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Legal Department

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August 29, 1997

Mrs. Blanca S. Bayó  
Director, Division of Records and Reporting  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

Re: Docket No. 970158-TP (305 NPA)

Dear Ms. Bayó:

971058-TP (14)

Enclosed is an original and fifteen copies of BellSouth Telecommunication, Inc.'s Direct Testimony of Daniel M. Baeza, which we ask that you file in the captioned matter.

A copy of this letter is enclosed. Please mark it to indicate that the original was filed and return the copy to me. Copies have been served to the parties shown on the attached Certificate of Service.

Sincerely,

*Nancy B. White (pm)*  
Nancy B. White

- ACK \_\_\_\_\_
- AFA \_\_\_\_\_
- APP \_\_\_\_\_
- CCF \_\_\_\_\_
- CMH \_\_\_\_\_
- CT \_\_\_\_\_
- E \_\_\_\_\_
- OT \_\_\_\_\_

Enclosures

cc: All parties of record  
A. M. Lombardo  
5tag R. G. Beatty  
William J. Ellenberg II

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CERTIFICATE OF SERVICE  
DOCKET NO. 971058-TL

I HEREBY CERTIFY that a true and correct copy of the foregoing was served via Hand-Delivery this 29th day of August, 1997 to the following:

Martha Brown  
Legal Counsel  
Florida Public Service  
Commission  
2540 Shumard Oak Blvd.  
Tallahassee, FL 32399-0850

*Nancy B. White*  
Nancy B. White

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BELLSOUTH TELECOMMUNICATIONS, INC.  
DIRECT TESTIMONY OF DANIEL M. BAEZA  
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION  
DOCKET NO. 971058  
AUGUST 29, 1997

Q. Please state your name and business address.

A. My name is Daniel M. Baeza. My business address is 6451 North Federal Highway, Fort Lauderdale, Florida.

Q. By whom are you employed and in what capacity?

A. I am employed by BellSouth as a Director in Infrastructure Planning for the states of Florida, Alabama, Mississippi, and Louisiana.

Q. Please summarize your educational background, work experience, and current responsibilities.

A. I received a bachelor of science degree in electrical engineering in 1974, and a master of science degree in electrical engineering in 1979, both from the University of Miami. Also, I have qualified as a registered professional engineer in the state of Florida. For the past twenty three years, I have been an employee of BellSouth. From 1974 to mid-1979, I held various assignments within the Florida Planning and Engineering

1 Department, including circuit engineering, switch engineering, and  
2 engineering staff. In 1979 I joined the Network Operations Department  
3 as a budget analyst and software developer. I returned to the Network  
4 Planning and Engineering Department in 1982 and managed the  
5 operation of the E911 automatic location identification  
6 system for BellSouth. In 1987, I accepted a rotational assignment with  
7 Bell Communications Research in New Jersey, providing project  
8 management for the development of new operations support systems.  
9 In 1990, I returned to Planning and Engineering in Florida. I presently  
10 hold the position of Director in Infrastructure Planning where I  
11 am responsible for interoffice facility, switching, and fundamental loop  
12 planning as well as other peripheral planning requirements iike NPA  
13 relief.

14

15

16 Q. What is the purpose of your testimony?

17

18 A. The purpose of my testimony is to provide the current status of the 305  
19 area code exhaust and provide a relief option implementation  
20 recommendation in accordance with the consensus reached by the  
21 Telecommunications Industry on June 30, 1997 .

22

23 Q. Under what governance are area codes administered?

24

25

1 A. The North American Numbering Plan (NANP) governs the assignment  
2 and use of telephone numbers in North America. The NANP standards  
3 comport with the International numbering standards established by the  
4 International Telephone and Telegraph Consultative Committee.  
5 These standards provide the accepted format for telephone numbers; a  
6 three digit Numbering Plan Area (NPA), a three digit central office  
7 code (NXX) and a four digit station address code.

8  
9 The NANP is currently administered by Bell Communications  
10 Research, Inc. However, BellSouth, as the predominant local  
11 exchange service provider in South Florida, administers the assignment  
12 of NXX codes within the 305 NPA and monitors code utilization. In that  
13 capacity, BellSouth has determined that the 305 area code will  
14 exhaust in or around September of 1998.

15  
16 Q. The 305 NPA was split only two years ago in September, 1995.  
17 Why is another split necessary so soon?

18  
19 A. Utilization projections indicated, at the time, that the 305 code would  
20 last about five years. By its very nature, a projection is only as good as  
21 the information available at the time the projection is made. The pull-  
22 up of the exhaust date for 305 is attributable to higher than projected  
23 sales of services such as cellular service, pagers, modems for Internet  
24 use and other connectivity, fax machine requirements and additional  
25 business and residential lines. Additionally, the advent of local

1 competition has increased the number of possible Local Exchange  
2 Carriers who then require NXX codes to provide service.

3

4 Q. How is an exhaust determined?

5

6 A. An NPA is considered to be in need of relief when it nears exhaust of  
7 its 792 NXX code assignment capacity. BellSouth, as central office  
8 code administrator for South Florida, continuously monitors the NXX  
9 code utilization and assignment. In the course of those duties, the  
10 number of assigned codes is always known.

11

12 Additionally, BellSouth tracks the rate of code assignment requests.  
13 With these two data elements, total assigned codes and rate of  
14 requests (in use and forecasts of use), a determination can be made of  
15 the forecasted exhaust of all codes, and thus the exhaust of the NPA  
16 code.

17

18 Q. What is the current status of the 305 area code?

19

20 A. The 305 NPA, today, encompasses the area beginning physically at  
21 the north side of the Dade and Broward County lines. The NPA  
22 extends south through Dade County to Monroe County ending at the  
23 southern tip of the Florida Keys. Of the possible 792 codes available  
24 for assignment in the 305 NPA, a majority are in service today.

25

1 Q. Once the forecasted 305 NPA exhaust was determined, what steps did  
2 BellSouth take to form relief plans?

3

4 A. Upon identifying the exhaust of the 305 NPA, BellSouth reviewed the  
5 possible options to provide relief to the NPA. This included formulation  
6 of several illustrative geographic split options to aid in the industry  
7 decision-making process.

8

9 Then, BellSouth notified all known and potential code holders doing  
10 business within the 305 area code and the North American Number  
11 Planning Administration of an industry meeting. The meeting was held  
12 on June 30, 1997 to present the relevant information to the parties and  
13 to reach a consensus on a relief plan.

14

15 Q. What are the available methods for relief of an NPA exhaust?

16

17 A. As defined by the Industry Carriers Compatibility Forum in their NPA  
18 Code Relief Planning and Notification Guidelines, INC97-0404-016  
19 dated April 4, 1997, Exhibit DMB1, the primary alternatives for NPA  
20 relief are:

21 - NPA geographic split

22 - NPA overlay

23

24 Q. Will you briefly describe these alternatives?

25

1 A. Yes. The NPA geographic split method consists of dividing the  
2 exhausting NPA into geographic areas. This method leaves  
3 the existing NPA to serve, for example, the area with the highest  
4 customer density, thus minimizing number changes, and assigns the  
5 new NPA to the remaining area. The division can be made on  
6 jurisdictional, natural, or physical boundaries such as counties, cities, or  
7 rivers. This method has been the alternative chosen for nearly all NPA  
8 relief requirements occurring before 1995. The technical aspects of  
9 this method have been resolved and implementation procedures are  
10 well understood.

11

12 The overlay method occurs when more than one NPA serves the same  
13 geographical area. In this situation, code relief is provided by  
14 opening a new NPA within the same physical area as the NPA  
15 requiring relief. Numbers from the new NPA are assigned to new  
16 growth on a carrier neutral basis, i.e., first come, first served. While  
17 mandatory number changes are usually eliminated within the overlay  
18 relief area, changes to customer dialing patterns will occur. This  
19 method necessitates ten digit dialing of local calls between and  
20 within NPAs.

21

22 Q. What were the results of the June 30, 1997, industry meeting  
23 concerning the method for 305 NPA relief?

24

25



1 A. During the Industry Meeting held on June 30, 1997, several relief  
2 options were discussed. Those options are identified as follows:

3

4

5 Geographic Split Options:

6 A number of geographic split options could be constructed. BellSouth  
7 presented several illustrative geographic split options to the industry.  
8 These split options provided various combinations of exchanges and  
9 geography and different NPA exhaust dates. None of the split options  
10 could divide the NPA by jurisdictional, natural or physical boundaries as  
11 outlined in the NPA Code Relief Guidelines and still provide an  
12 equitable ratio between those who had to change their NPA and those  
13 who would retain their NPA. Instead, division along exchange  
14 boundaries offered the better alignment. All options had in common  
15 two factors:

- 16 1. Approximately half of existing subscribers would be required to  
17 change their NPA.  
18 2. The Miami local calling area had to be split in every case, requiring  
19 ten digit local dialing between the 305 area code and the new code.

20

21 Exhibit DMB2 provides a synopsis of each split option developed.

22

23 Overlay Options:

24

25

1 This option consists of overlaying the 305 area code with a new code.  
2 With the institution of an overlay, no existing subscriber would be  
3 required to change their NPA. Dialing parity throughout the area  
4 would be maintained by requiring all customers to dial ten digits both  
5 between and within area codes. This dialing plan, in and of itself,  
6 removes local dialing as a competitive issue for NPA relief.  
7 Additionally, local number portability will have been available  
8 some months prior to the advent of the overlay area code.  
9 Under this option, the expected life of the new area code is forecasted  
10 to be approximately 12 years (including the use of the remaining 305  
11 NXXs).

12

13 No additional relief options were offered by the industry.

14

15 Q. What decision did the industry reach upon consideration of these  
16 options?

17

18 A. The industry reached consensus on using the overlay option. The  
19 overlay option provided :

- 20 - The most cost effective arrangement in that customer  
21 number changes would not be required and the associated  
22 expense associated with number changes would not be  
23 incurred.  
24 - The most consistent and least confusing dialing arrangement  
25 since ten digit dialing would be required for the entire area.

1 - Maintenance of dialing parity with the institution of ten digit  
2 dialing.

3

4 Q. Why did the industry reject the various geographic split options?

5

6 A. The geographic options were rejected as undesirable because:

7 - A large number of customers (approximately 50%) would have  
8 to change their telephone number and incur the cost associated  
9 with that change.

10 - No definable boundary could be identified for any of the  
11 splits.

12 - Any split would divide Dade County and the city of Miami  
13 requiring ten digit dialing within the city and county and the  
14 resultant confusion associated with that situation.

15

16 Q. Even though no existing telephone numbers will be required to change  
17 with the overlay method, will there be instances in which customers  
18 have to accept telephone lines with a different area code when adding  
19 to their existing home or business service?

20

21 A. Yes, it is possible that situations could occur where a customer would  
22 be asked to accept additional service with a different area code.

23 BellSouth plans to design its number assignment systems to assign  
24 additional telephone numbers based on customer's existing area  
25 code, wherever possible, in an effort to assign telephone numbers in

1 the same area code in which their existing service is assigned.  
2 However, much will depend on the code utilization within particular  
3 central offices and the demand for additional numbers.  
4  
5 Q. Is it possible that businesses or neighbors next door or across the  
6 street from each other could have different area codes if the overlay  
7 method is used?  
8  
9 A. Yes, it is very possible. The overlay method of area code relief assigns  
10 a new area code to the same geographic area as the exhausting  
11 area code. Therefore, when all the old codes have been used, future  
12 assignments will be in the new area code. This will always result in  
13 the new assignments being adjacent to someone with the old code.  
14  
15 Q. When should the NPA relief be implemented?  
16  
17 A. The 305 NPA relief option selected by the industry should be  
18 implemented as soon as possible so that the very critical process of  
19 customer education can begin in order to support mandatory ten digit  
20 local dialing and the assignment of the new overlay NPA code.  
21  
22 Ten digit permissive dialing should begin January 1, 1998. Mandatory  
23 ten digit dialing will begin with the effective date of the new overlay  
24 code on July 1, 1998.  
25

1 Q. Does this conclude your testimony?

2

3 A. Yes, it does.

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# INC

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## NPA Code Relief Planning and Notification Guidelines

SPONSORED BY ATIS  
THE ALLIANCE FOR  
TELECOMMUNICATIONS  
INDUSTRY SOLUTIONS

These guidelines are issued in resolution  
to INC Issue #074.

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**1.0 Purpose** - The purpose of this document is to provide guidelines for NPA code relief planning activities. This includes the relief planning process, industry notification process and the CO Code Administrators' responsibilities to the NPA Relief Coordinators, affected parties and applicable regulatory authorities within the North American Numbering Plan area. It also provides relief planning principles, administrative responsibilities and industry notification requirements. The steps of the NPA code relief planning process are listed and the alternative methods of providing relief and their various attributes are described.

**2.0 Assumptions and Constraints** - The development of these guidelines include the following assumptions and constraints:

2.1 These guidelines were intended to apply to geographic NPA relief planning only.

2.2 These guidelines were developed to facilitate and help standardize the geographic NPA relief planning process.

2.3 Relief activities will be undertaken to provide relief to an exhausting NPA. For the purpose of NPA relief planning, it is assumed that the capacity of an NPA is 792 CO codes (NXXs). However, in overlay NPA situations, the CO code exhaust capacity will be the number of NPA codes assigned to that geographic area times 792.

2.4 The relief plan chosen will seek to minimize end users' confusion while balancing the cost of implementation by all affected parties.

2.5 For each relief activity proposed in the plan, it is recommended that customers who undergo number changes shall not be required to change again for a period of 8-10 years.

2.6 All efforts should be made to choose a plan that does not favor a particular interest group, i.e., no carrier should receive a distinct competitive advantage over other carriers as a result of reaching a consensus on a particular plan.

2.7 It is assumed that the CO Code Administrator organization will provide the moderator for all relief planning meetings and that moderator will run meetings in a fair and impartial manner ensuring that all participants have any opportunity to express their opinions.



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2.8 These relief planning guidelines were developed without making any assumption as to who will fill the role of CO Code Administrator or NANP Administrator.

2.9 CO codes and NPA codes are public resources and administrative assignment of these codes does not imply ownership of the resource by the entity performing the administrative function, nor does it imply ownership by the entity to which the resource is assigned.

2.10 The appropriate regulatory commission (e.g., state, province, country) has the ultimate authority to approve or reject a relief plan.

2.11 In the United States, geographic NPA code boundaries do not currently extend across state lines.

2.12 Once there is a consensus/approved relief plan, all codes holders in the exhausting NPA will take the appropriate steps to facilitate the implementation of the plan.

2.13 These guidelines and all related documents/guidelines\* referenced herein will be made available to all affected parties by the Relief Coordinator upon request.

**3.0 NPA Relief Planning Principles** - The following principles should be followed during NPA Code Relief Planning:

3.1 The NPA Code Relief Coordinator should facilitate the selection of a consensus NPA code relief alternative based upon input as outlined in Section 5 below.

3.2 Communications should be established with all affected industry members, appropriate regulatory bodies and the North American Numbering Plan Administration (NANPA). This should be initiated immediately after the need for NPA Code relief has been determined.

**4. CO Code Administrators Responsibilities for Code Relief Planning** - This section identifies required code relief planning functions that are related to the CO code (NXX) assignment functions as specified in these guidelines. These functions are

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\* INC95-0407-008, Central Office Code Assignment Guidelines, ICCF 94-0726-004, Recommended Notification Procedures to Industry for Changes in Access Network Architecture.

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identified because they are currently performed in conjunction with code assignment. An objective of this function is to promote effective and efficient code utilization and thereby help ensure the adequate supply of CO codes (NXXs).

The Code Administrator(s) shall be required to provide assistance in the code relief planning process when and if necessary. The output of the planning process shall be made available to code holders, applicants and the industry by whatever means is appropriate.

Relief planning functions included in this section are as follows:

4.1 Tracks CO code (NXX) assignments within NPAs to ensure effective and efficient utilization of numbering resources.

4.2 Works with the Code Administrator(s) to prepare the annual CO Code Utilization Survey (COCUS) input as described in Sections 5.2.8 and 8.1 of the CO Assignment Guidelines and forwards the information to NANPA. This function includes the following activities:

4.2.1 Issues requests for, collects and compiles available information related to CO code (NXX) utilization and relief planning forecasts.

4.2.2 Investigates and resolves, wherever possible, any discrepancies in the information provided.

4.2.3 Any information released to NANPA or to the industry would be released only on an aggregated or summary basis. (See Section 8.1 of the CO Assignment Guidelines)

4.3 Projects CO code (NXX) exhaust within NPAs in order to prepare for NPA relief activity.

4.4 Develops plans for NPA relief and initiates implementation efforts, in both normal and jeopardy situations (Refer to Section 8.3 of the CO Assignment Guidelines). When the need for code relief is identified and relief activity is initiated, advises all parties affected by NPA relief activities and includes them in the planning effort.

- 
- 4.5 Collects, compiles and forwards the necessary information to NANPA for the purpose of obtaining an NPA assignment when it is determined that a new NPA code is required to accommodate relief.
- 4.6 Obtain endorsement of NPA relief plan from appropriate regulatory authority(ies), where necessary.
- 4.7 Develops dialing plan alternatives within local jurisdictions.
- 4.8 Provides assistance to users of numbering resources and suggests alternatives, when possible, that will optimize numbering resource utilization.
- 4.9 Prepares and issues information related to reports for special information requests and scheduled periodic reports that relate to utilization of numbering resources.
- 5.0 NPA Relief Planning Process** - NPA relief coordinators shall take the lead to prepare relief options for each NPA projected to exhaust within the next 5 to 10 years, in accordance with Section 3.0 above. These NPAs are identified in the Central Office Code Utilization Survey (COCUS) which is conducted annually by NANPA.
- a) The relief options shall cover a period of at least five years beyond the predicted date of exhaust, and shall cover more than one relief activity, if necessary, during the time frame.
  - b) The relief options shall be a living document and reflect changes that take place over time such as demand for NXX codes or other factors (e.g., local competition, PCS, etc.). The annual COCUS analysis shall be used as one of the tools in updating the options.
  - c) The relief plan, which will evolve from these relief options, shall be prepared in accordance with appropriate industry guidelines, i.e., NPA Allocation Plan and Assignment Guidelines, NPA Code Relief Planning Guidelines, etc.
  - d) Interested industry parties are encouraged to become involved in the development of the plan. Local regulators shall be made aware of the plan and approve, if necessary.

---

e) The choice of relief methods (e.g., split, overlay, boundary realignment) is a local decision and shall be specified in the plan, along with boundaries if a split is chosen. The estimated relief period shall be included in the plan along with assumptions, projected code assignment rates, etc.

f) For each relief activity proposed in the plan, it is recommended that customers who undergo number changes shall not be required to change again for a period of 8-10 years.

g) The use of protected codes (NXXs), which permit 7-digit dialing across NPA boundaries, should be eliminated or reduced to an absolute minimum as part of the NPA code relief planning process. Reduction or elimination of protected codes should be accomplished prior to a request for a relief NPA code.

h) In the long term, the plan shall result in the most effective use possible of all codes serving a given area. Ideally, all of the codes in a given area shall exhaust about the same time in the case of splits. In practice, this may not be possible, but severe imbalances, for example, a difference in NPA lifetimes of more than 15 years, shall be avoided.

Requests for relief NPA codes shall be submitted to NANPA at least 18 months prior to the NPA relief date subject to local regulatory constraints. Normally, only one code will be assigned per request unless the codes are to be introduced simultaneously or unless implementation concerns dictate a phased-in implementation of subsequent NPA(s) within two years of the relief date of the preceding relief code. The latest version of the plan, along with relevant COCUS data, shall be submitted to NANPA with the NPA request.

---

**5.1 Determine the Expected NPA Exhaust Period** - Through the use of historical growth data as well as expected changes to NXX growth demands in the future, the Relief Coordinator should project to the best of his/her ability the expected exhaust of the NPA. The Central Office Code Utilization Survey (COCUS) should be used as an aid in this projection. Consideration may be given to unforeseen but reasonable increases and/or decreases to expected growth rates which would result in an exhaust "window" rather than a specific exhaust date. Once the earliest likely exhaust date is determined, the Coordinator should establish a mandatory dialing date six to twelve months prior to that date, giving consideration to items such as busy seasons, customer service order activity, customer equipment and number changes, and any other concerns which would increase the probability for service problems during the transition period.

**5.2 Identify the Alternative Relief Methods Available** - Within the affected NPA, the Relief Coordinator should next identify possible NPA relief alternatives and methods from among those identified in Section 6. This may include one or more NPA Split alternatives, at least one Overlay alternative, and, where applicable, one or more NPA Boundary Realignment alternatives. Combinations of these alternatives may also be considered.

**5.3 Define the Attributes of Each Alternative or Method** - For each of the alternative relief methods identified in 5.2, the Coordinator should next list and quantify the impacts, using Appendix A of this document, in order to determine the advantages and disadvantages of the alternatives. Specific calculations such as the relative lengths of the relief periods, identify the impacts of dialing local calls using 7-digits or 10-digits on an industry segment basis, and the number of subscribers requiring number changes should be made at this point. Technical and operational impacts should also be identified including items such as required switch replacements and support system modifications.

**5.4 Notify Industry of Pending NPA Exhaust and Results of Initial Relief Planning** - The next step in the recommended Relief Planning Process is to incorporate the results of the steps outlined in 5.1 through 5.3 into an initial Planning Document for distribution to the Industry in the affected NPA. Attached to this Document should be a letter notifying Industry members of future meeting schedules to be held for the purpose of discussing the alternative relief methods, with the objective of reaching consensus on the method to be adopted. The Relief Coordinators should also make available copies of this document, as well as other relevant documents\*. Sufficient time should be

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\* INC95-0407-008, Central Office Code Assignment Guidelines, ICCF 94-0726-004, Recommended Notification Procedures to Industry for Changes in Access Network Architecture.



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provided prior to the meetings to allow individual industry members to fully analyze the alternatives from the perspectives of affects on their customers, economics and technological and operational impacts.

**5.5 Conduct Industry Meetings with the Goal of Reaching Industry Consensus on a Relief Plan** - Meetings and/or conference calls should be held with all interested members of the Industry within the affected NPA after each has had sufficient time to analyze the proposed alternative relief methods. The Relief Coordinator should provide a Moderator at these meetings or conference calls and be fully prepared to answer questions regarding the alternatives. During the meetings/conference calls, new alternatives may be proposed and should be included in these discussions. Initially, separate meetings for the various industry segments may be held to increase efficiency and manageability. Inasmuch as the objective of these meetings is to reach industry consensus, subsequent joint meetings will be required.

In addition to discussing the alternatives, more detailed issues such as new NPA boundaries, local calling areas, regulatory issues, customer education, and the length of any necessary permissive dialing periods should be discussed.

All meetings and/or conference calls should be fully documented in meeting minutes which are to be made available to the participants prior to the subsequent meeting or call. Copies of meeting minutes may also be forwarded to the appropriate regulatory body as well as to the North American Numbering Plan Administrator.

**5.6 Notify Appropriate Regulatory Body** - When consensus is reached within the industry or when it appears that additional meetings would not achieve consensus, the NPA Relief Coordinator should submit to the appropriate regulatory body (or bodies) the results of the industry effort. If consensus was not obtained, the NPA Relief Coordinator may ask the regulatory body for assistance in reaching a solution. If regulatory assistance is required to adopt a "final plan", the NPA Relief Coordinator should prepare a "final recommendation" for circulation and then submit the "final plan" plus comments, if any, provided by industry participants to the appropriate regulatory body. Regulatory activities will vary by state. The Relief Coordinator should be prepared to furnish to the regulators any background information deemed necessary including the original studies, meeting minutes, mailing lists, etc. The NPA Relief Coordinator should prepare a "final recommendation" for circulation and comment by industry participants. The NPA Relief

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Coordinator should then submit the "final plan" plus comments, if any, provided by industry participants, to the appropriate regulatory body.

**5.7 Notify the North American Numbering Plan Administration (NANPA)** - When the final NPA Relief Plan has been determined, and at least 18 months prior to the NPA Relief date, the Relief Coordinator should formally notify NANPA of the pending NPA exhaust, request formal assignment of a new NPA, and submit sufficient background information to justify the assignment of a code. Normally this would include the exhaust and relief projects discussed in 5.1 and 5.3, a description of the relief method to be utilized and the relief schedule. In those situations where a final plan has not yet been developed prior to the 18-month requirement, the Planner should forward whatever information is available at that time, together with a statement that the final relief method has not yet been determined.

**5.8 Public Statements/Press Releases** - Public statements released prior to the first industry NPA relief planning meeting should, to the extent available, contain:

- factual information about the impending exhaust of the NPA
- that the telecommunications industry in the exhausting NPA will meet (time/place) to begin planning for the relief
- and that questions concerning the relief effort may be directed to the NPA Relief Coordinator (name/tel. no.)

The relief alternatives described in Section 6 may be identified as the range of possible alternatives, however, preference regarding specific relief alternatives should not be discussed.

During the relief planning process, public statements are not encouraged. However, some states may require input from the public to the planning process. If questions are directed to the Relief Coordinator, or if reaction to a press article is warranted, responses should, to the extent possible, be limited to factual information (as opposed to opinion or preference) concerning relief options being considered and to agreements reached by the industry planning committee. Upon reaching consensus on a relief plan, a press release developed with industry input may be issued to inform the public of the industry approved plan for relief of the exhausting NPA.

If there is no industry consensus for a relief plan, the NPA Relief Coordinator may advise the public of that fact and that a final recommendation, along with written comments from

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industry participants have been submitted to the appropriate regulatory authority for its final disposition. Upon regulatory approval of a relief plan, the NPA Relief Coordinator will advise the public of the details of the plan. This does not preclude NANPA from issuing its standard ILs in accordance with industry guidelines for such notice (see ICCF 92-1127-006).

**5.9 Public Announcement of the Relief** - A minimum of 12 months advance notice of an NPA split/overlay should be provided by the NPA Relief Coordinator. This notice should include a full disclosure of the associated testing period, permissive dialing time, ANI and records conversion dates and the beginning date for mandatory dialing of the new NPA (See time line Appendix C). Also included should be a test number for routing verification and the date it will become available. Other information that may be incorporated with this notification includes a map indicating new NPA boundaries, new dialing procedures (if any) and a contact name and telephone number.

In addition to any other public announcements, the North American Numbering Plan Administration (NANPA) will provide 12 months advance notice to the industry via a Bellcore Information Letter. In order to do so, they must receive the required information from the NPA Relief Coordinator at least one month before the 12 month notice is to be published. The NXXs associated with the NPA relief will not be published with the NANP letter, but will continue to be published in the Local Exchange Routing Guide (LERG) at least six months in advance (to be coordinated with the quarterly issue).

Prior to the 12 month notification period, NPA Relief Coordinators are encouraged to begin informal discussions with the impacted access purchasers and other entities to provide whatever information may be available at the time regarding an NPA split/overlay. It is recognized that planning for an NPA split involving other carriers (e.g., cellular, independents and others as appropriate) may begin earlier than this information notification.

The NPA Relief Coordinator may choose to provide a formal public notification of the planned NPA relief prior to the 12 month notice with full disclosure. To the extent that such notification is made, the NPA Relief Coordinator should inform the NANP of the announcement. Upon receipt of the information, the NANPA will issue a Bellcore Information Letter describing the proposed relief. It is recognized that this letter will typically not contain all the information to be provided with the 12 month (full disclosure) letter, but will simply alert the industry (areas served by the NANP) of the upcoming event.



**6.0 Alternative Relief Methods** - All of the currently identified code relief alternatives are described below. Possible impacts of these alternatives are found in Appendix B.

**6.1 NPA Split Method** - By this method, the exhausting NPA is split into two geographic areas leaving the existing NPA code to serve, for example, an area with the highest customer density (in order to minimize number changes) and assigning a new NPA code to the remaining area. This method divides areas by jurisdictional, natural or physical boundaries (counties, boroughs, cities, river, etc.) between the old and new NPAs.

This method has been the alternative chosen for practically all NPA relief situations prior to 1995. NPA splits have occurred with enough frequency so that technical aspects have been addressed and established implementation procedures are generally understood. Public education and acceptance of the process has been made easier because of the numerous NPA splits that have occurred. This method generally provides long term relief for an area.

**6.2 Boundary Realignment Method** - In an NPA boundary realignment, the NPA requiring relief is adjacent to an NPA, within the same state or province, which has spare NXX code capacity. A boundary shift occurs so that spare codes in the adjacent NPA can be used in the NPA requiring relief. As a result, the geographic area of the exhausting NPA shrinks and the geographic area of the NPA with spare capacity expands. Only the customers in the geographic area between the old and new boundaries are directly affected by this change. This method applies to multi-NPA states or provinces only. It could provide for a better balance of central office (NXX) code utilization in the affected NPAs. This method is viewed as an interim measure because it tends to provide a shorter term relief than when providing a new NPA code.

**6.3 Overlay Method** - An NPA overlay occurs when more than one NPA code serves the same geographic area. In an NPA overlay, code relief is provided by opening up a new NPA code within the same geographic area as the NPA(s) requiring relief. Numbers from this new NPA are assigned to new growth on a carrier neutral basis, i.e., first come, first served. Mandatory customer number changes within the affected overlay relief area are eliminated. In most cases, with the overlay relief method, 10 digit dialing is required for some of the affected customers' calling patterns. Since the overlay relief method could result in unequal dialing for those customers served out of the overlay NPA,

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mandatory 10 digit dialing is recommended for all NPAs covered by the NPA coincident with the implementation of an overlay.

The overlay method reduces or eliminates the need for customer number changes like those required under the split and realignment methods. It also allows the option to eliminate the permissive dialing period as part of implementation. This method will necessitate ten digit dialing of local calls between the old and new NPAs as central office (NXX) codes are implemented in the new NPA. NPAs have been previously implemented within an area and will vary with the individual characteristics of the area involved. Four potential implementation strategies have been identified for an NPA overlay. They are listed below:

**6.3.1 Distributed Overlay** - The distributed overlay strategy may be considered in situations when growth in telephone numbers is expected to be more or less evenly distributed throughout the existing NPA requiring relief. The new NPA is added to the NPA requiring relief and shares exactly the same geographic boundaries. When growth telephone numbers are required, they are assigned from the new NPA.

**6.3.2 Concentrated Growth Overlay** - A concentrated growth overlay may be considered in situations when the majority of the new telephone numbers are expected to be concentrated in one section of the existing NPA. For example, a fast growing metropolitan area and a sparsely populated rural area could exist within the same NPA. The overlay NPA would be assigned initially to the section of the NPA experiencing the fastest growth, and new phone numbers in that section would be assigned from the new NPA. As more relief is required, the geographic area served by multiple NPAs could expand.

**6.3.3 Boundary Extension Overlay** - With a boundary extension overlay, the NPA requiring relief is adjacent to an NPA with spare capacity. The boundary between these two NPAs is eliminated, and spare NXX codes from the adjacent NPA are assigned within the original NPA boundary where relief is required. An appropriate use of boundary extension might be in a state or province consisting of two NPAs, where one NPA has spare capacity. This solution has the advantage of not requiring a new NPA code, but it also shares some of the limitation of boundary realignment in that it provides less long term relief.

**6.3.4 Multiple Overlay** - The multiple overlay strategy may be considered where relief is required in two or more NPAs. For example, this solution may be appropriate in a

metropolitan area where two or more NPAs cover a small geographic area and where it would be difficult to implement another kind of relief, i.e., a split or a distributed overlay. The new NPA would be assigned to overlay the multiple existing NPAs serving the entire metropolitan area. As another example, a new NPA could be assigned for new growth within an entire state or province where more than one NPA exists.

**6.4 Other** - A combination of the methods described above may be used. For example, a concentrated growth overlay could be assigned initially to a section of an NPA experiencing fast growth, and as more relief is required, the section served by two NPAs could expand into a distributed or multiple overlay as demand requires. Other combination of relief methods may be appropriate. Each NPA requiring relief must be analyzed on the basis of its own unique characteristics with regard to demographics, geography, regulatory climate, technological considerations and community needs and requirements.

**7.0 Other Relief Planning Considerations** - This section describes miscellaneous considerations which should be included during the NPA relief planning process. It is not possible to identify every potential issue which may arise when planning relief for specific NPAs; each state or province, each metropolitan area and each industry segment will have unique characteristics which could introduce concerns not included here. The following items are examples of issues which, based on past industry experiences, could create impediments to a successful and efficient implementation effort.

**7.1 Organization Considerations** - To the maximum extent possible, NPA relief planning should include considerations of organizational continuity. This includes not only the Administrator's own organization or entity, but continuity within the industry as well. The chances for successful implementation of relief efforts are greatly enhanced if there is smooth transition from the planning phase and continued involvement with the industry team as implementation progresses. Thorough documentation and dissemination of information throughout the planning process will assist in ensuring the desired continuity in the event personnel and/or organizational changes disrupt the transition.

**7.2 Regulatory Issues** - Involvement of the State Regulatory Staff during NPA code relief planning may expedite the process of addressing public policy concerns throughout the process.

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**7.3 Timing and Schedules** - Issues related to timing and scheduling will vary with the type of relief method to be implemented as well as the level of difficulty of the required changes. In any case, the relief effort should be planned to be completed at least three months before the existing NPA would exhaust under the highest growth projections.

NPA splits require the establishment of a permissive dialing period during which calls placed to the area to be served by the new NPA can be completed whether the new or the existing NPA code is dialed by the caller. During this time, changes are made to business telephone systems, wireless devices, alarm system networks and individual subscribers' custom calling feature lists. In addition, ANI information and billing/ordering systems may be modified to handle the new NPA code. Central office codes may not be duplicated in the old and new NPAs during this time.

The length of the permissive dialing period may vary depending on the amount of time required to accomplish the above activities. Permissive dialing periods are as short as four months or as long as two years have historically been used. A decision regarding the length of the permissive dialing period, if required, must be a part of the overall Plan. When establishing transition schedules, consideration should also be given to avoiding the need to make network changes during the busiest times of the year, from the perspectives of call volumes, customer movement and holidays. Other scheduling concerns include the length and type of customer education efforts, the length of time required for network changes and overall budget considerations.

**7.4 Customer Calling Patterns** - Existing and planned local calling areas should be considered during the planning process and retained, wherever practical, along with their existing or planned dialing arrangements. This may prevent regulatory policy delays during implementation and/or unexpected changes to the final plan.

**7.5 Interest Group Considerations** - It is difficult if not impossible during NPA relief efforts to avoid negative impacts on some customers within the NPA. Whichever alternative relief method is chosen, it is highly possible that one or more customer groups may attempt to influence the decision in a manner which is most favorable to them. Extreme care must be taken by the NPA Relief Coordinator to ensure that fair and equitable treatment is given to all subscribers within an area.

**8.0 Updating the RDBS, LASS and BRIDS** - At least six months prior to the NPA relief date, the NPA Relief Coordinator should make arrangements for Bellcore's Traffic Routing Administration (TRA) to update the Routing Database System (RDBS), LIDB



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Access Support System (LASS) and Bellcore Rating Input Database System (BRIDS)\*\* . Notification to the industry should appear six months prior to the NPA relief date in the Local Exchange Routing Guide (LERG), which is used for message and call setup routing. Ninety days prior to the NPA relief date, the updates should appear in BRADS output products such as the NPA/NXX V&H coordinates diskette and tape. Prior to the NPA relief date, the updates should be reflected in the LIDB Access Routing Guide (LARG), which is used for Alternate Billing Service (ABS) query routing.

**9.0 Routing to the New NPA Code** - A test number providing an announcement that calls have reached a termination in the new NPA should be made available 4 to 6 weeks prior to the official NPA relief date and remain available throughout the entire permissive dialing period. The test number will enable all carriers and other entities to do the necessary testing to insure that the proper routing changes have been made to direct calls to the new NPA beginning on the relief date. Such changes should be made prior to the relief date, rather than after the relief date during the permissive dialing period. If customers cannot dial the new NPA code during the permissive period because some carriers were unable to complete the necessary effort on the relief date, the usefulness of the permissive dialing period is negated.

**10.0 The Permissive Dialing Period** - The relief date signals the start of the permissive dialing period. The permissive dialing period should precede mandatory dialing of the new NPA code. To reach a telephone in the new NPA during this time, the customer may dial either the existing NPA code and the 7 digit number or the new NPA code and the same 7 digit number.

The length of the permissive dialing period is determined by the NPA Relief Coordinator. This period should allow sufficient time for customers to:

- revise printed materials (e.g., stationery, business cards, labels, bills, etc.)
- reprogram equipment that stores and analyses telephone numbers (e.g., PBXs, cellular phones, modems, speed call lists, automatic dialers)
- update directory listings
- notify customers and business associates

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\*\* A recommended checklist of additional activities concerning the exchange of data/information that should be undertaken by NPA Relief Coordinators to assist in the smooth implementation of any NPA relief are found in Appendix A.

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- change advertising (e.g., print ads, classified ads, promotional materials, etc.)

**11.0 ANI and Records Conversion** - ANI and records conversion should begin on or after the start of permissive dialing. ANI conversions are performed on a central office-by-central office basis and usually takes place over two or three months. It is recognized that the tasks of ANI and records conversion are complex and interdependent and that these efforts must be coordinated. Moreover, it is further recognized that records conversion can occur either before or after ANI conversion. Accordingly, for each NPA split/overlay, the time of the records conversion, whether it occurs before or after ANI conversion, will be coordinated by the NPA Relief Coordinator.

ANI conversions should not take place prior to permissive dialing in order to avoid potential problems with CLASS services.

**12.0 Mandatory Dialing** - The end of the permissive dialing period is the date that mandatory dialing of the new NPA code begins. All calls to both the old and new NPA codes must be dialed with the correct NPA. All misdialed calls will be intercepted by a recording and an instructional announcement will be provided.

Once the date for mandatory dialing has been established, any change which would advance that date should be made known to all parties no later than 30 days prior to the new date.

**13.0 Maintenance of These Guidelines** - These guidelines were developed by the NPA Code Relief Workshop of the Industry Numbering Committee (INC). Any recommended changes or modifications to these guidelines should be directed to the Industry Numbering Committee.

#### **14.0 Glossary**

**ANI CONVERSION** - The process by which the NPA portion of the calling party's automatic number identification (ANI) from end offices located in the new NPA changes from the old NPA to the new NPA.

**COCUS** - Central Office Code Utilization Survey (COCUS) is conducted annually by NANPA from direct input received from Central Office Code Administrator(s) in order to monitor central office code utilization, projected exhaust of NPAs and demand for new NPAs to provide code relief. The purpose of COCUS is to provide an annual overall view

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of both present and projected CO code (NNX/NXX) utilization for each NPA in the NANP.

**Code Administrator** – Entity(ies) responsible for the administration of the NXXs within an NPA.

**Code Holder** – The entity to whom a CO code (NNX/NXX) has been assigned for use at a Switching Entity or Point of Interconnection it owns or controls.

**Conservation** – Consideration given to the efficient and effective use of a finite numbering resource in order to minimize the cost and need to expand its availability, while at the same time allowing the maximum flexibility in the introduction of new services, capabilities and features.

**Consensus** – Consensus is established when substantial agreement has been reached among interest groups participating in the consideration of the subject at hand. Interest groups are those materially affected by the outcome of the result. Substantial agreement means more than a simple majority, but not necessarily unanimity.

**Jeopardy NPA** – A jeopardy condition exists when the forecasted and/or actual demand for NXX resources will exceed the known supply during the planning/implementation interval for relief. Accordingly, pending exhaust of NXX resources within an NPA does not represent a jeopardy condition if NPA relief has been or can be planned and the additional NXXs associated with the NPA will satisfy the need for new NXX codes.

**Mandatory Dialing Date** – The date where permissive dialing ends and the new NPA must be dialed to complete the call.

**Moderator** – An employee of the CO Code Administrator's organization which presides over NPA Code Relief coordination meetings. Responsibilities usually include issuing the meeting announcement, coordinating meeting arrangements, leading the meeting, issuing meeting minutes and other duties as necessary to conduct the meeting.

**NANP** – The North American Numbering Plan is a numbering architecture in which every station in the areas served by the NANP is identified by a unique ten-digit address consisting of a three digit NPA code, a three digit central office code of the form NNX/NXX, and a four digit line number of the form XXXX, where N represents the digits 2-9 and X represents any digit 0-9.

**NANPA** – North American Numbering Plan Administration. With divestiture, key responsibilities for coordination and administration of the North American Numbering/Dialing Plans were assigned to NANPA. These central administration functions are exercised in an impartial manner toward all industry segments while balancing the utilization of a limited resource.

**NPA** – Numbering Plan Area, also called an area code. An NPA is the three digit code that occupies the A, B and C positions in the ten digit NANP format that applies throughout the areas served by the NANP. NPAs are of the form N0/1X, where N represents the digits 2-9 and X represents any digit 0-9. After 1/1/95, NPAs will be of the form NXX. In the NANP, NPAs are classified as either geographic or non-geographic.

A. Geographic NPAs are NPAs which correspond to discrete geographic areas served by the NANP.

B. Non-geographic NPAs are NPAs that do not correspond to discrete geographic areas, but which are instead assigned for services with attributes, functionalities or requirements that transcend specific geographic boundaries. The common examples are NPAs in the N00 format, e.g. 800.

**NPA Code Relief** – NPA code relief refers to an activity that must be performed when an NPA nears exhaust of its 640 NNX or the 792 NXX capacity. Relief is typically provided to an NPA about a year before its capacity is reached. NPA code relief for an NPA that is nearing the 640 NNX limit is usually provided in the form of implementing interchangeable central office code (ICOC) which provides an additional 152 assignable central office codes. An NPA that has been implemented as ICOC has a capacity of 792 assignable NXX central office codes. Providing code relief to such an NPA normally takes the form of assigning a new NPA for an NPA split or overlay. Another option is changing the boundary of the existing NPA.

**NPA Relief Coordinator** – The organization responsible for the overall coordination of the NPA relief activity.

**NPA Relief Date** – The date by which the NPA is introduced and routing of normal commercial traffic begins.



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**Permissive Dialing Period** - The time frame beginning with the introduction of the new NPA whereby both the old and new NPA can be dialed. The beginning of permissive dialing is coincident with the relief date and ends with the mandatory dialing date.

**Premature Exhaust** - (When referring to NANP): Premature exhaust means the exhaust of NANP resources (i.e., requires expansion beyond the 10 digit format) much sooner than the best industry projections. The NANP is expected to meet the numbering needs of the telecommunications industry well into the 21st century (i.e., a minimum of 25 years). (When referring to NPA): Premature exhaust is when a specific date for NPA relief has been established and the NPA is projected to exhaust prior to that date.

**Records Conversion** - The process by which all appropriate records are converted to the new NPA. All documents that require an area code must indicate the new NPA when appropriate (e.g., access service request).

**Relief Options** - The relief options shall cover a period of at least five years beyond the predicted date of exhaust and shall cover more than one relief activity, if necessary, during the time frame. The relief options shall be a living, evolving document and shall reflect changes that take place over time such as demand for NXX codes or other factors (e.g., local competition, PCS, etc.) The annual COCUS analysis shall be used as one of the tools in updating the options.

**Relief Plan** - The relief plan will evolve from the relief options shall be prepared in accordance with appropriate industry guidelines, i.e., NPA Allocation Plan and Assignment Guidelines, NPA Code Relief Planning Guidelines, etc.

**Service Providers** - Any entity that is authorized, as appropriate, by local governmental, state, federal or governmental authorities covering areas served by the NANP to provide communications services to the public.

**Testing Period** - Time frame prior to permissive dialing that the new NPA will be open so that carrier and other entities can begin testing their networks.

**Working Telephone** - The quantity of telephone numbers within existing CO codes.

**Numbers (Tns)** - (NNX/NXX) which are assigned to working subscriber access lines or their equivalents, e.g., direct inward dialing trunks, paging numbers, special services, temporary local directory numbers (TLDNs), etc., within a switching entity/POI.

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Appendix A

**Checklist for NPA Code Relief Coordinator**

The following are specific activities concerning the exchange of data/information that can be undertaken by NPA Relief Coordinators to assist in the smooth implementation of any NPA relief.

1. Avoid last minute changes to data e.g., information contained in the RDBS (the source of the LERG) and BRIDS (the source of Vertical & Horizontal Master Data) that is directly related to NPA relief activity.
2. Provide a list of LEC companies in a given NPA that are impacted by the NPA relief activity and, if known, a contact within each company.
3. Specifically identify and convey any changes in trunking arrangements associated with NPA relief activities.
4. Avoid NXX activation and/or changes occurring simultaneously with an NPA split or other relief activity.
- If new NXXs must be activated, separately identify these codes to access purchasers as well as providing this information via the LERG.
5. Avoid Carrier ownership changes simultaneously with an NPA split or other relief activity.
6. Avoid duplicating NXX codes in the old and new NPAs during the permissive dialing period as well as on the mandatory dialing date.
7. NPA Relief Coordinators should include the Bellcore Traffic Routing Administration (TRA) on their distribution of NXX information associated with an NPA split or other relief activity.
8. The NPA Relief Coordinator will be the point of contact for matters concerning the NPA split or other relief activity. In addition, Bellcore TRA will also be a point of contact to resolve discrepancies between NPA relief information shown in the

RDBS and BRIDS products versus that provided by a given NPA Relief Coordinator.

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Appendix B

### **Issues To Be Considered During NPA Relief Planning**

Following are a list of issues to be considered by the NPA Relief Coordinator to determine the advantages of the proposed relief alternatives.

#### **Subscribers**

- quantity of subscribers who will need number changes
- impact on CPE, e.g., reprogramming of wireless devices, automatic dialers, alarm systems, PBXs, etc.
- public reaction to and political involvement in boundary decisions
- impact on market identity/recognition, geographic identity, public familiarity
- public costs (stationary, business cards, customer premise equipment (CPE) and database reprogramming.

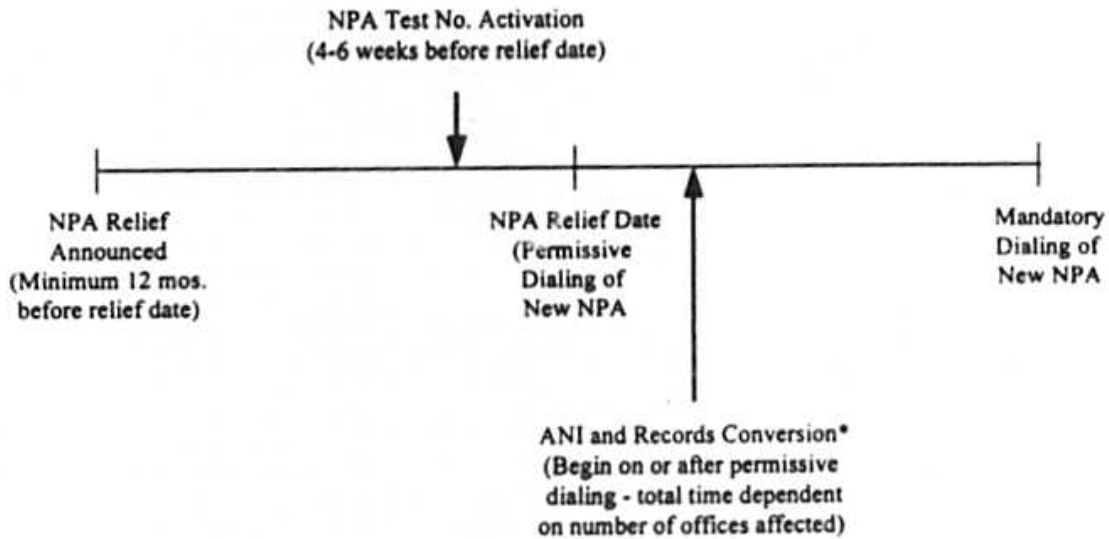
#### **Network and Service Providers**

- hardware and software upgrades to switching systems
- modification to or replacement of some operating supporting systems
- modification to operator services switches and/or systems
- directory assistance impacts
- 911 system impacts
- directory changes
- public notification/education requirements
- changes to existing network routing and translations
- impact of permissive dialing period
- length of planning period
- impact on dialing plan
- experience with relief method/implementation procedure
- interaction with appropriate regulatory bodies
- tariff impacts
- internal networks

#### **Industry Concerns**

- length of relief period
- NPA code utilization

## Industry Notification of NPA Relief Activity Timeline



\* Records conversion may occur before or after ANI conversion

Option ID	Resource	Forecasted Exhaust Date NEW	Forecasted Exhaust Date 200	Notes	Forecasted Lb NEW	Forecasted Lb 200	Existing NCL in NEW	Existing NCL in 200	Percent of Growth in NEW	Percent of Growth in 200	Existing NCL in NEW	Existing NCL in 200	Conclusion
MPA_9	Steam Exchange and North Dade	7/28	5/01	An attempt was made to keep North Dade and Steam extra spots in the 200 MPA. This results in 200 being left with too many existing NCLs and too much projected growth.	41.31	4.00	62	522	0.227	0.772	1294725	211,000	has a wide option
MPA_8	Steam Exchange	8/20	6/04	North Dade is put in the NEW MPA. The Steam exchange stays in 200 but it will have the proportionate of existing NCLs and growth. Steam exchange must be split.	22.31	7.40	208	218	0.318	0.682	888888	305,000	has a wide option
MPA_5	Central Coast	8/26	12/14	This option stays only the eastern portion of the Steam exchange in 200. It does not include enough of the existing NCLs in 200. The western border does not follow any physical natural or physical boundaries.	9.47	17.74	315	266	0.629	0.371	608,283	772,220	Decrease most of the NCLs in NEW as compared to 200 and NEW would be reversed. This does not split evenly enough.
MPA_6	Overseas	10/28	1/11	This option is similar to the Central Coast one. It would be included to even the split and include more of the business along SR820 (Palmetto Exp). There are still no natural or physical boundaries. NEW is broken into two pieces.	11.56	13.79	277	307	0.56	0.44	764,623	708,122	To separate conclusion spots that are not contiguous are assumed to be not contiguous.
MPA_1	North Coast	10/28	1/15	This split option excludes all the coastal area current. Florida can not be included or it would include the NEW MPA. Once again there is no physical or natural boundary available.	9.50	17.81	300	279	0.638	0.362	662,684	777,931	NAL are in NEW as analyzed. 200 and NEW would be reversed. This does not split evenly enough.
MPA_3	Northwest 1	12/07	12/12	This split option has no obvious boundary and does not exclude enough growth in 200.	10.67	19.79	296	309	0.633	0.367	700,000	764,622	A resource split but no geographic or jurisdictional reference.
MPA_7	North Dade and Coast	7/10	8/28	This split option keeps North Dade exchange in 200 along with the eastern portion of the Steam exchange. Once again there is no physical or natural boundary available.	13.33	11.45	164	400	0.58	0.42	809,791	600,754	A resource split but no geographic or jurisdictional reference.
MPA_2	Duquoin 1	1/28	1/17	SR820 (The Duquoin Expressway) provides a segment of physical split of Duquoin County. SR820 does not exactly follow sewerage boundaries or extend all the way east to west.	10.84	15.65	239	340	0.640	0.364	643,814	820,001	Because most NALs are in NEW as analyzed, 200 and NEW would be reversed. This split every enough.
MPA_4	Duquoin 2	2/29	10/10	The addition of Steam Dade listed to "Duquoin 1" evenly distributes the growth and existing NCLs.	11.89	13.51	229	305	0.589	0.401	667,807	772,708	NAL are in NEW as analyzed. 200 and NEW would be reversed. This does not split evenly enough.
MPA_18	Duquoin 3	5/29	2-7-0	The addition of Steam Dade to "Duquoin 2" provides for a somewhat understandable split along with equal expected flows.	12.16	13.11	217	367	0.569	0.401	719,196	751,419	Almost 50% split of NAL. Either north or south could keep 200. That could keep 200. That
MPA_14	Northwest 2	12/28	7/28	Add Airport, Flagler and Bayfront to Northwest 1. There is no understandable boundary.	12.72	12.28	188	265	0.6033	0.3967	787,883	662,722	A good split but no geographic or jurisdictional reference.
MPA_12	Duquoin 4	7/15	5/20	Add Central to Duquoin 3. This now makes the split uneven. Central is too big.	18.32	8.17	172	412	0.4308	0.5691	773,204	665,411	has an even split
MPA_11	Overly of 200	10/29	10/29	Expected the includes use of remaining 200 NCLs.	12.54		0	544	1		888888		