October 2021 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 2021 NANP Exhaust Projection Assumptions

The following is a list of assumptions used in the development of the October 2021 NANP exhaust projection prepared by NANPA.

1. The NANP exhaust study uses as its basis the CO code demand, which includes service provider and thousands-block pooling 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 thousands-block pooling forecasts 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 CO 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 assignable NPAs is 679 NPAs. This figure is derived as follows: 800 NPAs less 121 unavailable NPAs: 80 (NANP expansion), 8 (N11 codes), 2 (555 and 950), 20 (37X and 96X), 9 (880 – 887 and 889), 1 (456 which will be made available in 2022) and 1 (988).

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 October 2021 NPA Exhaust Analysis and the CO code demand included in NRUF submissions, an average yearly demand rate of 4,721 CO codes was calculated. This yearly demand rate was compared with U.S. CO code demand rates in 2016 through 2021.

Year	Annual Gross CO Code Demand	Annual Net CO Code Demand
2016	3,500	3,300
2017	2,700	2,500
2018	2,800	2,500
2019	2,926	2,650
2020	4,030	3,346
2021	4,966	4,835

To project the exhaust of the NANP, an average annual demand of 4,966 CO codes was used. This demand factors in the forecast data submitted as part of the August 2021 NRUF process and the demand in non-US NANP member area codes.[1]

Model Based on Projected Demand

Using an average CO code demand rate of 4,721 codes assigned per year, the projected NANP exhaust date is 2063, assuming the quantity of NPAs assignable remains 679.

Sensitivity Analysis

For comparison purposes, NANPA performed a sensitivity analysis using an average annual demand to 5,959 CO codes, a 20% increase in the base model demand. This analysis resulted in a projected exhaust of 2056.

[1] NANPA included an annual forecast of 935 CO codes for non-US NANP member countries.