

# April 2019 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.

## April 2019 NANP Exhaust Projection Assumptions

The following is a list of assumptions used in the development of the April 2019 NANP exhaust projection prepared by NANPA.

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 using statistical analyses similar to the analysis NANPA uses to forecast the exhaust of NPAs, i.e., SP forecasts and historical CO code assignment data.
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 672 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 (29)<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 25 codes reserved for non-geographic services (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 April 2019 NPA Exhaust Analysis and the CO code demand included in NRUF submissions, an average yearly demand rate of 2,890 CO codes was calculated. This yearly demand rate was compared with U.S. CO code demand rates in 2014 through 2019.

<b>Year</b>	<b>Annual Gross CO Code Demand</b>	<b>Annual Net CO Code Demand</b>
2014	3,400	3,200
2015	3,700	3,500
2016	3,500	3,300
2017	2,700	2,500
2018	2,800	2,500
2019	2,890	2,550

To project the exhaust of the NANP, an average annual demand of 3,990 CO codes was used. This demand factors in the forecast data submitted as part of the February 2019 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 3,990 codes assigned per year, the projected NANP exhaust date is beyond 2049, assuming the quantity of NPAs available remains 672<sup>4</sup>.

### **Sensitivity Analysis**

For comparison purposes, NANPA performed a sensitivity analysis using an average annual demand to 4,780 CO codes, a 20% increase in the base model demand. This analysis also resulted in a projected exhaust beyond 2049.

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<sup>3</sup> NANPA included an annual forecast of 1,100 CO codes for non-US NANP member countries.

<sup>4</sup> The base model used in the April 2019 study used an average demand rate of 3,990 codes and projected an exhaust date beyond 2049.