunications service to an end user or customer; and
- ? Aging – Numbers from recently disconnected service, which are not reassigned during a fixed interval.

In the following sections, the TD recommends a series of policies designed to require companies to use unavailable numbers more efficiently. These policies would potentially free more numbers for use in the pool, to be allocated through the prefix lottery, or to be used otherwise by companies.

1. 3.2 Million Assigned Numbers

In the 909 area code, there are 3.2 million assigned numbers, with 2.2 million assigned to customers by wireline carriers and 1.0 million assigned to customers by wireless carriers. The percentages of assigned numbers to total numbers held by companies are shown in the table below.

Table 2-8

Assigned Numbers to Numbers Held by Companies (in millions)

	Assigned Numbers	Nos. Held by Companies	Percentage
Wireline Carriers	2.2	5.0	43.6%
Wireless Carriers	1.0	1.9	53.0%

a. Non-Working Wireless

Non-working wireless describes numbers assigned to wireless customer equipment, but which are not yet working. These numbers are considered a subcategory of assigned numbers. For example, wireless carriers sometimes pre-package a cellular telephone with an assigned telephone number for sale to customers. Although the number is assigned, it will remain inactive until a customer purchases the telephone. There were no non-working wireless numbers reported in the 909 area code. While the quantity of non-working wireless numbers is zero in the 909 area code, this sub-category of assigned numbers could potentially increase because there are no restrictions on the number of days that a wireless company can hold these numbers, causing many numbers to remain idle for an unspecified period of time. The CPUC should consider several options to improve inventory management of non-working wireless numbers. One option is for the CPUC to require companies to return these numbers to the unassigned category after 45 days (similar to the requirement the CPUC has established for reserved numbers). This would free additional numbers for reassignment. Since pre-packaged equipment with non-working assigned numbers is often located in various retail outlets, another option is for the CPUC to require companies to maintain inventory records of all such retail/wholesale equipment with the associated numbers assigned, and to require regular (weekly/monthly) updating of these inventory records. In addition, the CPUC should continue to monitor non-working wireless numbers in the near term to track compliance with staff's recommendations.

Recommendations For Treatment of Non-Working Wireless

- ? *Non-Working wireless numbers should be treated as reserved numbers and limited to 45 days, after which they should be treated as available for assignment to customers.*
- ? *Companies should be required to maintain and update regularly the inventory records of all equipment assigned non-working wireless numbers along with the number assigned, and to submit such records to the CPUC upon request.*
- ? *The CPUC should continue to monitor non-working wireless numbers in the near term by reviewing future utilization filings, and should include this category of numbers in any audits conducted of wireless carrier number use.*

b. Eliminating Interim Number Portability Releases Numbers for Reallocation

Interim Number Portability (INP) is the ability to move telephone service from one service provider to another using Remote Call Forwarding (RCF), Direct Inward Dialing (DID), or equivalent means.[32] Prior to the implementation of permanent LNP, companies entered into INP arrangements to enable the transfer of customers from one company to another. Under these INP arrangements, two telephone numbers are associated with each customer. LNP eliminates the need for two telephone numbers for each customer when the customer changes companies, because customers can take their numbers with them.

Since the 909 area code is included in the top 100 MSAs in the nation, all wireline carriers in 909 should have become LNP capable by the end of December 1998.[33] The only companies who reported INP numbers were ILECs. They reported a total of 43 INP numbers in the 909 area code. Since all the reported INP numbers were from ILECs and none were from their competitors, it does not appear that INP exists in the 909 area code to facilitate competition for customers. Thus, TD questions why any INP numbers exist in this area code.

[32] Remote Call Forwarding allows a customer to have a local telephone number in a distant location. RFC is similar to call forwarding on a residential line, except that the RCF customer has no phone, no office and no physical presence in that location. Direct Inward Dialing uses a trunk from the central office which passes the last two to four digits of the Listed Directory Number into the PBX, thus allowing the PBX to switch the call to the correct extension without the use of an attendant. Existing DID retail service is limited to PBX services. For purposes of providing INP, DID switch functionality is used to provide INP to any CLC customer regardless of the type of terminal equipment used on the customer's premises.

[33] However, two wireline carriers still remain non-LNP capable.

Switching to LNP technology and eliminating INP will free up half of the 43 numbers that are currently dedicated to INP.

Recommendation for INP-Related Conservation Measures

- ? *The CPUC should require companies to transition from INP to LNP in the 909 area code and implement a monitoring mechanism to ensure compliance.*
- ? *The CPUC should adopt a schedule for transitioning INP arrangements to LNP in all other California area codes.*

c. Expanded Use of the 555 Prefix Could Release Other Prefixes Dedicated to Special Uses

Historically, the telecommunications industry has designated certain prefixes for special uses, usually to an incumbent local exchange carrier (ILEC). These include numbers for recorded public information announcements such as time-of-day and weather forecasts, high-volume call- in numbers, and emergency access[34] numbers. These prefixes are not made available for general commercial use and as such, numbers within these prefixes that are *not* in actual use lie vacant. In 1999, companies decided not to duplicate the special use prefixes in each area code. Concerned that this process could adversely affect the public, the CPUC directed that these prefixes should be duplicated in each new area code.

The utilization study shows that six prefixes are dedicated for special uses ; two for mobile radio[35] and one each for high volume calling, directory assistance, emergency preparedness and time. Companies reported 48,500 assigned numbers in six prefixes. TD questions the necessity of assigning an entire prefix for each purpose.

Furthermore, having multiple special use prefixes is an inefficient use of numbers in the 909 area code as well as in other area codes in California. For example, if the 555 prefix, currently reserved only for directory assistance,[36] could be used to provide time and emergency service, then two more prefixes could be returned for reallocation in the 909 area code.

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[34] The emergency access prefixes are for services other than 911.

[35] The two NXX Codes are shared codes between POTS use and Mobile radio.

[36] The number used for inter-area code directory assistance throughout California is 1-(XXX)-555-1212. This number has been designated for this use at the federal level.

Similarly, expanded use of the 555 prefix throughout the state could result in more returned prefixes in other area codes. TD recommends that the CPUC initiate an investigation into broader use of the 555 prefix in California. The CPUC should further analyze the option of obtaining standard 555 numbers in every California area code to provide time, emergency preparedness, and weather information at no additional cost to customers.

With respect to high volume calling, the utilization study indicates that the prefix dedicated to this service is not fully utilized.[37] Out of the 10,000 numbers allocated for high volume calling, only 25 are actually in use. The remainder of these numbers, however, could be a source of numbers for pooling. TD recognizes that there may be technical issues involved in obtaining these numbers. TD recommends that the CPUC solicit comments in the Local Competition proceeding regarding technical issues that might prevent the high volume calling prefix from being reclaimed and placed in the 909 number pool.

In addition to the under-utilization of these numbers, the distribution of these numbers among blocks also demonstrates inefficient utilization practices. The 25 numbers are contained in three different thousand-blocks. Consistent with our statewide conservation measures adopted in July, TD recommends that the CPUC require companies to assign these numbers sequentially within each thousand-block.

Recommendations for Special-Use Prefixes

- ? *TD recommends that the CPUC initiate an investigation into the possibility of moving the number for time and emergency preparedness into the 555 prefix.*
- ? *TD recommends that the CPUC include in its investigation the broader use of the 555 prefix in California's area codes by providing standard 555 numbers in every California area code to provide time, emergency preparedness, and weather information.*
- ? *TD recommends that the CPUC solicit comments in the Local Competition proceeding (R.95-04-043/I.95-04-044) regarding technical issues that would arise if thousand-blocks from the high volume calling prefixes are reclaimed and placed in the 909 number pool.*

[37] High volume calling codes are meant to provide service to customers with a large quantity of incoming calls, such as radio stations.

? *TD recommends that the CPUC require companies to assign numbers sequentially in special use prefixes. Where the numbers are presently assigned randomly, TD recommends that these numbers be moved and consolidated in one thousand-block in order to free more blocks for number pooling.*

2. Reserved Numbers Are a Potential Source of Additional Numbers

Companies "set aside" numbers for future use by customers.[38] Previously, industry number assignment guidelines allowed companies to reserve a prefix for up to 18 months for customer future use.[39] The FCC's NRO Order modified the number reservation period to 45 days. This 909 utilization study incorporated the FCC's 45-day requirement. The FCC later issued an extension until December 1, 2000 for companies to comply with the 45-day rule [40]. The extension allows companies time to upgrade their number tracking mechanisms, which tally the quantities of reserved numbers they hold. While companies reported a total of approximately 63,000 reserved numbers in the 909 utilization study[41], it is unclear whether the reported quantity is accurate. Since companies could reserve numbers for longer than 45 days prior to the NRO Order, the quantity of reserved numbers reported may be overstated and, correspondingly, the quantity of available numbers reported may be understated.

Wireline carriers reported a total of about 57,000 reserved numbers in the 909 area code. If the quantity of reserved numbers held by wireline carriers can be minimized, additional numbers could be available for reallocation in the 909 number pool[42] and for immediate use by the companies from within their own number inventories. Currently there are no limitations on the quantity or percentage of numbers a company can classify as

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[38] An example would be a customer request for 2,500 numbers to be used in 2000, coupled with a request to have the next 2,500 numbers in sequence "reserved" for the customer to use in 2001.

[39] Central Office Code (NXX) Assignment Guidelines, prepared by the Industry Numbering Committee, January 27, 1999 version, Section 4.4.

[40] FCC Order 00-280, CC Docket No. 99-200, adopted and released on July 31, 2000.

[41] See Appendix D for a breakdown of reserved numbers reported in the 909 area code by rate center.

[42] Although most wireline carriers serving the 909 area code are LNP capable, a number pooling trial has not yet been implemented in this area code. Thus, these carriers still request new numbers in blocks of 10,000 numbers (i.e. whole prefixes) from the NANPA. However, most of these carriers will exclusively get new numbers in smaller quantities (i.e. in 1,000-number blocks) once the 909 number pooling trial begins later this year.

reserved, before requesting new numbers. Similarly, companies are not required to use their stock of reserved numbers before they can request that new numbers be allocated to them. For example in the Corona rate center, one company holds about 12,000 reserved numbers, which constitutes 89 percent of the reserved numbers reported in that rate center. Approximately 7,600 of those 12,000 numbers are in one prefix. Together, the other ten companies serving that rate center hold the remaining 11 percent of the reserved numbers. If the CPUC orders efficient use practices specific to reserved numbers, carriers will more efficiently use numbers.

Wireless carriers reported nearly 6,000 reserved numbers in the 909 area code. Wireless carriers also reported wide variances in reserved numbers. Most of the wireless reserved numbers are held by three companies serving Arlington and Riverside rate centers. These three companies hold relatively large quantities of reserved numbers in a single prefix.[43] By contrast, the other wireless carriers serving the 909 area code report not more than 25 reserved numbers in any prefix in those rate centers. While wireless carriers cannot currently participate in number pooling, the CPUC should also adopt efficient number use practices specific to the reserved numbers these companies hold. Such practices could immediately free up numbers within these companies' inventories for use and, thus, could slow the rate at which new prefixes are allocated to these companies. Once wireless carriers are able to participate in number pooling, these practices could have the same efficiency gains as those for wireline carriers.

Recommendations for Reserved Numbers

? *The CPUC should monitor reserved number use for all companies by reviewing future utilization data to ensure companies are complying with the FCC's 45-day requirement.*

? *The CPUC should adopt efficient number use practices specific to companies' reserve number holdings. In developing these practices, the CPUC should investigate various alternatives including, but not limited to, 1) limits on the quantity or percentage of reserved numbers companies can hold, and 2) requirements for using reserved numbers prior to requesting new numbers.*

[43] One carrier holds approximately 1,200 reserved numbers in a single prefix in Arlington. The other two carriers hold approximately 1,500 and 2,100 reserved numbers, respectively, each within a singe prefix in Riverside.

3. Restrictions on Administrative Numbers Could Yield More Numbers

Administrative numbers are those not assigned to customers and are generally used for a wide range of applications for companies' internal use, including testing, internal business, and other network purposes. Companies reported almost 82,000 administrative numbers in the 909 area code. Wireline carriers hold approximately 68,000 of these numbers and wireless carriers hold approximately 14,000.

The utilization study revealed that there is a potential for companies to over-assign administrative numbers within a particular thousand-block, prefix, or rate center in the 909 area code. For example, in the Ontario rate center 37 prefixes, or 370,000 numbers, have been allocated to wireline carriers, with nearly 15,000 numbers categorized as administrative[44]. By contrast in the Riverside rate center, companies have been allocated 39 prefixes, or 390,000 numbers, which is nearly equal to the Ontario rate center; but, they reported one fifth as many administrative numbers as were reported in Ontario (i.e. approximately 3,000 administrative numbers). Given the variances in the levels of administrative numbers between companies and rate centers, it is unclear what basis companies use for assigning numbers in this category. The CPUC should therefore pursue an investigation in this area.

In addition, some companies randomly assign administrative numbers and are thereby wasting number resources. Companies could conserve numbers by changing the way in which these type of numbers are assigned. First, some companies randomly assigned administrative numbers in multiple thousand-blocks within the same prefix when they have available number resources to centralize those assignments within one or a few thousand-blocks. This means that wireline carriers contaminated multiple thousand-blocks and prevented them from being candidates for reallocation to other companies in the 909 number pool or other LNP-based conservation measures. For wireless carriers, this practice means that they will already have contaminated multiple thousand-blocks and prevented them from being donated once they can participate in number pooling or from being used in other LNP-based conservation measures.

Second, some companies holding multiple prefixes in a given rate center randomly assign administrative numbers throughout different prefixes when they have the available

[44] 10,000 of the 15,000 administrative numbers reported in Ontario are attributed to one NXX code held by a single carrier.

number resources to centralize the assignment of these numbers in one prefix in that rate center. TD questions the need for companies to hold multiple prefixes in a given rate center, when they are using these multiple prefixes to serve their internal purposes and not necessarily to serve customer needs. Moreover, since these companies contaminated many more thousand-blocks in multiple prefixes versus in one prefix, this practice exacerbates the problem of contaminating number resources and preventing them from being donated to the pool when it begins in the 909 area code, as described above.

Recommendations for Administrative Numbers

- ? *The CPUC should develop criteria by which companies assign administrative numbers. The CPUC should consider placing a limit on the quantity or percentage of administrative numbers companies are allowed to hold.*
- ? *The CPUC should develop rules that require companies to limit administrative number assignments within certain blocks in a given prefix. In cases in which companies hold multiple prefixes in a single rate center, the CPUC should develop rules that require companies to limit administrative number assignments within prefixes.*

4. Intermediate Numbers

The "intermediate number" category is a new one only recently introduced by the FCC in its NRO Order. This category tracks numbers that companies make available for use by another telecommunications carrier or non-carrier entity. Companies reported approximately 498,000 intermediate numbers in the 909 area code. Wireline carriers hold about 412,000 of those numbers and wireless carriers hold about 86,000. The quantity of intermediate numbers varied significantly among rate centers in the 909 area code.[45] In the Colton rate center for example, all of the approximately 119,000 intermediate numbers are held by one wireline carrier and three wireless carriers. In that rate center, intermediate numbers constitute between 10 and 50 percent of the numbering resources of each of those companies. The other nine wireless and wireline carriers serving the Colton rate center had no intermediate numbers.

Since the intermediate number category is new, the quantity of numbers reported by companies may increase over time as more companies become familiar with this category. TD

[45] See Appendix F for a breakdown of intermediate numbers held by wireline and wireless carriers. Appendix F demonstrates that the quantity of intermediate numbers in each 909 rate center varied from 0 to more than 119,000.

notes that this number category has the potential for abuse by companies if they use significant quantities of numbers for intermediate purposes and take away available resources that could be assigned to customer uses. Therefore, TD recommends the CPUC continue to monitor intermediate number use in the future.

Recommendations for Intermediate Numbers

? *The CPUC should monitor intermediate number use for all companies by reviewing future utilization filings to test whether abuses in this reporting category occur.*

a. Type 1 Numbers

Wireline carriers allocate numbers for use by wireless carriers through Type 1 interconnection agreements.[46] Because wireline and wireless carriers share responsibility for Type 1 numbers, both types of companies reported on these numbers. Wireline carriers report Type 1 numbers in the Intermediate category since they provide these numbers to another carrier. Wireless carriers report on the same numbers in greater detail since they actually use the numbers, placing them in the Assigned, Administrative, Reserved, Intermediate, Aging, or Available categories.

Reporting of Type 1 numbers is complicated, as wireline and wireless reports often do not match. In the 909 area code, nearly 60% of all Type 1 numbers are unaccounted for or mismatched.[47] Wireline donor carriers do not monitor wireless Type 1 inventories, nor do they proactively reclaim unused Type 1 numbers from wireless carriers. TD recommends that wireline carriers perform an annual inventory check on Type 1 numbers and reclaim any unused Type 1 numbers within 60 days.[48]

As described in Chapter 1, state and federal mandates require most companies to demonstrate efficient numbering practices before becoming eligible to obtain more numbers. In contrast, Type 1 wireless carriers have no check on their number use because they draw numbers directly from wireline companies, therefore avoiding the scrutiny of the official

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[46] Type 1 numbers are *programmed* in the wireline carrier's end office, but are *used* by a wireless carrier.

[47] 324,000 out of a total of 551,000 Type 1 numbers are unaccounted for or mismatched.

[48] Type 1 numbers may go unused because wireless carriers go out of business, or because of inadequate record keeping.

number administrator. TD recommends that Type 1 wireless carriers be subject to number conservation measures and a system to ensure compliance.

Improved Type 1 number management is particularly crucial because, unlike numbers held by most wireless carriers, Type 1 numbers are eligible for number pooling.[49] Therefore, if Type 1 numbers are more closely managed, not only will available numbers be recovered, but these numbers will also contribute to the success of pooling. Despite the reporting problems, TD has identified 12 blocks of Type 1 numbers in the 909 area code that may be eligible for donation to the pool.[50] The CPUC should recognize Type 1 numbers as a resource for number pooling and take steps to have wireless carriers donate excess blocks to the pool.

Recommendations for Type 1 numbers

- *Wireline and wireless carriers should improve Type 1 number inventory management. Wireline carriers should perform an annual inventory check of wireless Type 1 numbers to confirm that wireless companies are using the numbers allocated to them. Companies should make inventory data available to the CPUC upon request. Wireline companies should reclaim unused numbers within 60 days.*
- *Type 1 carriers should be subject to number conservation measures such as sequential numbering and fill rates. A system to ensure compliance with Type 1 number conservation measures should be developed.*
- *The CPUC should consider numbers held by Type 1 wireless carriers as candidates for number pooling. Excess and unused Type 1 numbers should be donated to the number pool.*

5. Aging Numbers

The FCC's NRO Order, adopted March 17, 2000, defines *aging numbers* as disconnected numbers that are not available for assignment to another end user or customer for a specified period of time. Consistent with the INC Guidelines, the CPUC adopted the FCC

[49] The 909 study revealed that Type 1 numbers given to wireless carriers are from prefixes in which LNP has already been initiated by the wireline carriers. Because Type 1 numbers reside in the wireline carrier's end office, Type 1 numbers are LNP capable and thus suited for pooling.

[50] These blocks are 10% or less contaminated.

upper limits for aging numbers as 90 days for residential numbers and 365 days [51] for business numbers.

In the 909 area code, there are approximately 195,000 numbers aging, representing 5% of the total unavailable numbers. While most service providers track aging telephone numbers by business and residential categories, Pacific Bell does not differentiate between business and residential customers when tracking aging numbers. Since Pacific Bell did not differentiate, the consultant chose to place those numbers in the business category. Therefore, more aging numbers are categorized in the business category, which may give a false impression that most of the aging numbers are business numbers.

Because Pacific Bell does not differentiate between residential and business in reporting aging numbers, it is uncertain whether Pacific is adhering to the maximum 90-day aging period for residential numbers, and whether at the end of the 90-day period Pacific Bell is reassigning these numbers to the "available" category. Pacific Bell may be allowing residential numbers to be in the aging category for nine months longer than is permissible under both FCC and CPUC rules.

A higher percentage of aging numbers occurs in the wireless category, compared to the wireline category. Aging numbers represent 7.8 percent of the total unavailable wireless numbers, or about 94,000 numbers. Aging numbers represent 3.6 percent of the total unavailable wireline numbers, about 101,000 numbers. This number is consistent with the higher turnover or "churn" that occurs in the wireless industry. Table G-1, in Appendix G, shows the breakdown of aging numbers by wireless and wireline categories.

Recommendation for Aging Numbers

? *Although the CPUC has required all companies to differentiate aging numbers between residential and business, and track the two categories separately, Pacific Bell has failed to comply with these requirements. Pacific Bell should be redirected to differentiate aging numbers between business and residential numbers, track them*

[51] In the NRO Order, both 360 days and 365 days were used as the time period for aging business numbers. In a clarifying order, the FCC adopted 365 days as the aging period for business numbers. When the CPUC sent out the parameters for utilization data for this study, the 360 day time period for aging business numbers was used. In order to be consistent with the time frames the FCC adopted, the CPUC is now using 365 days for aging business numbers.

separately, and report on each category accurately . The CPUC should assess penalties for failure to comply.

6. The Need to Audit the Data

The data analyzed in this 909 utilization study was self-reported by companies. Given the area code crisis in California, the CPUC should audit this data for two reasons. First, verifying number usage data is important to ensure that the public resource of telephone numbers is efficiently managed. Second, audits will help verify whether companies are complying with CPUC and FCC rules for number usage.

Recommendations for Audits

? *The CPUC should audit the data submitted by companies in this study and future area code utilization studies.*

CHAPTER THREE: NUMBER POOLING AND OTHER NUMBER CONSERVATION MEASURES

E. Introduction

Many of the recommendations in Chapter Two resulted directly from the analysis of the utilization data and address actions that the CPUC should undertake to make additional numbers available for either pooling or the regular monthly lottery. The recommendations contained in this chapter suggest additional conservation measures, as required by Public Utilities Code Section 7935(a). The CPUC could adopt the following conservation measures in the 909 area code and statewide: LNP-related actions, unassigned number porting, rate center consolidation, and prefix sharing. In addition, California should build upon the success of number pooling in the 310 and 415 area codes by setting up trials in other area codes. When applied, these conservation measures would result in uniform policies which would cause companies to use numbers more efficiently throughout California, and would minimize customer confusion.

F. Number Pooling

Number pooling is an excellent method of number conservation. The CPUC worked aggressively to bring number pooling to California and the results have been dramatic. Pools are underway in the 310, 415, and 714 area codes, and the CPUC plans to roll out the maximum possible number of pools before national number pooling begins.

In the 310 area code, number pooling has been in effect for over six months. The pool has satisfied the numbering needs of all companies participating in the pool without opening a single prefix.[52] Without pooling, 98 prefixes would have been opened to satisfy the demand for numbers. Number pooling has avoided the need to open prefixes and extended the life of the 310 area code by at least 15 months.[53]

The positive experience in the 310 area code is mirrored in 415. The 415 pool opened July 29, 2000. Again, without opening a single prefix, the numbering needs of companies have been met.[54] After just two months, pooling has saved 12 prefixes in the 415 area code.

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[52] Two codes have been opened in the 310 pool for LRN assignment purposes.

[53] As of September 18, 2000.

[54] Three codes have been opened in the 415 pool for LRN assignment purposes.

TD recommends that the CPUC implement as many pooling trials as technically and legally feasible in California. The pooling trial in the 909 area code will open on December 8, 2000. As of September 22, 2000, 942 blocks had been donated to the pool and 78 blocks had been forecasted for use in the first month.

Pooling benefits not only the public but the companies as well by reducing the time necessary to acquire numberings. Without pooling, activating new numbers takes at least 66 days.[55] With number pooling, companies can receive thousand-blocks of numbers in three weeks.

1. More Accurate Forecasting Will Improve Number Pooling

In California, number pooling has worked well because companies have met their numbering needs from blocks other companies donate to the pool. The CPUC has set aside prefixes in each area code that will be used to replenish the pools if and when donations are no longer sufficient. There are a limited number of set aside prefixes, so it is crucial that these prefixes be opened only when there is truly a need.

If donated numbers are not sufficient to meet companies' forecasts, a new prefix may need to be opened. Industry guidelines suggest replenishing a pool at least 66 days in advance of when the forecast shows a company will need more numbers than the pool has on hand. This presents a problem, as companies in California have, on average, forecast needing *seven times* more numbers than they will take from the pool. In many cases the forecasts are incredibly exaggerated. For example, in the San Francisco Central rate center in the 415 area code, companies predicted they would use 75 blocks in the first two months of the pool. However, they have used none. Had the Pooling Administrator (PA) opened prefixes based on the forecast, the prefixes would lie unused in the rate center.[56]

The CPUC has thus far prevented prefixes from being unnecessarily opened by ordering the PA to consult with TD staff prior to opening any new prefix. However, the CPUC believes this issue should be addressed for the long term. Industry guidelines encourage companies to overforecast, because a company can only be assured numbers which

[55] Before a whole prefix is activated, the prefix must be listed for 66 days in the Local Exchange Routing Guide stating the rate center where the prefix will be located.

[56] Data can be found in Pooling Appendix.

it forecasts needing.[57] In essence, a company could be penalized for underforecasting. Since there is no penalty for overforecasting, it is in companies' interests to err on the side of overforecasting. TD recommends the CPUC develop specific rules guiding company forecasting. TD also recommends that the PA take historical usage into account when determining when to open a fresh prefix of 10,000 numbers.

Recommendations for Number Pooling

- ? *The CPUC should continue to urge the FCC to adopt a 75% fill rate requirement for pooling nationwide.*
- ? *The CPUC should work with industry groups and the Pooling Administrator to develop specific rules for companies pertaining to forecasting a six-month inventory when a number pool is authorized in a particular area code.*

G. Lack of Local Number Portability Stands as a Key Barrier to Pooling

Full LNP deployment in the 909 area code is critical to effective number conservation. As described in Chapter 1, LNP enables customers to keep their telephone numbers when they switch companies. Because the number remains with the customer and can be transferred to different companies, there is no need to distribute duplicate numbering resources to both companies. Also, LNP is the technology platform that makes number pooling possible.

In an order released in 1997, the FCC ordered all wireline carriers in the top 100 MSAs to become LNP capable by December 1998.[58] The 909 area code falls within two of the top 100 MSAs. The study revealed that all but two wireline carriers in the 909 area code are LNP capable. These two companies hold nearly 20,000 numbers that could be made available for number pooling, if they implemented LNP technology. This noncompliance could be explained by the existence of subsequent FCC documents contradicting the original LNP order. The CPUC is working with the FCC to resolve the confusing language in the texts. Once this is accomplished, the CPUC recommends requiring all wireline carriers to become LNP capable within 6 months.

[57] 6.1.4 & 6.1.5 in INC 99-0127-023, January 10,2000

[58] FCC 96-286 in CC Docket No. 95-116.

Wireless carriers, however, requested and received from the FCC an extension of time, until November 2002, to become LNP capable.[59] The FCC has yet to decide when wireless carriers, once LNP capable, will be required to participate in number pooling. The CPUC has filed comments with the FCC arguing that wireless carriers should be required to participate in pooling immediately upon becoming LNP capable.[60] Wireless carriers hold 191 prefixes in the 909 area code, of which 460 blocks are currently 10% or less contaminated and therefore could be made available for pooling if they were required to participate in the pool.

As noted earlier, federal LNP requirements are directed at companies in the country's top 100 MSAs. But roughly half of the area codes in California fall partially or completely outside of these MSAs. These area codes are facing similar numbering crises, and LNP is not ordered. Without full activation of LNP throughout California, the CPUC is effectively prevented from operating number pools in half of the area codes in the state. California has a pending petition at the FCC to extend LNP deployment statewide. The CPUC should urge the FCC to act on the petition for authority to order LNP capability statewide.

Recommendations for LNP

- ? *The CPUC should encourage the FCC to resolve the contradiction in the texts ordering LNP capability for all wireline carriers in the top 100 MSAs.*
- ? *As soon as permitted by the FCC, the CPUC should request that non-LNP capable wireline carriers in the 909 area code become LNP capable within the time frame prescribed by the FCC, which in no case may exceed 6 months from the day the CPUC makes the request.*
- ? *In the meantime companies (both inside and outside of the top 100 MSAs) should be encouraged to make requests of one another to become LNP capable.*

H. Unassigned Number Porting

Unassigned Number Porting (UNP) is the term used to describe the transfer of unused numbers from one company to another. Like number pooling and the porting of assigned numbers from company to company, UNP is made possible by deployment of Local Number

[59] FCC 99-19, WT Docket 98-229; CC Docket No. 95-116, Released: February 9, 1999. Paging companies are indefinitely exempt from becoming LNP capable.

[60] Further Comments of the California Public Utilities CPUC and the People of the State of California in CC Docket No. 99-200, submitted May 19, 2000.

Portability, or LNP. The primary benefit of UNP would be increased access to unused numbers stranded in carrier inventories. UNP would also strengthen competitively neutral access to public numbering resources by enabling carriers with smaller inventories to access the inventories of carriers with larger number holdings.

UNP would allow companies to transfer small increments of numbers between themselves. Various proposals have suggested limiting the increments to 25 or 100 numbers.[61] Two efficiencies would be gained: 1) companies with smaller scale needs would be able to receive numbers in increments appropriate to meet their needs, and 2) unused numbers stranded in carrier inventories would be transferred to companies where they could be put to use.

Currently, companies receive unused numbers from the NANPA in increments of 10,000 numbers (prefixes) or from the PA in increments of 1,000 numbers (blocks). In areas without number pooling, prefixes held in company inventories that are not put to use within six months must be returned, but only if uncontaminated. If just one number has been used, the remaining 9,999 are stranded in the company inventory. In areas with number pooling, blocks are eligible for return only if 10% or less contaminated. For example, if a company receives 1,000 numbers and only has need for 100 numbers, the remaining 900 numbers are eligible for return. However, if a company received 1,000 numbers and only has need for 101 numbers, the remaining 899 numbers are ineligible for return and are stranded in the company inventory. UNP is one way to address the problem of stranded numbers.

The FCC has contemplated UNP but has so far declined to act.[62] The FCC has not ruled out UNP as a conservation measure.[63] In the absence of a voluntary carrier agreement to implement UNP, however, the CPUC could only implement UNP with FCC approval. Given the number conservation benefits to be had, the CPUC should petition the FCC for authority to undertake a UNP trial.

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[61] See INC Contribution #336R of September 29, 2000, "UNP Architecture With Minimal Administrative Structure" and Focal and MCIWorldcom's Report on UNP Trial

[62] NRO Order, FCC 00-104, CC Docket 99-200, ¶ 230. "We reiterate our finding that UNP and ITN [individual telephone number pooling] are not yet sufficiently developed for adoption as nationwide numbering resource optimization measures and conclude that ITN and UNP should not be mandated at this time.".

[63] See ¶ 231: "We permit carriers, however, to engage voluntarily in UNP where it is mutually agreeable and where no public safety or network reliability concerns have been identified."

Recommendation for UNP

- ? *The CPUC should petition the FCC for authority to implement UNP statewide.*
- ? *The CPUC should solicit comments in order to develop rules and practices necessary to implement UNP.*

E. Consolidation of Rate Centers to Maximize Number Use

Rate Center Consolidation (RCC) is a potential number conservation tool because it allows companies to use numbers over a larger geographic area, thus slowing the rate at which prefixes are used. Rate center location dictates both the scope of a customer's local calling area and the charges assessed per toll call. In California, each rate center governs a relatively small, uniform local calling area, measured from the rate center of each exchange. Because the local calling areas in California are small compared to those in many other states, it is virtually impossible to migrate to larger calling areas via consolidation of rate centers without eliminating at least some toll call routes.

Eliminating toll routes would have the residual effect of reducing revenues for toll service providers, which include both local exchange carriers and interexchange carriers. The two major ILECs in California, Pacific Bell and Verizon (formerly GTE California), have expressed at industry meetings their belief that they should be "made whole" for any loss of toll revenues that likely would result from consolidating rate centers. An industry task force which the CPUC charged with developing a proposal for rate center consolidation reported to the CPUC in March 1999 that it would offer no such plan until the CPUC addresses revenue and consumer impact issues. However, it is difficult, if not impossible, for the CPUC to address consumer and revenue impacts if the CPUC has no plan before it for consolidating rate centers, which would provide the context and details for assessing such impacts.

California has roughly 750 rate centers, each of which is the approximate center of a 12-mile local calling area. With no input from the industry, the CPUC cannot begin to guess what approach would be most appropriate. For example, California could consolidate from 750 rate centers to 400, or to 200. Each of those possibilities would present different rate impacts for both companies and customers. Alternatively, rather than attempting to consolidate rate centers on a statewide basis, the CPUC could consider consolidating rate centers on an area code-by-area code basis. All rate centers in one area code, for example, could be consolidated into one rate center. This would eliminate both the uniform statewide

local calling area of 12 miles and uniform statewide rates for each company, thus generating some amount of customer confusion as individuals travel throughout the state for business or social purposes, or relocate their home or business. Further, because companies would lose toll revenues when rate centers are consolidated and local calling areas expanded, the CPUC would need to address the question of which, if any, companies should be allowed to recover those lost revenues, and if so, how.[64]

Finally, rate center consolidation will mean direct, substantial, and permanent basic rate increases for many customers, unless the ILECs forgo their claim that RCC should be revenue neutral. Economics and Technology, a Boston consulting group, has projected that "…rate center consolidation in California could result in a per-access-line increase of $5.56 in basic monthly rates for California ILEC customers."[65]

This may not be an acceptable option, even though California presently has among the lowest local exchange rates in the country. And, if the ILECs continue to press for revenue neutrality, the very process of determining the amount of those revenues, as well as how those monies should be recovered and from what class(es) of customers, would constitute a rate-design proceeding of significant scale and scope. Such a proceeding could consume a tremendous amount of CPUC, industry, and consumer representative resources, and could take one to two years.[66]

Nonetheless, because RCC offers the potential for conserving significant quantities of numbers in California, TD recommends that the CPUC renew its efforts to determine how RCC could be implemented in California. The industry should be directed to posit several different scenarios, if they cannot agree on one proposal.

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[64] For example, while the ILECs still control roughly 95% of the residential toll market, competitors have succeeded in making significant inroads into the business toll market, where the ILECs now hold only 50% of the market. If the CPUC were to decide that the ILECs should be "made whole" for any lost toll revenues, then other companies could demand a mechanism to make them whole as well. Alternatively, if the competitors cannot practically be reimbursed for lost revenues, then as a policy matter, the CPUC must decide if it is reasonable to allow only the ILECs to recover such revenue.

[65] "Where Have All the Numbers Gone?" (Second Edition), The Ad Hoc Telecommunications Users Committee, prepared by Economics and Technology, Inc., June 2000. The estimate of $5.56 may be conservative.

[66] The last major rate design proceeding undertaken for Pacific Bell and Verizon (formerly GTEC) was the Implementation and Rate Design (IRD) phase of the New Regulatory Framework proceeding, I.87-ll-033. The IRD phase took three years to complete.

Recommendations for Rate Center Consolidation

? *The CPUC should undertake further investigation by ordering the telecommunications industry to develop a plan, within 180 days, for rate center consolidation.*

I. Sharing Prefixes May Yield More Efficient Number Use

In analyzing previous utilization data in the 310 area code, TD became aware that two non-affiliated companies were sharing prefixes under an informal arrangement. Using LNP technology, a company with excess numbers had transferred whole thousand-blocks of numbers to the other company for use. TD believes this sharing arrangement promotes efficient number use among companies.

Some companies reporting utilization data in the 909 area code are affiliated through mergers, acquisitions or other business relationships. Despite these affiliations, each company separately requests numbers from the NANPA and will request them from the 909 number pool when it begins in December 2000. TD notes that the benefits of sharing prefixes may be different in area codes in which number pooling has already been implemented versus those in which number pooling has not been implemented. Sharing prefixes between companies appears worthy of further investigation by the CPUC as a mechanism to promote more efficient use of numbers.

Recommendation for Sharing Prefixes

? *The CPUC should further explore sharing prefixes as a means to more efficiently utilize numbers in all California area codes.*

CONCLUSION

Analyzing the utilization data provided by carriers has provided useful information regarding number availability and usage practices in the 909 area code. It also offers insights into developing better public policies to improve efficiency of number use.

We now know that of the approximately 7.9 million usable numbers in the 909 area code, roughly 3.9 million, or almost half, presently are not in use. Despite the increasing demand for numbers, the 909 area code is not fully utilized. The data indicates that there is considerable room for growth within the existing 909 area code, and it is premature to consider splitting or overlaying the 909 area code at this time.

The CPUC already has directed carriers to employ measures to use more efficiently the numbering resources in 909. Recently adopted fill rates and sequential numbering rules will ensure that carriers better use their existing resources, and receive additional numbers only on an as-needed basis. The number pooling trial soon to begin in the 909 area code will assure that all LNP capable carriers are given numbers expeditiously and in usable blocks. Allocating numbers in thousand-block increments rather than in full prefixes of 10,000 numbers will ensure that the numbering resources are used more efficiently, and can greatly extend the life of the existing area code. Implementing these more efficient numbering practices is an important first step, but more needs to be done.

In analyzing the carrier data, it is now clear that because of 1) past inefficiencies in numbering policies and practices, 2) the 10% contamination ceiling for block donations to pooling, and 3) the deferral of LNP capability for wireless carriers, 2 million numbers are not in use in 909 but cannot be reassigned to other carriers. Changes in contamination thresholds, implementing UNP, and requiring LNP capability for all carriers could make many of these stranded numbers available for reassignment.

The CPUC should continue its collaborative process with the FCC and the telecommunications industry to implement Unassigned Number Porting, the development of non-geographic-specific area codes, and other measures which will more fully utilize numbers. The CPUC should begin implementation of the many number conservation and management practices found in the Recommendations Section of this report. As a public resource, it is important that our numbering supplies are used as efficiently and effectively as possible.

APPENDIX A

PART 1-SECTION A _____ ***NPA***
RATE CENTER _____ **UTILIZATION STUDY FORMAT**

INFORMATION								**ASSIGNED**	**ADMINISTRATIVE**				**INTER-MEDIATE**	**RESERVED**	**AGING**			**UNAVAILABLE**	**AVAILABLE**
OCN	COC Type	LNP	Special Use	Rate Center	NPA	NXX	X	**TOTAL**	Internal/Official	Test	Other	**TOTAL**	**TOTAL**	**TOTAL**	RES	BUS	**TOTAL**	**TOTAL**	**TOTAL**
							0	0	0	0	0	0	0	0	0	0	0	0	1000
							1	0	0	0	0	0	0	0	0	0	0	0	1000
							2	0	0	0	0	0	0	0	0	0	0	0	1000
							3	0	0	0	0	0	0	0	0	0	0	0	1000
							4	0	0	0	0	0	0	0	0	0	0	0	1000
							5	0	0	0	0	0	0	0	0	0	0	0	1000
							6	0	0	0	0	0	0	0	0	0	0	0	1000
							7	0	0	0	0	0	0	0	0	0	0	0	1000
							8	0	0	0	0	0	0	0	0	0	0	0	1000
							9	0	0	0	0	0	0	0	0	0	0	0	1000
							Total>>	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10000**
							0	0	0	0	0	0	0	0	0	0	0	0	1000
							1	0	0	0	0	0	0	0	0	0	0	0	1000
							2	0	0	0	0	0	0	0	0	0	0	0	1000
							3	0	0	0	0	0	0	0	0	0	0	0	1000
							4	0	0	0	0	0	0	0	0	0	0	0	1000
							5	0	0	0	0	0	0	0	0	0	0	0	1000
							6	0	0	0	0	0	0	0	0	0	0	0	1000
							7	0	0	0	0	0	0	0	0	0	0	0	1000
							8	0	0	0	0	0	0	0	0	0	0	0	1000
							9	0	0	0	0	0	0	0	0	0	0	0	1000
							Total>>	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10000**
							0	0	0	0	0	0	0	0	0	0	0	0	1000
							1	0	0	0	0	0	0	0	0	0	0	0	1000
							2	0	0	0	0	0	0	0	0	0	0	0	1000
							3	0	0	0	0	0	0	0	0	0	0	0	1000
							4	0	0	0	0	0	0	0	0	0	0	0	1000
							5	0	0	0	0	0	0	0	0	0	0	0	1000
							6	0	0	0	0	0	0	0	0	0	0	0	1000
							7	0	0	0	0	0	0	0	0	0	0	0	1000
							8	0	0	0	0	0	0	0	0	0	0	0	1000
							9	0	0	0	0	0	0	0	0	0	0	0	1000
							Total>>	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10000**

APPENDIX A

PART 1-SECTION A _____ ***NPA*** **UTILIZATION STUDY FORMAT**
CONTAMINATION LEVELS ***RATE CENTER*** _____

INFORMATION								CONTAMINATION LEVELS												
OCN	COC Type	LNP	Special Use	Rate Center	NPA	NXX	X	Contamination %	0%	Quantity	0%</= 10%	Quantity	10%</= 15%	Quantity	15% </= 20%	Quantity	20% </= 25%	Quantity	>25%	Quantity
0	0	0	0	0	0	0	0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
0							1	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							2	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							3	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							4	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							5	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							6	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							7	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							8	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							9	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
								TOTAL		**10**		**0**		**0**		**0**		**0**		**0**
0	0	0	0	0	0	0	0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
0							1	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							2	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							3	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							4	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							5	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							6	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							7	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							8	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							9	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
								TOTAL		**10**		**0**		**0**		**0**		**0**		**0**
0	0	0	0	0	0	0	0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
0							1	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							2	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							3	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							4	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							5	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							6	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							7	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							8	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
							9	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
								TOTAL		**10**		**0**		**0**		**0**		**0**		**0**

APPENDIX A

PART 1-SECTION B _____ *NPA* **UTILIZATION STUDY FORMAT**
TYPE 1 NUMBERS ***RATE CENTER*** _____

INFORMATION						ASSIGNED	ADMINISTRATIVE				INTER-MEDIATE	RESERVED	AGING			UNAVAILABLE	AVAILABLE
OCN	Donor SP	Rate Center	NPA	NXX-X	TN RANGE	**TOTAL**	Internal/Official	Test	Other	**TOTAL**	**TOTAL**	**TOTAL**	RES	BUS	**TOTAL**	**TOTAL**	**TOTAL**
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
						0	0	0	0	0	0	0	0	0	0	0	#NAME?
					Total>>	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**#NAME?**
					0	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					1	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					2	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					3	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					4	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					5	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					6	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					7	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					8	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					9	0	0	0	0	0	0	0	0	0	0	0	#NAME?
					Total>>	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**#NAME?**

APPENDIX A

PART 1-SECTION B _____ ***NPA*** **UTILIZATION ST UDY FORMAT**

TYPE 1 CONTAMINATION LEVELS ***RATE CENTER*** _____

INFORMATION						**CONTAMINATION LEVELS**												
OCN	Donor SP	Rate Center	NPA	NXX-X	TN RANGE	Contamination %	0%	Quantity	0%<= 10%	Quantity	10%<= 15%	Quantity	15% <= 20%	Quantity	20% <= 25%	Quantity	>25%	Quantity
0	0	0	0	0	0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
0					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					Total>>			**10**		**0**		**0**		**0**		**0**		**0**
0	0	0	0	0	0	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
0					1	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					2	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					3	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					4	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					5	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					6	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					7	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					8	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					9	0%	Yes	1	No	0	No	0	No	0	No	0	No	0
					Total>>			**10**		**0**		**0**		**0**		**0**		**0**

APPENDIX A

PART 2 ***NPA*** **UTILIZATION ST UDY FORMAT**

SERVICE PROVIDER:										
REPORT DATE:				As of 4/30/2000						
SPECIAL USE IDENTIFICATION:										
								TIME, WEATHER, HVC, ETC.		
	NXX:						PURPOSE:			
	NXX:						PURPOSE:			
	NXX:						PURPOSE:			
	NXX:						PURPOSE:			
	NXX:						PURPOSE:			
	NXX:						PURPOSE:			
	NXX:						PURPOSE:			
	NXX:						PURPOSE:			
ASSIGNED NUMBERS:										
	Total quantity of **assigned TNs** that are non-working wireless in the NPA:									
INTERIM LOCAL NUMBER PORTABILITY (INP):										
	Total quantity of **assigned TNs** dedicated to INP in the NPA:									

APPENDIX A

PART 2 ***NPA*** **UTILIZATION ST UDY FORMAT**

TYPE 1 INTERCONNECTIONS:

DONORS: Identified as SPs that have assigned Type 1 numbers to other SPs:

	NXX-X	***TELEPHONE NUMBER RANGE***	***QUANTITY OF TNs ASSIGNED***	***RATE CENTER***	***RECIPIENT SERVICE PROVIDER***	***RECIPIENT SP's OCN***

APPENDIX A

DEFINITIONS FOR UTILIZATION STUDY

Administrative: Administrative numbers are numbers used by telecommunications carriers to perform internal administrative or operational functions necessary to maintain reasonable quality of service standards. Subcategories used in the Utilization Studies are:

Internal Business Purpose/Official Numbers: A number assigned by a service provider for its own internal business purposes

Test Numbers: Telephone numbers (TNs) assigned for inter- and intra-network testing purposes

Other Administrative Numbers (include only Location Routing Number, Temporary Local Directory Number and Wireless E911 ESRD/ESRK) where

Identical to a Local Routing Number (LRN): The ten-digit (NPA-XXX-XXXX) number assigned to a switch/point of interconnection (POI) used for routing in a permanent local number portability environment

Temporary Local Directory Number (TLDN): 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

Wireless E-911 ESRD/ESRK: A ten-digit number used for the purpose of routing an E911 call to the appropriate Public Service Answering Point (PSAP) when that call is originating from wireless equipment. The ESRD identifies the cell site and sector of the call origination in a wireless call scenario. The Emergency Services Routing Key (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. If a NANP telephone number is used as an ESRD or ESRK, this number cannot be assigned to a customer.

For convenience, "other administrative numbers" are reported as a group for purposes of the Utilization Study

Aging Numbers: Aging numbers are disconnected numbers that are not available for assignment to another end user or customer for a specified period of time. Numbers previously assigned to residential customers may be aged for no more than 90 days. Numbers previously assigned to business customers may be aged for no more than 360 days. For purposes of the Utilization Study, carriers are to separately report aging numbers associated with residential service from those associated with business service.

Assigned Numbers: Assigned numbers are numbers working in the Public Switched Telephone Network under an agreement such as a contract or tariff at the request of specific end users or customers for their use, or numbers not yet working but having a customer service order pending. Numbers that are not yet working and have a service order pending for more than five days shall not be classified as assigned numbers. For purposes of the Utilization Studies, numbers for non-working wireless and for interim number portability are to be considered as assigned numbers in Part 1-Section A and separately identified in Part 2. See Interim Number Portability and Non-Working Wireless for definitions.

Available Numbers: Available numbers are numbers that are available for assignment to subscriber access lines, or their equivalents, within a switching entity or point of interconnection and are not classified as assigned, intermediate, administrative, aging, or reserved.

COC Type: Three-digit element defining the use of the Central Office Code (codes such as 0XX used for access tandem and testboard addressing or a "+" symbol that indicates direct routing to the designated switch in the area code. 2XX-9XX values are considered NXXs.) Allowable codes in the LERG Destination Code by LATA and Tandem Homing Arrangements (LERG 6/9) are:

ATC = Access Tandem Code (0/1XX)
CDA = Customer Directory Assistance only (555 line numbers are assigned by the North American Numbering Plan Administration)

EOC = End Office Code
PLN = Planned Code - non-routable
PMC = Public Mobile Carrier (Type 2 Interconnected)
RCC = Radio Common Carrier (Dedicated Type 1 Interconnected)
SIC = Special 800 Service Code
SP1 = Service Provider - Miscellaneous Service (Type 1 Interconnected)
SP2 = Service Provider - Miscellaneous Service (Type 2 Interconnected)
TST = Standard Plant Test Code

Allowable codes in the LERG Oddball file (LERG6ODD only) are:

700 = 700 IntraLATA Presubscription
AIN = Advanced Intelligent Network
BLG = Billing Only
BRD = Broadband
CTV = Cable Television
ENP = Emergency Preparedness
FGB = Feature Group B Access
HVL = High Volume
INP = Information Provider
LTC = Local Test Code
N11 = N11 Code

ONA = Open Network Architecture
PRO = Protected
RSV = Reserved
RTG = Routing Only
UFA = Unavailable for Assignment

Interim Number Portability (INP): The interim ability to move telephone service from one service provider to another service provider using Remote Call Forwarding (RCF), Direct Inward Dialing (DID), or equivalent means where:

> Remote Call Forwarding allows a customer to have a local telephone number in a distant location. Every time someone calls that number, that call is forwarded to the RCF customer in the distant location. Remote call forwarding is similar to call forwarding on a residential line, except that the RCF customer has no phone, no office and no physical presence in that location.
>
> A DID (Direct Inward Dial) trunk is a trunk from the Central office which passes the last two to four digits of the Listed Directory Number into the PBX, thus allowing the PBX to switch the call to and thus ring the correct extension" without the use of an attendant (Newton's Telecom Dictionary). Existing DID retail service is limited to PBX services. For purposes of providing INP, Pacific and GTEC will use the DID switch functionality to provide INP to any CLC customer regardless of the type of terminal equipment used on the customers' premises.
>
> For the purposes of the Utilization Study, each carrier must report the quantity of its assigned numbers that are dedicated to providing INP under Assigned Numbers in Part 1-Section A and separately identified in Part 2.

Intermediate Numbers: Intermediate numbers are numbers that are made available for use by another telecommunications carrier or non-carrier entity for the purpose of providing telecommunications service to an end user or customer. Numbers ported for the purpose of transferring an established customer's service to another service provider shall not be classified as intermediate numbers. For Type 1 donor carriers, Type 1 numbers are to be reported as intermediate numbers in Part 1-Section A and detailed information is to be provided in Part 2 for the Utilization Studies. For Type 1 recipient donors, Type 1 numbers shall be reported in the Part 1-Section B for the Utilization Studies. For definition, see Type 1 numbers.

Local Number Portability: The ability to move a telephone number from one service provider to another service provider using LRN-LNP technology

Non-Working Wireless: This category is for wireless companies only to report numbers that they have already assigned to customer equipment, but are not yet working. For example, cellular carriers often pre-package a cellular telephone with an assigned telephone number for sale to customers. Those phone numbers are assigned, but are not actually activated until after the customer purchase is made. For the purposes of the Utilization Study, each carrier must report the quantity of its non-working wireless numbers under Assigned Numbers in Part 1-Section A and separately identified in Part 2.

OCN: Operating Company Number (OCN) assignments must uniquely identify the applicant. Relative to CO Code assignments, NECA-assigned Company Codes may be used as OCN's. Companies with no prior CO Code or Company Code assignments should contact NECA (973-884-8355) to be assigned a Company Code(s). Since multiple OCNs and/or Company codes may be associated with a given company, companies with prior assignments should direct questions regarding appropriate OCN usage to the Traffic Routing Administration (TRA) on 732-699-6700

Reserved Numbers: Reserved numbers are numbers that are held by service providers at the request of specific end users or customers for their future use. Numbers held for specific end users or customers for more than 45 days shall not be classified as reserved numbers.

Special Use NXX Codes: Certain NXX codes have traditionally been reserved or designated for special uses, and have not been available for assignment by carriers for general commercial use in providing telephone numbers to customers. These NXX prefixes are restricted to such special uses as recorded public information announcements of time-of-day and weather forecasts, high-volume call-in numbers, and emergency access numbers used by the Federal Emergency Management Administration (FEMA), etc.

Type 1 Numbers: Numbers pursuant to a Type 1 interconnection agreement. The Type 1 interconnection is a connection between a mobile/wireless service provider and an end office of another service provider for the purpose of originating and terminating traffic or for access to end user services (i.e. DA, Operator services, 911, etc). The interconnection consists of a facility between the mobile/wireless service provider and the end office, switch usage, and telephone numbers (only required if the mobile carrier wishes to receive originating (L/M) traffic). For the purposes of the 310 Utilization Study, both mobile/wireless service providers who have received Type 1 numbers and those service providers who have provided Type 1 numbers to mobile/wireless service providers are asked to report on those numbers at the 1000 block level.

Table A-1
Prefix Holders in 909 Area Code

1 AB Cellular Holding, LLC dba AT&T Wireless
2 Airstar Paging
3 Airtouch Cellular – CA
4 Airtouch Paging – California
5 Allegiance Telecom, Inc.-CA
6 AT&T - Local – CA
7 AT&T Local
8 Continental Tel Co of California, Inc.
9 Cook Telecom, Inc.
10 Cox California PCS, Inc.
11 CRL Network Services, Inc
12 Crown Cellular & Paging
13 Digitcom Services, Inc.
14 Firstworld Anaheim
15 Focal Communications Corp of California
16 Frontier Local Services, Inc.-CA
17 GST Pacific Lightwave
18 GTE Co of California
19 ICG Telecom Group - CA
20 Justice Technology Corp.
21 Level 3 Communications, LLC-CA
22 Mac Land, Inc.
23 Map Mobile Communications, Inc.
24 MCIMetro, ATS, Inc.
25 MediaOne Telecommunications of California, Inc.
26 Message Center Beepers, Inc
27 Metrocall
28 MGC Communications, Inc.-CA
29 Mobilecomm
30 Nationwide Paging, Inc.
31 Network Services LLC
32 Nextel Communications
33 Nextlink of California
34 North County Communications Corp.-CA
35 O1 Communications, Inc.
36 Optel California Telecom, Inc
37 Pacific Bell
38 Pacific Bell - CLEC
39 Pacific Bell Mobile Services
40 Pac-West Telecomm, Inc.
41 Paetec Communications, Inc. - CA
42 Pagecell, Inc. - California
43 Pagenet
44 Pagers Plus dba Pageprompt, Inc.
45 Paging Dimensions, Inc.
46 Paging Plus
47 Radiocall Service & Systems, Inc.
48 San Diego Paging
49 Sprint Communications Company, L.P. - CA
50 Teleport Communications Group - Los Angeles
51 The Telephone Connection of Los Angeles, Inc.
52 The Westlink Company
53 TSR Wireless LLC
54 U.S. Telepacific Corp.-CA

APPENDIX B

Table B-1

3.9 million Available Numbers

	Blocks	Numbers
Wireline Carriers	5,000	2,199,027
Wireless Carriers	1,910	679,018
Type 1 Carriers		153,223
Subtotal	6,910	3,031,268
Set aside for number pooling	270	270,000
Available in lottery	580	580,000
Total	7,760	3,881,268
The 3 million available numbers assigned to carriers are broken down as:		
Wireline Carriers		
Blocks with 0% contamination	934	934,000
Blocks with more than 0% up to 10%	692	675,179
Subtotal: 0% to 10% contamination	1,626	1,609,179
Blocks with more than 10% up to 15%	108	95,743
Blocks with more than 15% up to 20%	73	59,217
Blocks with more than 20% up to 25%	30	23,406
Blocks with more than 25% contam.	3,163	411,482
Total	5,000	2,199,027
Wireless Carriers		
Blocks with 0% contamination	396	396,000
Blocks with more than 0% up to 10%	64	62,653
Subtotal: 0% to 10% contamination	460	458,653
Blocks with more than 10% up to 15%	8	6,942
Blocks with more than 15% up to 20%	6	4,909
Blocks with more than 20% up to 25%	20	15,423
Blocks with more than 25% contam.	1,416	193,091
Total	1,910	679,018
Type 1 Carriers		
Reported as Intermediate Numbers by Donors		551,200
Reported as Unavailable Numbers by Type 1 Carriers		(213,790)
Est. of Unavail. Numbers of Remaining Type 1 Carriers [1]		(184,187)
Total		153,223

1. Of the 551,200 numbers reported by donors as Type 1 numbers, Type 1 recipients only reported on 296,100 numbers: 213,790 unavaila and 82,310 available. Therefore, 255,100 numbers are unaccounted for. Staff estimated the unavailable numbers for the unaccounted numbers using the ratio from numbers that were reported, namely 213,790 divided by 296,100.

APPENDIX B

Table B-2

Numbers Potentially Reallocable Among Carriers

			Running Total	
	Available Outside of Pooling:			
1	From lottery	580,000	580,000	
	Available for Pooling Under Current Rules:			
2	Wireline Carriers: 10% or less contamination [1]	987,830		
3	Set aside for number pooling	270,000		
4	Subtotal – Estimated Currently Poolable	1,257,830		
5	Baseline reallocable numbers		1,837,830	
	Other Possibilities for Pooling:			Increase from Baseline
6	Available Numbers from non-LNP blocks of wireline carriers	19,935	1,857,765	1.1%
7	Available Numbers from Special Use Prefixes	9,975	1,867,740	0.5%
8	Unavailable Numbers from Special Use Prefixes [2]	20,000	1,887,740	1.1%
9	Wireline Carriers: Up to 15% contamination	95,743	1,983,483	5.2%
10	Wireline Carriers: Up to 20%	59,217	2,042,700	3.2%
11	Wireline Carriers: Up to 25%	23,406	2,066,106	1.3%
12	Cellular & PCS Carriers: Up to 10% [3]	229,327	2,295,432	12.5%
13	Cellular & PCS Carriers: Up to 15% [3]	3,471	2,298,903	0.2%
14	Cellular & PCS Carriers: Up to 20% [3]	2,455	2,301,358	0.1%
15	Cellular & PCS Carriers: Up to 25% [3]	7,712	2,309,069	0.4%
16	Type 1 Carriers: Up to 10%	11,665	2,320,734	0.6%
17	Type 1 Carriers: Up to 25%	23,910	2,344,644	1.3%
18	Paging Carriers: Up to 10% [3]	229,327	2,573,971	12.5%
19	Paging Carriers: Up to 15% [3]	3,471	2,577,442	0.2%
20	Paging Carriers: Up to 20% [3]	2,455	2,579,896	0.1%
21	Paging Carriers: Up to 25% [3]	7,712	2,587,608	0.4%
22	Subtotal – Additional Potentially Poolable Numbers	749,778		27.6%
23	Total – Potentially Poolable Numbers	2,007,608		
24	Total Potentially Reallocable Numbers	2,587,608		

Notes:

1. Actual numbers available to pool after carriers keep the allowed 6-month inventory were estimated from the 1,579,269 available numbers in LNP-capable, non-special-use blocks that are 10% or less contaminated, using the ratio of pooling donations to total 10% or less contaminated blocks (62.55%) from the 310 pool.

2. See Chapter 2, Section D.1.c. for discussion of special use prefixes.

3. While cellular and PCS carriers have until November 2002 to become LNP capable, paging companies are currently exempted indefinitely. Therefore, TD estimated the percentages of prefixes held by cellular and PCS (50%) vs. paging (50%), and applied the percentages to the total available wireless numbers.

Table B-3a
909 - Wireline Carriers' Available Numbers by Contamination Level up to 25%

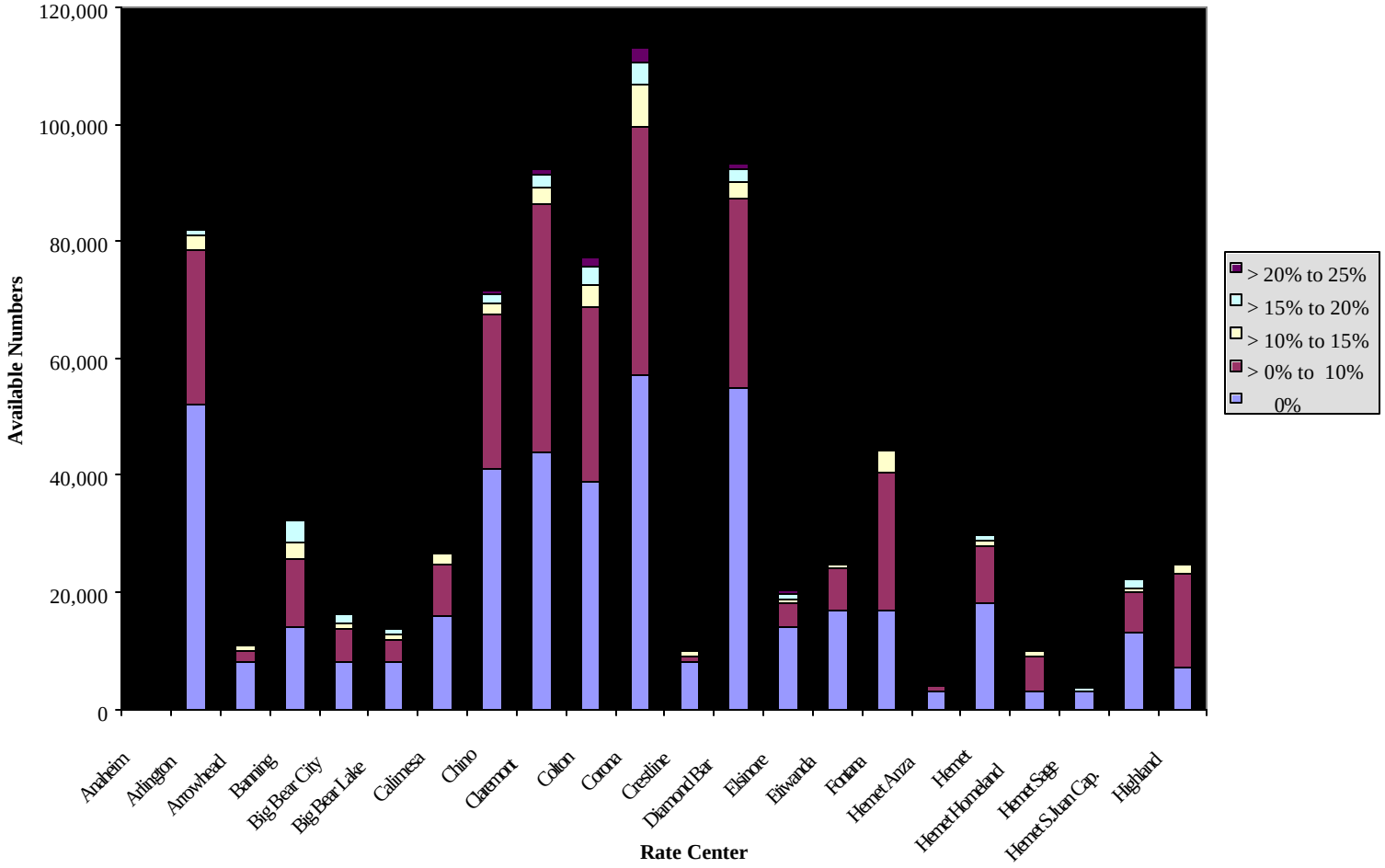


Table B-3b
909 - Wireline Carriers' Available Numbers by Contamination Level (cont.)

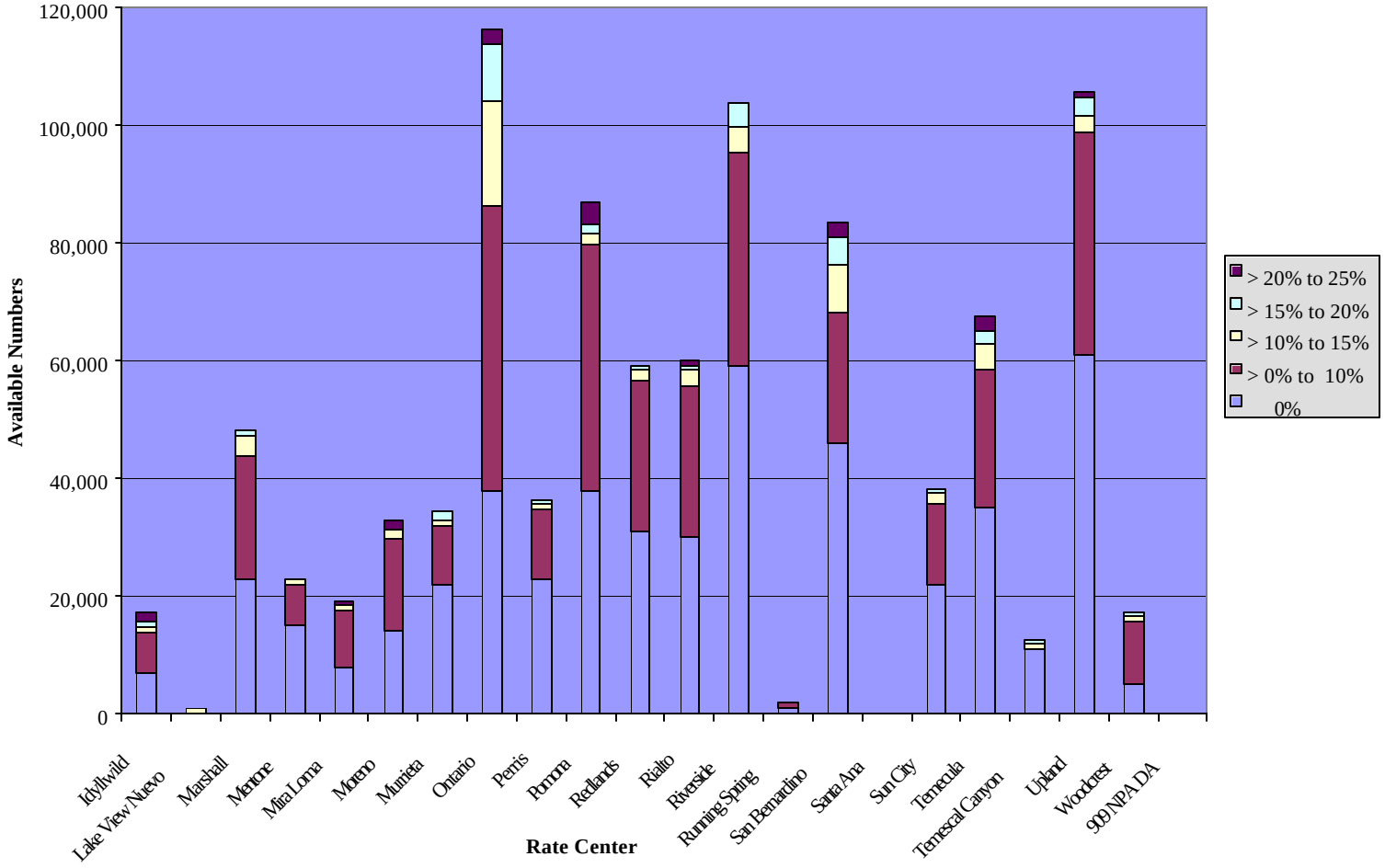


Table B-4a
909 - Wireless Carriers' Available Numbers by Contamination Level up to 25%

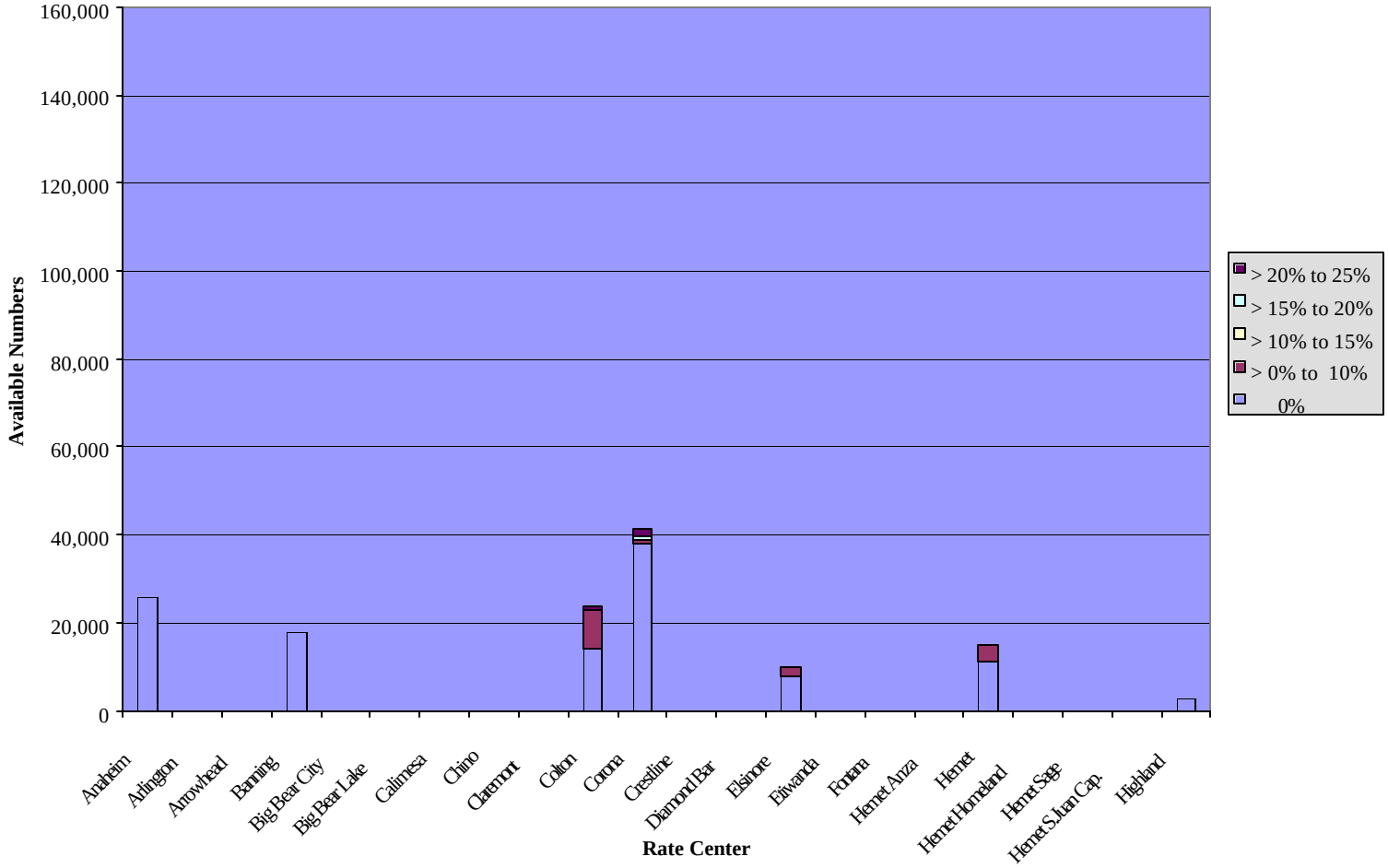


Table B-4b
909 - Wireless Carriers' Available Numbers by Contamination Level (cont.)

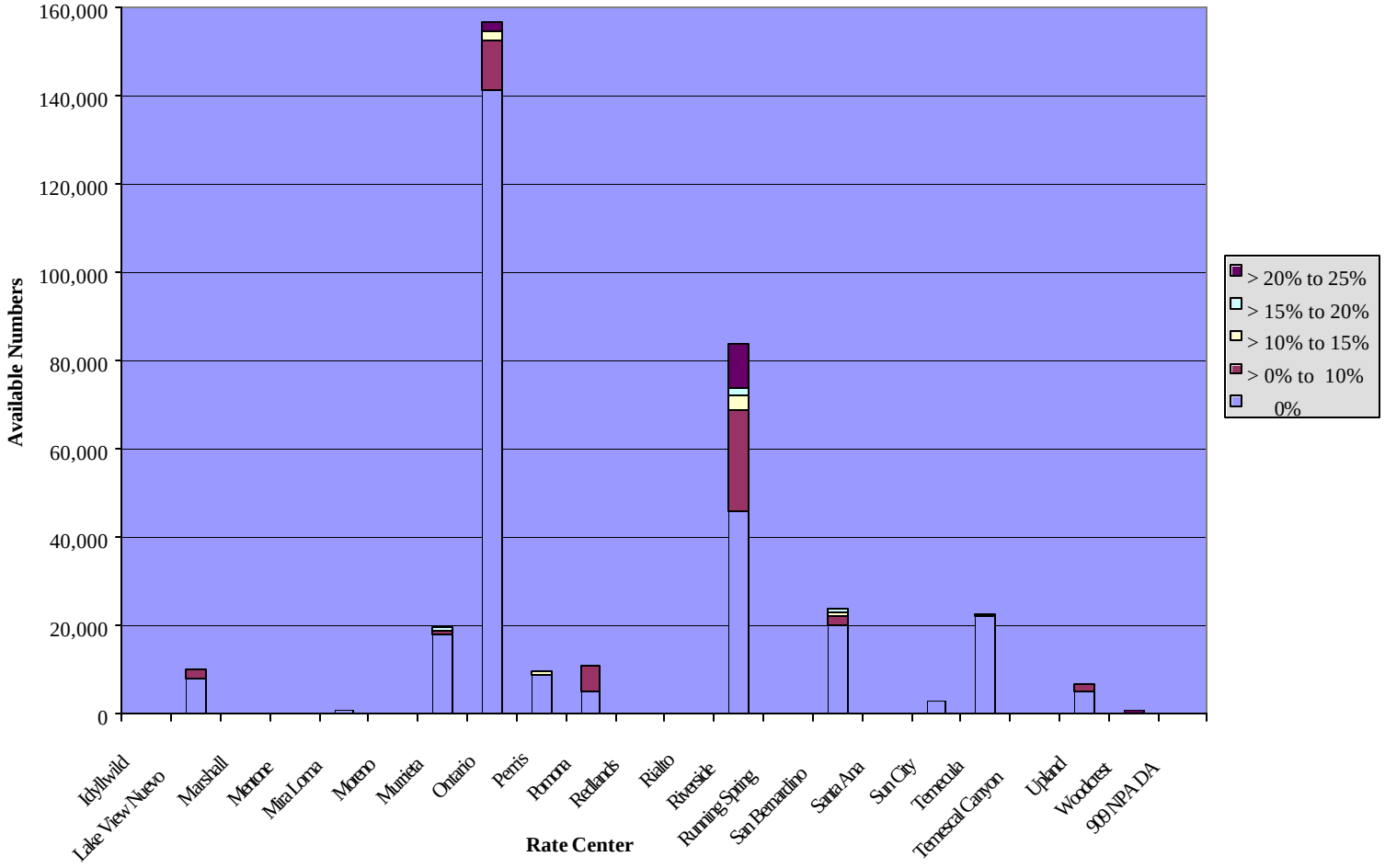


Table B-5a
909 - Numbers Assigned by Wireline and Wireless Carriers

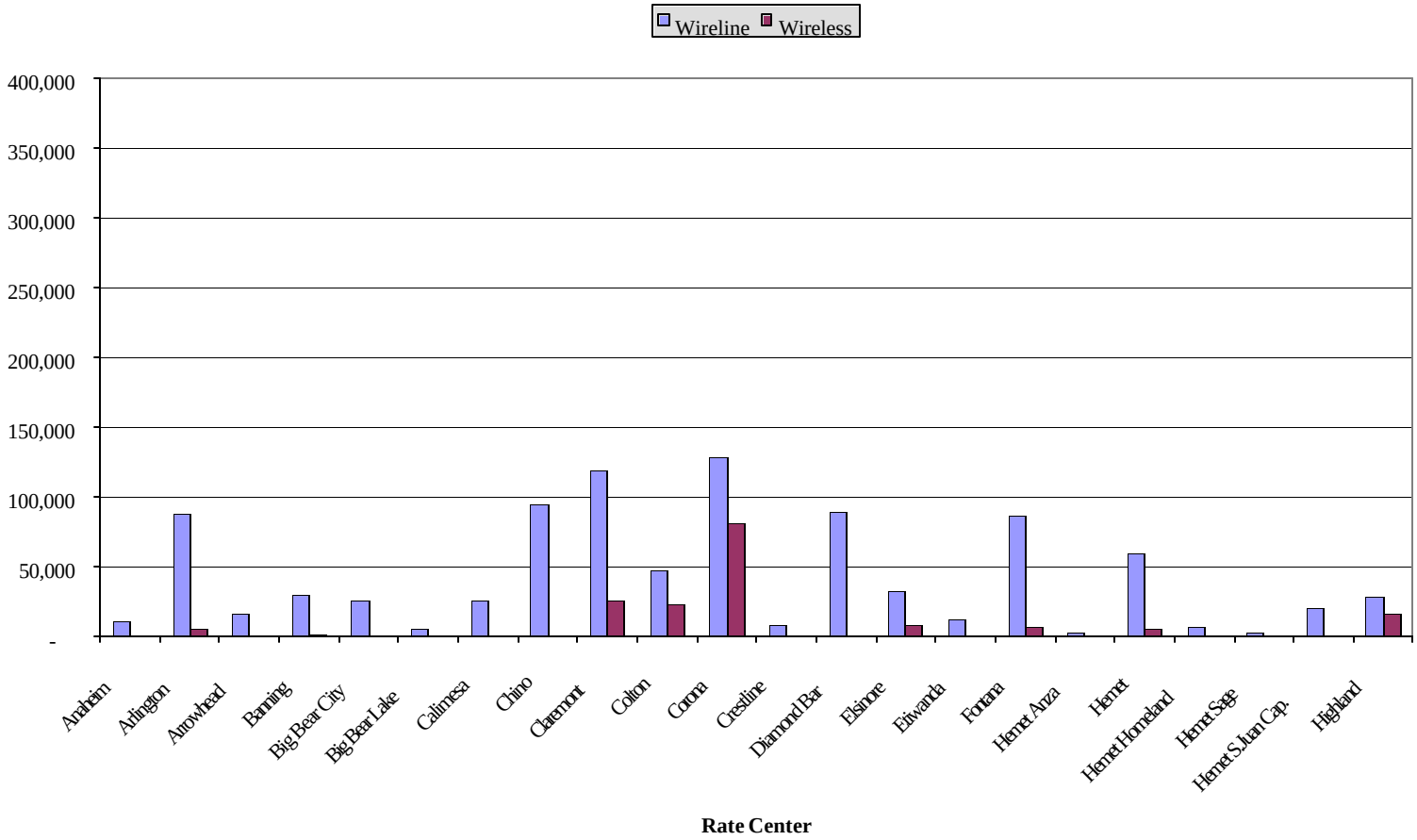


Table B-5b
909 - Numbers Assigned by Wireline and Wireless Carriers (cont.)

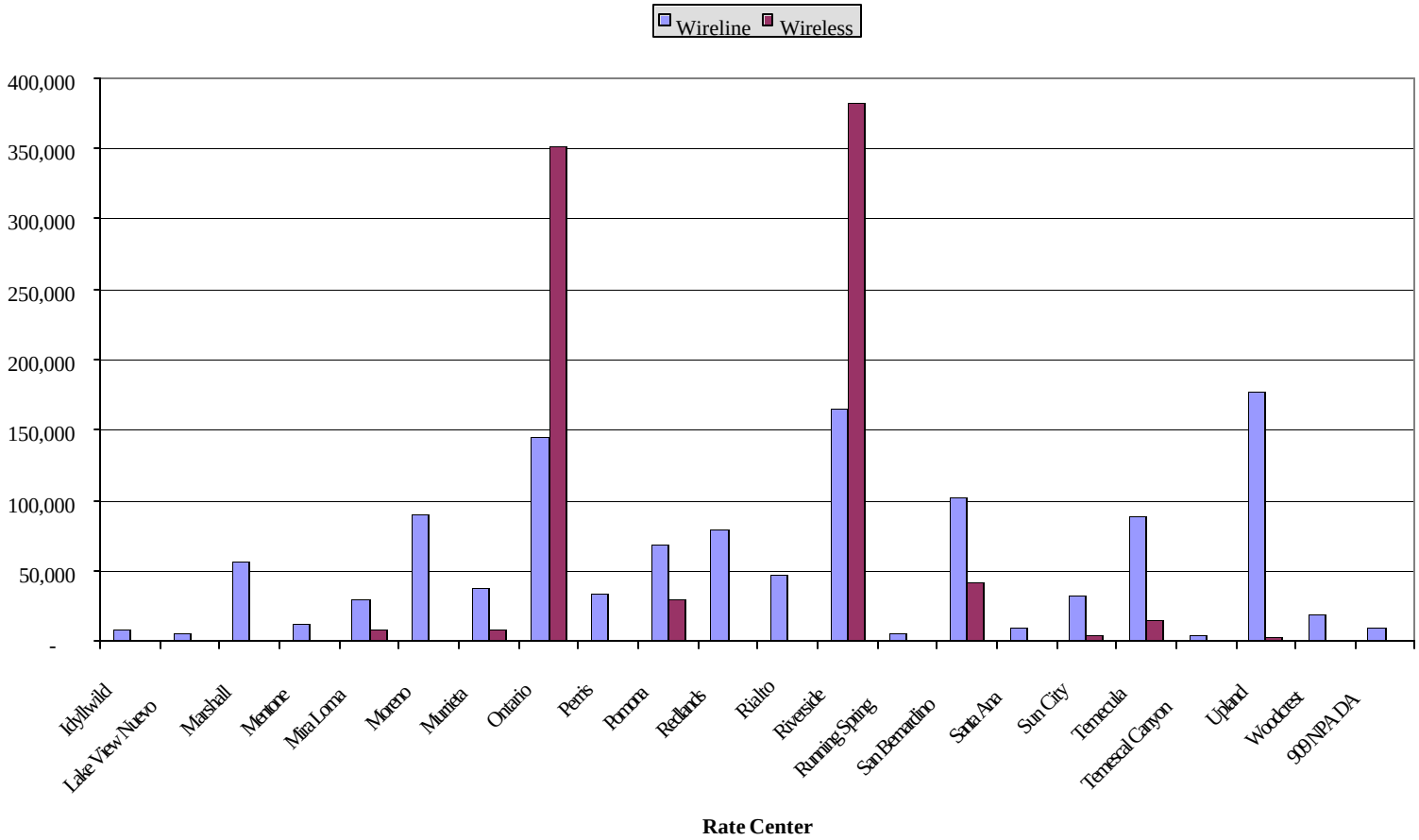


Table B-6a
909 - Numbers in Use Vs. Total Numbers Held by Wireline Carriers

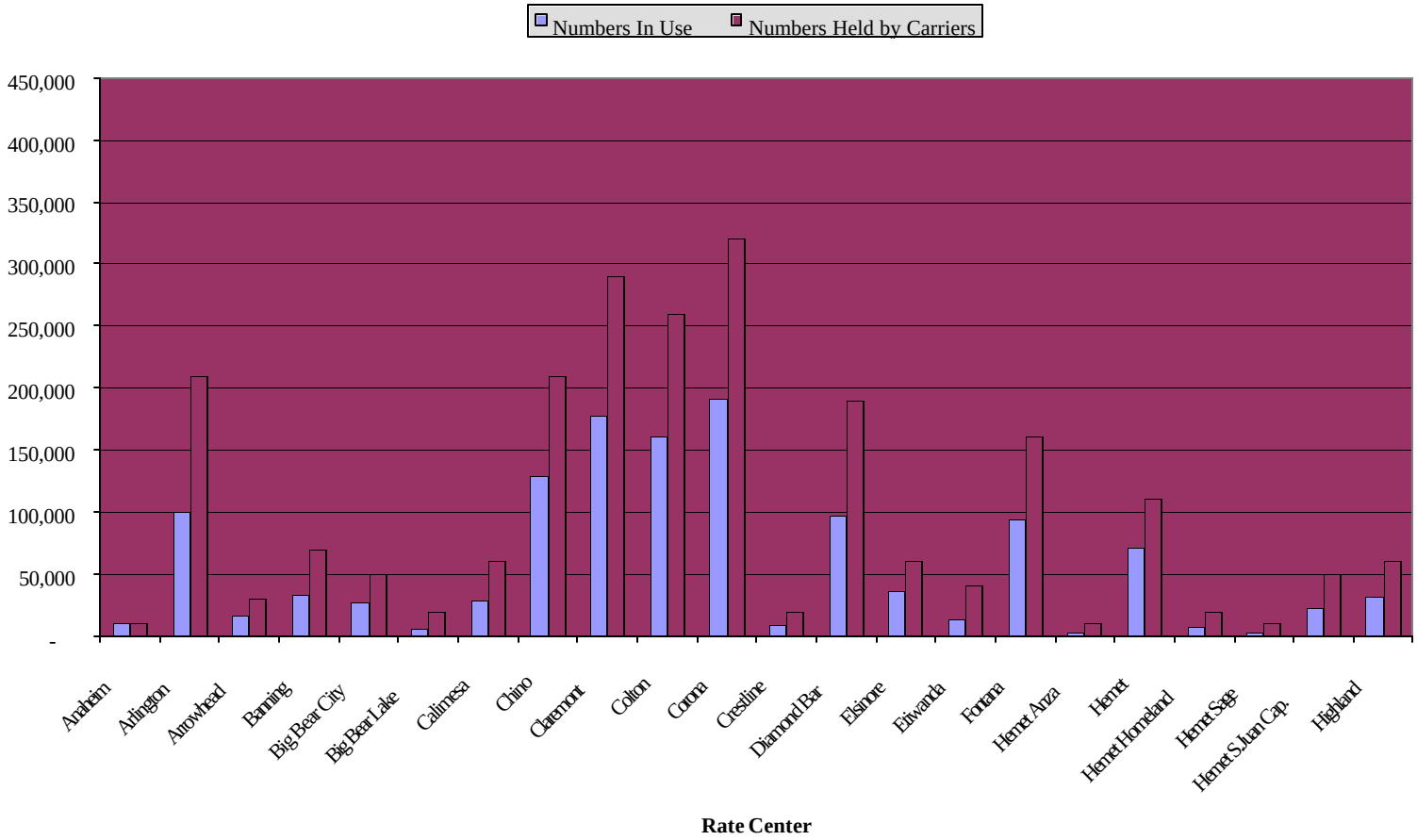


Table B-6b
909 - Numbers in Use Vs. Total Numbers Held by Wireline Carriers (cont.)

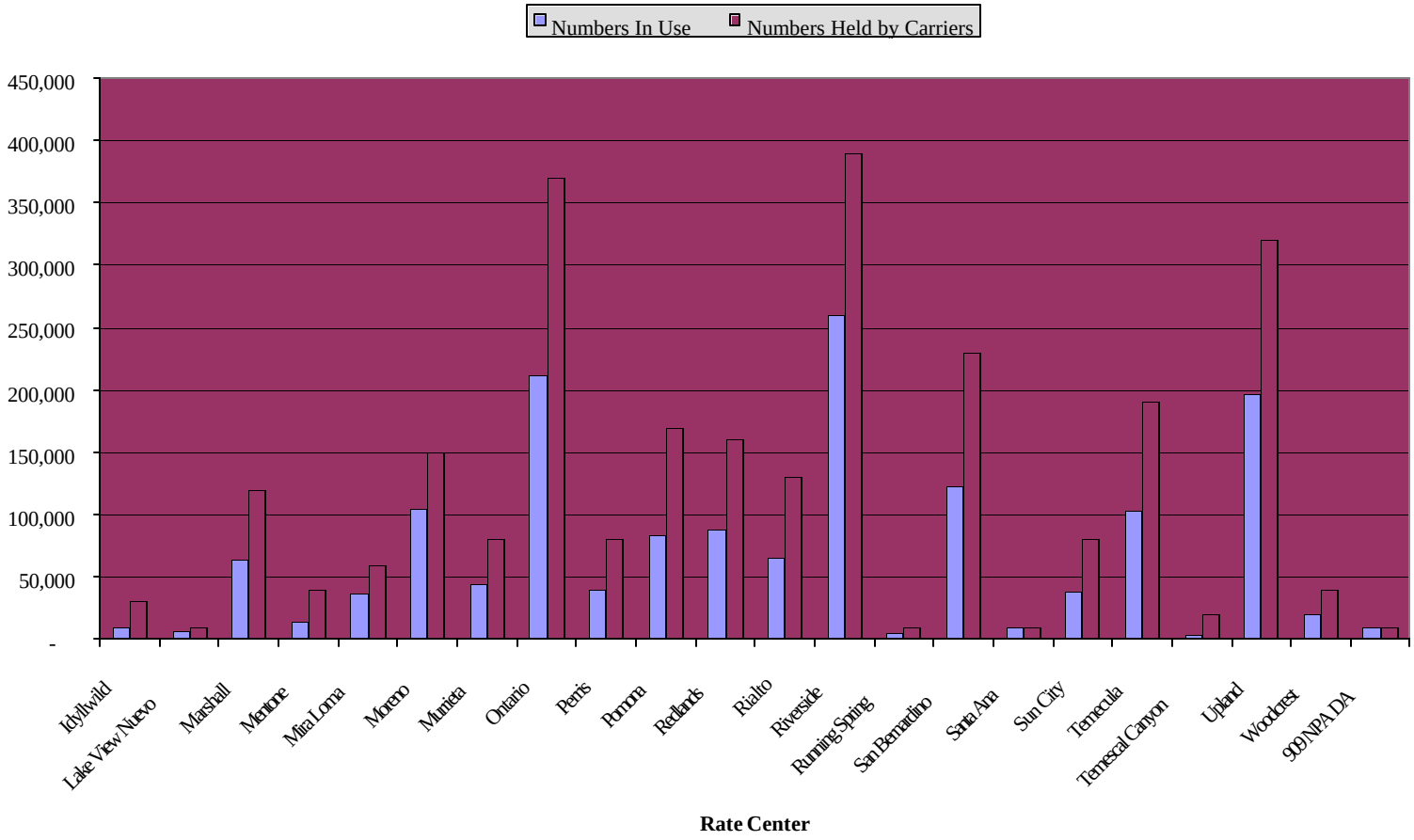


Table B-7a
909 - Numbers in Use Vs. Total Numbers Held by Wireless Carriers

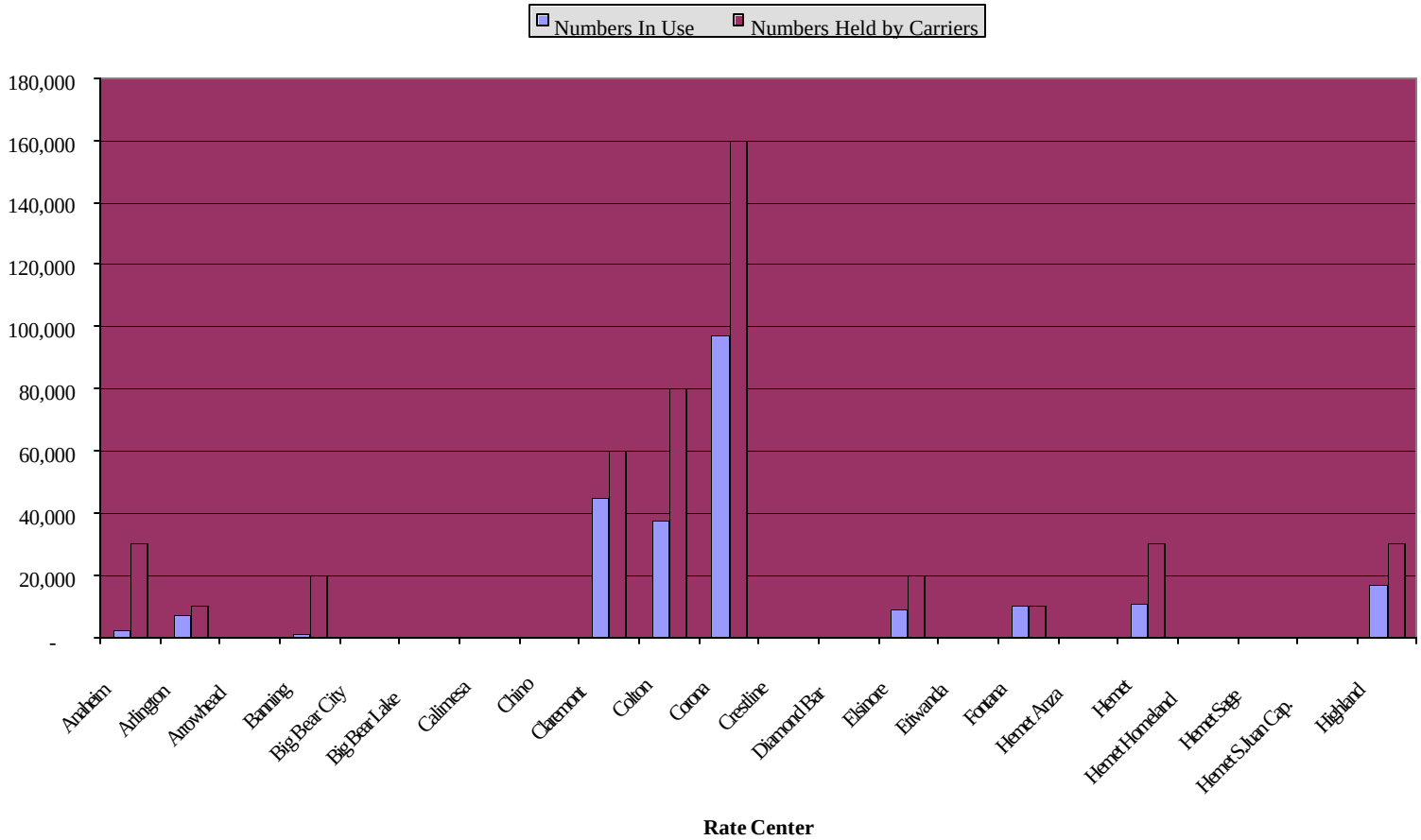
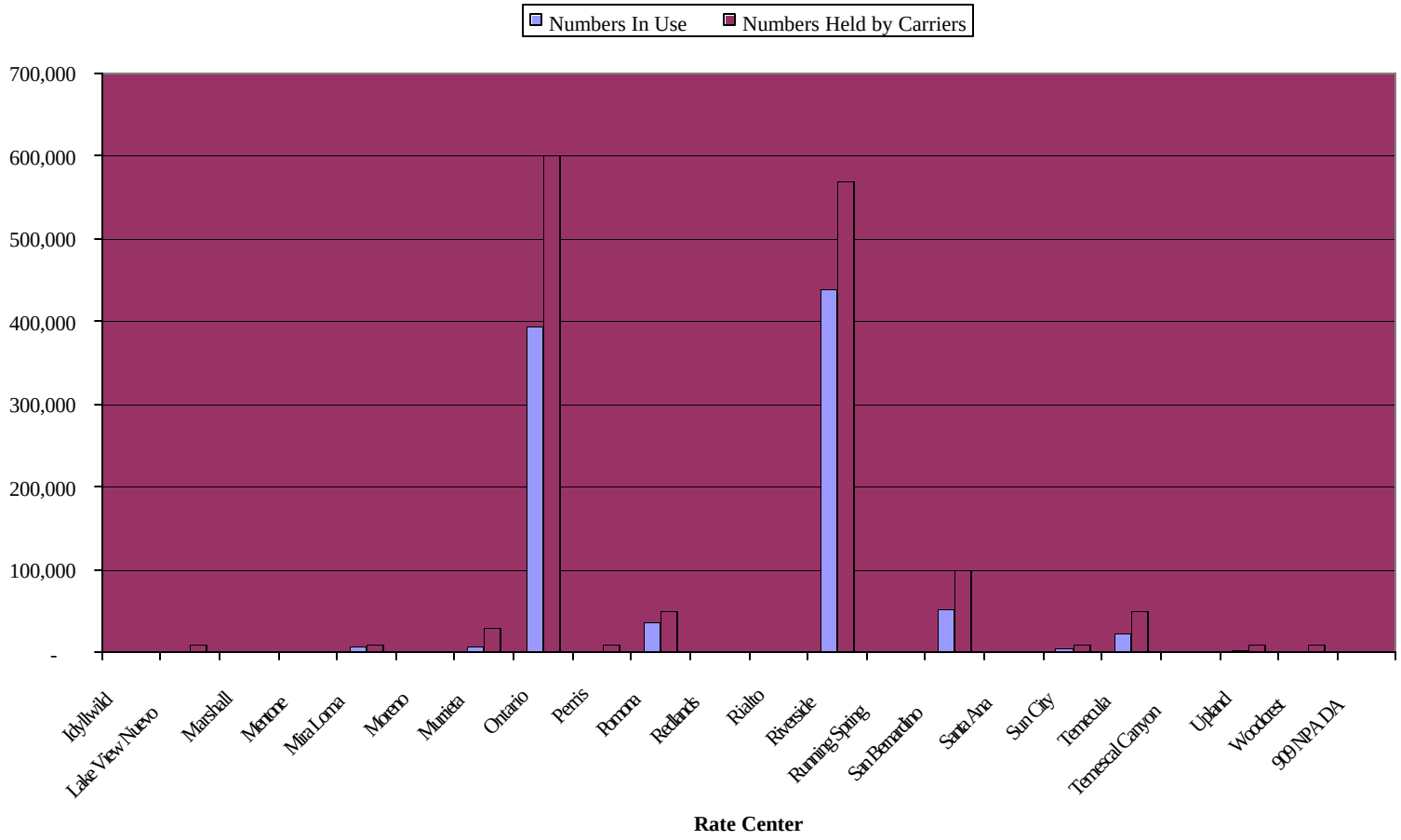


Table B-7b
909 - Numbers in Use Vs. Total Numbers Held by Wireless Carriers (cont.)



APPENDIX C
909 SPECIAL USE PREFIXES

PREFIX	PURPOSE	TOTAL	UNAVAILABLE	AVAILABLE
431	High Volume Calling	10,000	25	9,975
555	Directory Assistance	10,000	10,000	0
561	Emergency Preparedness	10,000	10,000	0
820	Mobile Radio	10,000	9,368	632
853	Time Service	10,000	10,000	0
877	Mobile Radio	10,000	9150	850

APPENDIX D

Table D-1

Wireline Reserved Numbers in the 909 Area Code		
Rate Center	**Number of Wireline Carriers**	**Reserved Numbers**
ANAHEIM	0	0
ARLINGTON	7	2582
ARROWHEAD	2	24
BANNING	4	22
BIG BEAR CITY	2	21
BIG BEAR LAKE	2	0
CALIMESA	3	36
CHINO	7	503
CLAREMONT	8	459
COLTON	7	2203
CORONA	10	13487
CRESLINE	2	2
DIAMOND BAR	8	1031
ELSINORE	2	38
ETIWANDA	3	5
FONTANA	4	1,945
HEMET ANZA	1	1
HEMET HEMET	2	50
HEMET HOMELAND	2	5
HEMET SAGE	1	9
HEMET SAN JAUN CAPISTRANO	3	7
HIGHLAND	3	883
IDYLLWILD	3	5

LAKE VIEW NUEVO	1	14
MARSHALL	4	62
MENTONE	3	4
MIRA LOMA	2	929
MORENO	3	1,158
MURRIETA	4	652
ONTARIO	14	2,088
PERRIS	3	25
POMONA	8	6,982
REDLANDS	7	62
RIALTO	6	1,140
RIVERSIDE	10	16,976
RUNNING SPRINGS	1	5
SAN BERNARDINO	7	445
SUN CITY	4	26
TEMECULA	4	153
TEMSCAL CANYON	2	98
UPLAND	6	2,204
WOODCREST	2	178
Total		56,519

APPENDIX D

Table D-2

Wireless Reserved Numbers in the 909 Area Code		
Rate Center	**Number of Wireless Carriers**	**Reserved Numbers**
ANAHEIM	4	0
ARLINGTON	1	1481
ARROWHEAD	0	0
BANNING	2	0
BIG BEAR CITY	0	0
BIG BEAR LAKE	0	0
CALIMESA	0	0
CHINO	0	0
CLAREMONT	2	0
COLTON	5	622
CORONA	9	26
CRESLINE	0	0
DIAMOND BAR	0	0
ELSINORE	1	0
ETIWANDA	0	0
FONTANA	1	3
HEMET ANZA	0	0
HEMET HEMET	2	0
HEMET HOMELAND	0	0
HEMET SAGE	0	0
HEMET SAN JUAN CAPISTRANO	0	8
HIGHLAND	2	0

IDYLLWILD	0	0
LAKE VIEW NUEVO	1	0
MARSHALL	0	0
MENTONE	0	250
MIRA LOMA	1	142
MORENO	0	0
MURRIETA	3	0
ONTARIO	18	13
PERRIS	1	0
POMONA	3	0
REDLANDS	7	3,358
RIALTO	0	0
RIVERSIDE	15	90
RUNNING SPRINGS	0	0
SAN BERNARDINO	6	0
SUN CITY	1	5
TEMECULA	4	0
TEMSCAL CANYON	0	0
UPLAND	1	0
WOODCREST	1	0
Total		5,998

APPENDIX E

Table E-1

Wireline Administrative Numbers in the 909 Area Code					
Rate Center	**Number of Wireline Carriers**	**Employee/ Official Numbers**	**Test**	**Other**	**Total Admin Numbers**
ANAHEIM	0	0	0	0	0
ARLINGTON	7	15	321	0	336
ARROWHEAD	2	514	105	2	621
BANNING	4	1813	118	3	1934
BIG BEAR CITY	2	994	110	3	1107
BIG BEAR LAKE	2	600	101	1	702
CALIMESA	3	973	108	2	1083
CHINO	7	2305	290	1	2596
CLAREMONT	8	1935	363	6	2304
COLTON	7	762	708	117	1647
CORONA	10	1241	1,185	152	2,578
CRESLINE	2	405	101	2	508
DIAMOND BAR	8	862	216	3	1081
ELSINOR	2	1,147	118	3	1,268
ETIWANDA	3	323	133	2	458
FONTANA	4	10	412	5	427
HEMET ANZA	1	149	0	1	150
HEMET HEMET	2	1,165	129	3	1,297
HEMET HOMELAND	2	325	107	2	434
HEMET SAGE	1	71	5	0	76
HEMET SAN JUAN CAPISTRANO	3	1,671	105	2	1,778
HIGHLAND	3	109	314	181	604

IDYLLWILD	3	812	102	2	916
LAKE VIEW NUEVO	1	25	0	1	26
MARSHALL	4	3,136	203	3	3,342
MENTONE	3	368	138	1	507
MIRA LOMA	2	10	156	1	167
MORENO	3	2,280	156	3	2,439
MURRIETA	4	963	275	2	1,240
ONTARIO	14	13,862	632	156	14,650
PERRIS	3	1,345	134	1	1,480
POMONA	8	2,627	426	2	3,055
REDLANDS	7	2,218	169	3	2,390
RIALTO	6	212	501	2	715
RIVERSIDE	10	1,518	668	1,051	3,237
RUNNING SPRINGS	1	212	0	0	212
SAN BERNARDINO	7	3,449	215	5	3,669
SUN CITY	4	776	113	3	892
TEMECULA	4	1,731	216	3	1,950
TEMSCAL CANYON	2	1	16	0	17
UPLAND	6	2,984	417	55	3,456
WOODCREST	2	10	206	1	217
Total		55,928	9,792	1,786	67,566

APPENDIX E

Table E-2

Wireless Administrative Numbers in the 909 Area Code					
Rate Center	**Number of Wireless Carriers**	**Employee/ Official Numbers**	**Test**	**Other**	**Total Admin Numbers**
ANAHEIM	0	0	0	0	0
ARLINGTON	1	15	0	0	15
ARROWHEAD	0	0	0	0	0
BANNING	2	55	5	0	60
BIG BEAR CITY	0	0	0	0	0
BIG BEAR LAKE	0	0	0	0	0
CALIMESA	0	0	0	0	0
CHINO	0	0	0	0	0
CLAREMONT	2	0	20	0	20
COLTON	5	133	17	0	150
CORONA	9	160	315	1229	1,704
CRESTLINE	0	0	0	0	0
DIAMOND BAR	0	0	0	0	0
ELSINORE	1	0	6	0	6
ETIWANDA	0	0	0	0	0
FONTANA	1	100	1	229	330
HEMET ANZA	0	0	0	0	0
HEMET HEMET	2	0	8	0	8
HEMET HOMELAND	0	0	0	0	0
HEMET SAGE	0	0	0	0	0
HEMET SAN JAUN CAPISTRANO	0	0	0	0	0
HIGHLAND	2	0	5	0	5
IDYLLWILD	0	0	0	0	0

LAKE VIEW NUEVO	1	4	0	0	4
MARSHALL	0	0	0	0	0
MENTONE	0	0	0	0	0
MIRA LOMA	1	9	1	0	10
MORENO	0	0	0	0	0
MURRIETA	3	10	12	0	22
ONTARIO	18	224	1,991	460	2,675
PERRIS	1	55	4	0	59
POMONA	3	200	4	458	662
REDLANDS	7	2,218	169	3	2,390
RIALTO	0	0	0	0	0
RIVERSIDE	15	450	1,502	1,916	3,868
RUNNING SPRINGS	0	0	0	0	0
SAN BERNARDINO	6	202	748	458	1,408
SUN CITY	1	0	4	0	4
TEMECULA	4	150	13	229	392
TEMSCAL CANYON	0	0	0	0	0
UPLAND	1	0	4	0	0
WOODCREST	1	0	0	0	0
Total		3,985	4,829	4,982	13,792

APPENDIX F

Table F-1

Wireline Intermediate Numbers in the 909 Area Code		
Rate Center	**Number of Wireline Carriers**	**Intermediate Numbers**
ANAHEIM	0	0
ARLINGTON	7	3700
ARROWHEAD	2	0
BANNING	4	0
BIG BEAR CITY	2	0
BIG BEAR LAKE	2	0
CALIMESA	3	0
CHINO	7	26900
CLAREMONT	8	49800
COLTON	7	107100
CORONA	10	41200
CRESTLINE	2	0
DIAMOND BAR	8	1600
ELSINORE	2	0
ETIWANDA	3	0
FONTANA	4	0
HEMET ANZA	1	0
HEMET HEMET	2	8,300
HEMET HOMELAND	2	0
HEMET SAGE	1	400
HEMET SAN JUAN CAPISTRANO	3	0
HIGHLAND	3	0
IDYLLWILD	3	0

LAKE VIEW NUEVO	1	0
MARSHALL	4	0
MENTONE	3	0
MIRA LOMA	2	3,000
MORENO	3	8,000
MURRIETA	4	3,600
ONTARIO	14	42,500
PERRIS	3	3,300
POMONA	8	100
REDLANDS	7	3,100
RIALTO	6	11,400
RIVERSIDE	10	67,300
RUNNING SPRINGS	1	0
SAN BERNARDINO	7	11,700
SUN CITY	4	2,800
TEMECULA	4	6,900
TEMSCAL CANYON	2	0
UPLAND	6	8,600
WOODCREST	2	300
Total		411,600

APPENDIX F

Table F-2

Wireless Intermediate Numbers		
Rate Center	**Number of Wireless Carriers**	**Intermediate Numbers**
ANAHEIM	0	0
ARLINGTON	1	0
ARROWHEAD	0	0
BANNING	2	0
BIG BEAR CITY	0	0
BIG BEAR LAKE	0	0
CALIMESA	0	0
CHINO	0	0
CLAREMONT	2	16032
COLTON	5	12291
CORONA	9	7922
CRESTLINE	0	0
DIAMOND BAR	0	0
ELSINORE	1	0
ETIWANDA	0	0
FONTANA	1	2,396
HEMET ANZA	0	0
HEMET HEMET	2	5,068
HEMET HOMELAND	0	0
HEMET SAGE	0	0
HEMET SAN JAUN CAPISTRANO	0	0
HIGHLAND	2	0

IDYLLWILD	0	0
LAKE VIEW NUEVO	1	0
MARSHALL	0	0
MENTONE	0	0
MIRA LOMA	1	0
MORENO	0	0
MURRIETA	3	0
ONTARIO	18	8,315
PERRIS	1	0
POMONA	3	3,814
REDLANDS	7	0
RIALTO	0	0
RIVERSIDE	15	14,348
RUNNING SPRINGS	0	0
SAN BERNADINO	6	6,242
SUN CITY	1	1,649
TEMECULA	4	5,752
TEMSCAL CANYON	0	0
UPLAND	1	332
WOODCREST	1	0
Total		84,161

APPENDIX G

TABLE G-1			
AGING NUMBERS IN THE 909 Area Code			
	RESIDENTIAL	**BUSINESS**	**TOTAL**
WIRELINE	16,202	84,514	100,913
WIRELESS	39,746	54,147	93,893
TOTAL NUMBERS	55,948	138,661	194,609

APPENDIX H

NUMBER POOLING

310 Pooling Updates (as of August 18, 2000)

1	6	7	8	9	10
Rate Center	**Initial Forecast Blocks by Carriers for 2000 Q3**	**Blocks Assigned by Pooling Adminis-trator for 2000 Q3**	**Initial Blocks Forecasted by Carriers Year -to-Date**	**Blocks Assigned by Pooling Adminis-trator Year -to-Date**	**Blocks Remaining from Carrier-Donation to the 310 pool**
AVALON	1	0	2	1	1
BEVERLY HILLS	26	1	58	7	85
CMTN CMTN	13	1	37	5	32
CMTN GRDN	19	0	42	6	65
CULVER CITY	13	0	35	8	32
EL SEGUNDO	20	0	52	8	38
HAWTHORNE	19	0	41	8	27
INGLEWOOD	17	0	43	8	54
LOMITA	12	1	27	5	18
MALIBU	11	0	28	7	18
REDONDO	18	1	42	7	62
SAN PEDRO	10	0	51	7	35
SNMN MRVS	25	1	79	8	53
SNMN SNMN	32	3	46	10	53
TORRANCE	23	1	51	8	60
W ANGELES	27	2	76	10	53
TOTAL	**286**	**11**	**710**	**113**	**686**

One Block = 1 thousand numbers

415 Pooling Updates (as of August 18, 2000)

1	2	3	4	5	6
Rate Center	**Forecast Blocks by Carriers for 2000 Q3**	**Blocks Assigned by Pooling Adminis-trator for 2000 Q3**	**Initial Blocks Forecast-ed by Carriers Year-to-Date**	**Blocks Assigned by Pooling Adminis-trator Year-to-Date**	**Blocks Remaining from Carrier-Donation to the 415 pool**
BELVEDERE	3	1	3	1	21
CORTEMADRA	6	3	6	3	26
IGNACIO	6	4	6	4	39
IVERNESS	3	0	3	0	27
MILL VALLEY	6	3	6	3	37
NICASIO	3	0	3	0	21
NOVATO	8	5	8	5	32
POINT REYES	3	0	3	0	25
SAN RAFAEL	6	1	6	1	67
SAUSALITO	5	0	5	0	37
SNFC CNTRL	75	0	75	0	110
SNFC JUNIPER	16	1	16	1	76
SNFC MT-EV	21	0	21	0	73
STNSN-BLNS	3	0	3	0	31
TOTAL	**164**	**18**	**164**	**18**	**622**

One Block = 1 thousand numbers

APPENDIX I

SUMMARY OF RECOMMENDATIONS

Recommendation for Prefixes Held by Companies No Longer in Service

? *For the prefixes not yet returned, the CPUC should take action to require the NANPA to reclaim the prefixes.*

Recommendations for Data Submittal

? *The CPUC should direct the NANPA to withhold issuing prefixes to these companies until the required information is submitted. The CPUC should also consider levying fines or other penalties for failure to comply. If these prefixes are not being used for customers, the CPUC should direct the NANPA to reclaim the prefixes as soon as possible.*

Recommendation from Block Contamination Analysis of Wireline Carriers

? *The CPUC should petition the FCC to increase the contamination level for pooling to 25%. If the FCC grants the petition, the CPUC should increase the maximum contamination level of donated blocks from 10% to 25% for all LNP-capable carriers.*

Recommendations from Block Contamination Analysis of Wireless Carriers

? *When cellular and PCS companies become LNP capable in November 2002, the CPUC should direct those wireless carriers to donate to and participate in all number pooling trials in California, using the same contamination threshold for donated blocks in effect for all LNP-capable companies.*

? *The CPUC should solicit comments on the feasibility of paging companies becoming LNP capable and participating in pooling.*

? *If deemed feasible, the CPUC should petition the FCC to rescind the paging companies' indefinite exemption from becoming LNP capable.*

Recommendation for Block Contamination Issues Affecting All Carriers

? *The CPUC should monitor compliance with its fill rate and sequential numbering policies through future number utilization filings and audits.*

? *The CPUC should establish penalties for non-compliance with fill rate and sequential numbering policies adopted in Decision 00-07-052.*[67]

Recommendation for Reclamation of Prefixes

? *An order should be issued requiring the NANPA to notify the CPUC when a prefix in any California area code has not been placed in service during the legally required time period. The order should specify the procedures that the CPUC will follow in directing the NANPA to reclaim unused prefixes, and should require the NANPA to notify the CPUC of the steps the NANPA has taken to reclaim a prefix.*

Recommendations For Treatment of Non-Working Wireless

? *Non-Working wireless numbers should be treated as reserved numbers and limited to 45 days, after which they should be treated as available for assignment to customers.*

? *Companies should be required to maintain and update regularly the inventory records of all equipment assigned non-working wireless numbers along with the number assigned, and to submit such records to the CPUC upon request.*

? *The CPUC should continue to monitor non-working wireless numbers in the near term by reviewing future utilization filings, and should include this category of numbers in any audits conducted of wireless carrier number use.*

Recommendation for INP-Related Conservation Measures

? *The CPUC should require companies to transition from INP to LNP in the 909 area code and implement a monitoring mechanism to ensure compliance.*

? *The CPUC should adopt a schedule for transitioning INP arrangements to LNP in all other California area codes.*

Recommendations for Special-Use Prefixes

? *TD recommends that the CPUC initiate an investigation into the possibility of moving the number for time and emergency preparedness into the 555 prefix.*

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[67] See Chapter 1 for the discussion of Decision 00-07-052.

- ? *TD recommends that the CPUC include in its investigation the broader use of the 555 prefix in California's area codes by providing standard 555 numbers in every California area code to provide time, emergency preparedness, and weather information.*
- ? *TD recommends that the CPUC solicit comments in the Local Competition proceeding (R.95-04-043/I.95-04-044) regarding technical issues that would arise if thousand-blocks from the high volume calling prefixes are reclaimed and placed in the 909 number pool.*
- ? *TD recommends that the CPUC require companies to assign numbers sequentially in special use prefixes. Where the numbers are presently assigned randomly, TD recommends that these numbers be moved and consolidated in one thousand-block in order to free more blocks for number pooling.*

Recommendations for Reserved Numbers

- ? *The CPUC should monitor reserved number use for all companies by reviewing future utilization data to ensure companies are complying with the FCC's 45-day requirement.*
- ? *The CPUC should adopt efficient number use practices specific to companies' reserve number holdings. In developing these practices, the CPUC should investigate various alternatives including, but not limited to, 1) limits on the quantity or percentage of reserved numbers companies can hold, and 2) requirements for using reserved numbers prior to requesting new numbers.*

Recommendations for Administrative Numbers

- ? *The CPUC should develop criteria by which companies assign administrative numbers. The CPUC should consider placing a limit on the quantity or percentage of administrative numbers companies are allowed to hold.*
- ? *The CPUC should develop rules that require companies to limit administrative number assignments within certain blocks in a given prefix. In cases in which companies hold multiple prefixes in a single rate center, the CPUC should develop rules that require companies to limit administrative number assignments within prefixes.*

Recommendations for Intermediate Numbers

- ? *The CPUC should monitor intermediate number use for all companies by reviewing future utilization filings to test whether abuses in this reporting category occur.*

Recommendations for Type 1 numbers

- ? *Wireline and wireless carriers should improve Type 1 number inventory management. Wireline carriers should perform an annual inventory check of wireless Type 1 numbers to confirm that wireless companies are using the numbers allocated to them. Companies should make inventory data available to the CPUC upon request. Wireline companies should reclaim unused numbers within 60 days.*
- ? *Type 1 carriers should be subject to number conservation measures such as sequential numbering and fill rates. A system to ensure compliance with Type 1 number conservation measures should be developed.*
- ? *The CPUC should consider numbers held by Type 1 wireless carriers as candidates for number pooling. Excess and unused Type 1 numbers should be donated to the number pool.*

Recommendation for Aging Numbers

- ? *Although the CPUC has required all companies to differentiate aging numbers between residential and business, and track the two categories separately, Pacific Bell has failed to comply with these requirements. Pacific Bell should be redirected to differentiate aging numbers between business and residential numbers, track them separately, and report on each category accurately . The CPUC should assess penalties for failure to comply.*

Recommendations for Audits

- ? *The CPUC should audit the data submitted by companies in this study and future area code utilization studies.*

Recommendations for Number Pooling

- ? *The CPUC should continue to urge the FCC to adopt a 75% fill rate requirement for pooling nationwide.*
- ? *The CPUC should work with industry groups and the Pooling Administrator to develop specific rules for companies pertaining to forecasting a six-month inventory when a number pool is authorized in a particular area code.*

Recommendations for LNP

- ? *The CPUC should encourage the FCC to resolve the contradiction in the texts ordering LNP capability for all wireline carriers in the top 100 MSAs.*
- ? *As soon as permitted by the FCC, the CPUC should request that non-LNP capable wireline carriers in the 909 area code become LNP capable within the time frame prescribed by the FCC, which in no case may exceed 6 months from the day the CPUC makes the request.*
- ? *In the meantime companies (both inside and outside of the top 100 MSAs) should be encouraged to make requests of one another to become LNP capable.*

Recommendation for UNP

- ? *The CPUC should petition the FCC for authority to implement UNP statewide.*
- ? *The CPUC should solicit comments in order to develop rules and practices necessary to implement UNP.*

Recommendations for Rate Center Consolidation

- ? *The CPUC should undertake further investigation by ordering the telecommunications industry to develop a plan, within 180 days, for rate center consolidation.*

Recommendation for Sharing Prefixes

- ? *The CPUC should further explore sharing prefixes as a means to more efficiently utilize numbers in all California area codes.*