

## **October 2016 North American Numbering Plan (NANP) Exhaust Analysis**

### **Introduction**

NANPA projects the exhaust of the NANP based upon the utilization and forecast data submitted by service providers via the NRUF process. The following assumptions were used in this exhaust analysis.

### **October 2016 NANP Exhaust Projection Assumptions**

The following is a list of assumptions used in the development of the October 2016 NANP exhaust projection prepared by NANPA. These are the same assumptions used in previous NANP exhaust studies.

1. The NANP exhaust study uses as its basis the CO code demand, which includes service provider and Pooling Administrator forecasts, historical CO code assignments and other NPA-specific information, calculated for each respective NPA. The monthly CO code demand as calculated in the NPA exhaust analysis is straight-lined to determine demand outside the five-year time frame included in NRUF submissions.
2. For NPAs in rationing, NANPA compared the actual CO code demand over the past year(s) with the rationed amount. In addition, NANPA compared the forecasted CO code demand provided by service providers and/or the Pooling Administrator to the rationed amount. Based upon this analysis, NANPA identified an average annual CO code demand rate for the NPA.
3. A new NPA will be required when the number of assigned and unavailable CO codes reaches 800.
4. It is assumed that each new NPA will require the same number of unassignable codes as the current NPA. It appears that most of the unassignable codes in the existing NPAs are duplicated in the new NPA. There may be times, however, when additional codes in the new NPA are marked unassignable.
5. No assumptions were made with regard to the relief method implemented (i.e., NPA split vs. overlay). However, it was assumed that the selected relief method did not require the duplication or protection of central office codes other than those identified in number 4 above.
6. The CO code demand for an exhausting NPA will be continued after NPA relief. By doing so, the demand for both the existing and new NPAs will be taken into account for the geographic area covered by the original NPA.
7. The total quantity of available NPA codes will be 667 NPAs. This figure is derived as follows: 800 NPAs less NPAs reserved for NANP expansion (80), N11 codes (8), 555 and 950 NPAs (2), toll-free NPAs (9)<sup>1</sup> and non-geographic NPAs (31)<sup>2</sup>.

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<sup>1</sup> NPAs 880, 881, 882, 883, 884, 885, 886, 887 and 889.

<sup>2</sup> These include the 26 codes reserved for non-geographic services (521, 523, 524, 525, 526, 527, 528, 529, 532, 538, 542, 543, 545, 547, 549, 552, 553, 554, 556, 569, 578, 589, 550, 535, 546 and 558) and 5 of the codes reserved for Canada (633, 644, 655, 677 and 688).

8. To account for the variability of demand, a sensitivity analysis was performed to the CO code demand (i.e., demand will be increased and decreased by increments of 10%) to understand the impact on NANP exhaust.

### **Results based on Assumptions**

As recognized in previous NANP exhaust analyses, the model is sensitive to the yearly CO code demand rate. Using the monthly CO code demand for each U.S. NPA as calculated in the October 2016 NPA Exhaust Analysis, and straight-lining this demand beyond the five-year time frame included in NRUF submissions, creates an average yearly demand rate of 4,200 CO codes. This yearly demand rate was compared with U.S. CO code demand rates in 2006 through 2016.

<b>Year</b>	<b>Annual Gross CO Code Demand</b>	<b>Annual Net CO Code Demand</b>
2006	4,100	3,400
2007	3,200	2,900
2008	2,900	2,200
2009	2,100	1,600
2010	2,800	2,500
2011	2,900	2,400
2012	2,600	2,100
2013	2,700	2,400
2014	3,400	3,200
2015	3,700	3,500
2016 (est.)	3,700	3,500

To project the exhaust of the NANP, an average annual demand of 5,400 CO codes was used. This demand factors in the forecast data submitted as part of the August 2016 NRUF process and the demand in non-US NANP member area codes.<sup>3</sup>

### Model Based on Projected Demand

Using an average CO code demand rate of 5,400 codes assigned per year, the projected NANP exhaust date is beyond 2046, assuming the quantity of NPAs available remains 667<sup>4</sup>.

### **Sensitivity Analysis**

For comparison purposes, NANPA performed a sensitivity analysis using an average annual demand to 6,500 CO codes, a 20% increase in the base model demand. This analysis also resulted in a projected exhaust beyond 2046.

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<sup>3</sup> NANPA included an annual forecast of 1,200 CO codes for non-US NANP member countries.

<sup>4</sup> The base model used in the April 2016 study used an average demand rate of 5,200 codes and projected an exhaust date beyond 2045.