

**January 2018 R-NRUF Report – NPA 236/250/604/778, NPA 289/365/905,  
NPA 403/587/780/825, NPA 418/581, NPA 450/579, NPA 506 and NPA 709 to the  
Canadian Steering Committee on Numbering (CSCN)**

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## 1. Purpose of R-NRUF

In accordance with the *Canadian Numbering Resource Utilization Forecast (C-NRUF) Guideline* (the Guideline), approved by the Canadian Radio-television and Telecommunications Commission (CRTC) in Telecom Decision CRTC 2015-166 dated 29 April 2015:

When an NPA is entering the timeframe for NPA Relief Planning (e.g., within or about 72 months before the Projected Exhaust Date), an initial R-NRUF is conducted to obtain actual and forecast annual data at the Exchange Area level of detail. The purpose of the initial R-NRUF is to validate the Projected Exhaust Date for an exhausting NPA, and to provide the CNA with detailed information to be used to identify a potential Relief Date and to prepare the Initial Planning Document as outlined in the Canadian NPA Relief Planning Guideline. Typically, the initial R-NRUF will utilize Format 2 in Appendix A. In general, the CNA will conduct the initial R-NRUF when needed; however, the CNA should attempt to choose dates for the initial and subsequent R-NRUFs that will coincide with the annual G-NRUF and mid-year R/S-NRUF dates (e.g., as of January 1 and July 1 each year).

Subsequent R-NRUFs will be conducted semi-annually in order to monitor CO Code forecast changes prior to implementing relief. These R-NRUFs shall be conducted until three months of when relief is implemented, or until they are replaced by S-NRUFs or J-NRUFs.

Based on the January 2017 G-NRUF results, the CNA determined that in addition to NPA 236/250/604/778 and NPA 506, NPA 204/431, NPA 289/365/905, NPA 306/639, NPA 403/587/780/825, NPA 450/579 and NPA 819/873 were also within the 6-year window for NPA relief planning.

Section 7.19 of the Canadian NPA Relief Planning Guideline details the circumstances under which a Jeopardy Condition will be suspended or declared. It states in part:

If the PED advances to be within or is deferred beyond the timeframes specified in the Jeopardy Condition section of this Guideline, then the CNA shall, respectively, declare or suspend a Jeopardy Condition, and implement or end Jeopardy Contingency Plan procedures ...

The CNA published the July 2017 J-NRUF results for NPAs 418/581 and 709 on 5 September 2017. The results showed that the PEDs for these NPAs had been

deferred. Therefore, in accordance with Section 7.19 of the Guideline, the Jeopardy Conditions in NPA 418/581 and NPA 709 were suspended. The J-NRUFs for NPA 418/581 and NPA 709 have since been replaced with R-NRUFs.

During CSCN 109, while reviewing the January 2018 NRUF documents, the CSCN decided that the CNA would only conduct G-NRUFs for NPAs 204/431, 306/639 and 819/873. Therefore, on 15 December 2017 the CNA requested January 2018 R-NRUFs from current and prospective Canadian CO Code Holders in the NPA complexes for 236/250/604/778, 289/365/905, 403/587/780/825, 418/581, and 450/579, as well as NPA 506 and NPA 709.

## 2. High Level Summary

The results from the January 2018 R-NRUF are quite different from the July 2017 R-NRUF and J-NRUF results due to various Telecommunications Service Providers (TSPs) submitting updated data. The CNA has verified the input from various TSPs and the variance from previous inputs can be rationalized.

Specific changes are listed below:

| <b>NPA</b>      | <b>PED from July 2017 NRUF</b> | <b>PED from January 2018 R-NRUF</b> | <b>Change in PED</b> |
|-----------------|--------------------------------|-------------------------------------|----------------------|
| 236/250/604/778 | May 2020                       | July 2020                           | Delayed 2 months     |
| 289/365/905     | May 2023                       | November 2022                       | Advanced 6 months    |
| 403/587/780/825 | January 2023                   | September 2022                      | Advanced 4 months    |
| 418/581         | January 2020                   | October 2019                        | Advanced 3 months    |
| 450/579         | August 2023                    | June 2021                           | Advanced 26 months   |
| 506             | November 2024                  | December 2021                       | Advanced 35 months   |
| 709             | May 2023                       | April 2023                          | Advanced 1 month     |

**NPA 236/250/604/778**

| <b>NPA 236/250/604/778 - January 2018 R-NRUF Aggregate Results</b> |   |                   |                   |                   |                   |                   |
|--|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Actual</b>  | <b>Forecast</b>   |                   |                   |                   |                   |                   |
| Total quantity of existing CO Codes assigned & reserved as of      | Total quantity of existing and future CO Codes forecast to be assigned & reserved as of |                   |                   |                   |                   |                   |
| <b>2018-01-01</b>  | <b>2019-01-01</b>   | <b>2020-01-01</b> | <b>2021-01-01</b> | <b>2022-01-01</b> | <b>2023-01-01</b> | <b>2024-01-01</b> |
| 2772   | 2991  | 3135              | 3267              | 3371              | 3476              | 3551              |
| <b>Projected Exhaust Date - July 2020</b>                          |   |                   |                   |                   |                   |                   |

NRUF data, including the most recent results, is summarized in the following chart.

| <b>NPA 236/250/604/778 Summary of Projected Exhaust Dates</b> |                       |                            |                               |
|---|-----------------------|----------------------------|-------------------------------|
| <b>NPA</b>  | <b>Type of C-NRUF</b> | <b>Date of Publication</b> | <b>Projected Exhaust Date</b> |
| 236/250/604/778   | January 2015 G-NRUF   | 27 March 2015              | February 2024                 |
| 236/250/604/778   | January 2016 G-NRUF   | 21 March 2016              | April 2021                    |
| 236/250/604/778   | July 2016 R-NRUF      | 12 October 2016            | February 2021                 |
| 236/250/604/778   | January 2017 R-NRUF   | 29 March 2017              | May 2020                      |
| 236/250/604/778   | July 2017 R-NRUF      | 25 September 2017          | May 2020                      |
| 236/250/604/778   | January 2018 R-NRUF   | 20 March 2018*             | July 2020                     |

\* Results finalized during 20 March 2018 conference call

**NPA 289/365/905**

| <b>NPA 289/365/905 - January 2018 R-NRUF Aggregate Results</b> |   |                   |                   |                   |                   |                   |
|--|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Actual</b>  | <b>Forecast</b>   |                   |                   |                   |                   |                   |
| Total quantity of existing CO Codes assigned & reserved as of  | Total quantity of existing and future CO Codes forecast to be assigned & reserved as of |                   |                   |                   |                   |                   |
| <b>2018-01-01</b>  | <b>2019-01-01</b>   | <b>2020-01-01</b> | <b>2021-01-01</b> | <b>2022-01-01</b> | <b>2023-01-01</b> | <b>2024-01-01</b> |
| 1833   | 1945  | 2143              | 2235              | 2328              | 2442              | 2495              |
| <b>Projected Exhaust Date - November 2022</b>                  |   |                   |                   |                   |                   |                   |

NRUF data, including the most recent results, is summarized in the following chart.

| <b>NPA 289/365/905 Summary of Projected Exhaust Dates</b> |                       |                            |                               |
|---|-----------------------|----------------------------|-------------------------------|
| <b>NPA</b>  | <b>Type of C-NRUF</b> | <b>Date of Publication</b> | <b>Projected Exhaust Date</b> |
| 289/365/905   | January 2017 G-NRUF   | 29 March 2017              | September 2023                |
| 289/365/905   | July 2017 R-NRUF      | 25 September 2017          | May 2023                      |
| 289/365/905   | January 2018 R-NRUF   | 20 March 2018*             | November 2022                 |

\* Results finalized during 20 March 2018 conference call

**NPA 403/587/780/825**

| <b>NPA 403/587/780/825 - January 2018 R-NRUF Aggregate Results</b> |   |                   |                   |                   |                   |                   |
|--|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Actual</b>  | <b>Forecast</b>   |                   |                   |                   |                   |                   |
| Total quantity of existing CO Codes assigned & reserved as of      | Total quantity of existing and future CO Codes forecast to be assigned & reserved as of |                   |                   |                   |                   |                   |
| <b>2018-01-01</b>  | <b>2019-01-01</b>   | <b>2020-01-01</b> | <b>2021-01-01</b> | <b>2022-01-01</b> | <b>2023-01-01</b> | <b>2024-01-01</b> |
| 2541   | 2846  | 2934              | 3024              | 3120              | 3267              | 3345              |
| <b>Projected Exhaust Date - September 2022</b>                     |   |                   |                   |                   |                   |                   |

NRUF data, including the most recent results, is summarized in the following chart.

| <b>NPA 403/587/780/825 Summary of Projected Exhaust Dates</b> |                       |                            |                               |
|---|-----------------------|----------------------------|-------------------------------|
| <b>NPA</b>  | <b>Type of C-NRUF</b> | <b>Date of Publication</b> | <b>Projected Exhaust Date</b> |
| 403/587/780/825   | January 2017 G-NRUF   | 29 March 2017              | March 2022                    |
| 403/587/780/825   | July 2017 R-NRUF      | 25 September 2017          | January 2023                  |
| 403/587/780/825   | January 2018 R-NRUF   | 20 March 2018*             | September 2022                |

\* Results finalized during 20 March 2018 conference call

**NPA 418/581**

| <b>NPA 418/581 - January 2018 R-NRUF Aggregate Results</b>    |   |                   |                   |                   |                   |                   |
|---|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Actual</b>   | <b>Forecast</b>   |                   |                   |                   |                   |                   |
| Total quantity of existing CO Codes assigned & reserved as of | Total quantity of existing and future CO Codes forecast to be assigned & reserved as of |                   |                   |                   |                   |                   |
| <b>2018-01-01</b>   | <b>2019-01-01</b>   | <b>2020-01-01</b> | <b>2021-01-01</b> | <b>2022-01-01</b> | <b>2023-01-01</b> | <b>2024-01-01</b> |
| <b>1312</b>   | <b>1547</b>   | <b>1646</b>       | <b>1694</b>       | <b>1738</b>       | <b>1763</b>       | <b>1786</b>       |
| <b>Projected Exhaust Date - October 2019</b>                  |   |                   |                   |                   |                   |                   |

NRUF data, including the most recent results, is summarized in the following chart.

| <b>NPA 418/581 Summary of Projected Exhaust Dates</b> |                       |                            |                               |
|---|-----------------------|----------------------------|-------------------------------|
| <b>NPA</b>  | <b>Type of C-NRUF</b> | <b>Date of Publication</b> | <b>Projected Exhaust Date</b> |
| 418/581   | January 2015 G-NRUF   | 27 March 2015              | November 2023                 |
| 418/581   | January 2016 G-NRUF   | 21 March 2016              | April 2019                    |
| 418/581   | April 2016 S-NRUF     | 15 May 2016                | March 2019                    |
| 418/581   | July 2016 J-NRUF      | 2 September 2016           | March 2019                    |
| 418/581   | October 2016 J-NRUF   | 5 December 2016            | March 2019                    |
| 418/581   | January 2017 J-NRUF   | 29 March 2017              | September 2020                |
| 418/581   | April 2017 J-NRUF     | 2 June 2017                | September 2020                |
| 418/581   | July 2017 J-NRUF      | 5 September 2017           | January 2020                  |
| 418/581   | January 2018 R-NRUF   | 20 March 2018*             | October 2019                  |

\* Results finalized during 20 March 2018 conference call

**NPA 450/579**

| <b>NPA 450/579 - January 2018 R-NRUF Aggregate Results</b>    |   |                   |                   |                   |                   |                   |
|---|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Actual</b>   | <b>Forecast</b>   |                   |                   |                   |                   |                   |
| Total quantity of existing CO Codes assigned & reserved as of | Total quantity of existing and future CO Codes forecast to be assigned & reserved as of |                   |                   |                   |                   |                   |
| <b>2018-01-01</b>   | <b>2019-01-01</b>   | <b>2020-01-01</b> | <b>2021-01-01</b> | <b>2022-01-01</b> | <b>2023-01-01</b> | <b>2024-01-01</b> |
| 1153  | 1315  | 1496              | 1563              | 1680              | 1734              | 1764              |
| <b>Projected Exhaust Date - June 2021</b>                     |   |                   |                   |                   |                   |                   |

NRUF data, including the most recent results, is summarized in the following chart.

| <b>NPA 450/579 Summary of Projected Exhaust Dates</b> |                       |                            |                               |
|---|-----------------------|----------------------------|-------------------------------|
| <b>NPA</b>  | <b>Type of C-NRUF</b> | <b>Date of Publication</b> | <b>Projected Exhaust Date</b> |
| 450/579   | January 2017 G-NRUF   | 29 March 2017              | June 2022                     |
| 450/579   | July 2017 R-NRUF      | 25 September 2017          | August 2023                   |
| 450-579   | January 2018 R-NRUF   | 20 March 2018*             | June 2021                     |

\* Results finalized during 20 March 2018 conference call



**NPA 506**

| <b>NPA 506 - January 2018 R-NRUF Aggregate Results</b>        |   |                   |                   |                   |                   |                   |
|---|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Actual</b>   | <b>Forecast</b>   |                   |                   |                   |                   |                   |
| Total quantity of existing CO Codes assigned & reserved as of | Total quantity of existing and future CO Codes forecast to be assigned & reserved as of |                   |                   |                   |                   |                   |
| <b>2018-01-01</b>   | <b>2019-01-01</b>   | <b>2020-01-01</b> | <b>2021-01-01</b> | <b>2022-01-01</b> | <b>2023-01-01</b> | <b>2024-01-01</b> |
| 575   | 694   | 737               | 765               | 826               | 853               | 868               |
| <b>Projected Exhaust Date - December 2021</b>                 |   |                   |                   |                   |                   |                   |

NRUF data, including the most recent results, is summarized in the following chart.

| <b>NPA 506 Summary of Projected Exhaust Dates</b> |                       |                            |                               |
|---|-----------------------|----------------------------|-------------------------------|
| <b>NPA</b>  | <b>Type of C-NRUF</b> | <b>Date of Publication</b> | <b>Projected Exhaust Date</b> |
| 506   | January 2015 G-NRUF   | 27 March 2015              | April 2025                    |
| 506   | January 2016 G-NRUF   | 21 March 2016              | February 2021                 |
| 506   | July 2016 R-NRUF      | 12 October 2016            | May 2020                      |
| 506   | January 2017 R-NRUF   | 29 March 2017              | December 2021                 |
| 506   | July 2017 R-NRUF      | 8 September 2017           | November 2024                 |
| 506   | January 2018 R-NRUF   | 20 March 2018*             | December 2021                 |

\* Results finalized during 20 March 2018 conference call

**NPA 709**

| <b>NPA 709 - January 2018 R-NRUF Aggregate Results</b>        |   |                   |                   |                   |                   |                   |
|---|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Actual</b>   | <b>Forecast</b>   |                   |                   |                   |                   |                   |
| Total quantity of existing CO Codes assigned & reserved as of | Total quantity of existing and future CO Codes forecast to be assigned & reserved as of |                   |                   |                   |                   |                   |
| <b>2018-01-01</b>   | <b>2019-01-01</b>   | <b>2020-01-01</b> | <b>2021-01-01</b> | <b>2022-01-01</b> | <b>2023-01-01</b> | <b>2024-01-01</b> |
| 573   | 674   | 728               | 769               | 786               | 797               | 835               |
| <b>Projected Exhaust Date - April 2023</b>                    |   |                   |                   |                   |                   |                   |

NRUF data, including the most recent results, is summarized in the following chart.

| <b>NPA 709 Summary of Projected Exhaust Dates</b> |                       |                            |                               |
|---|-----------------------|----------------------------|-------------------------------|
| <b>NPA</b>  | <b>Type of C-NRUF</b> | <b>Date of Publication</b> | <b>Projected Exhaust Date</b> |
| 709   | January 2015 G-NRUF   | 27 March 2015              | August 2024                   |
| 709   | January 2016 G-NRUF   | 21 March 2016              | May 2019                      |
| 709   | April 2016 J-NRUF     | 15 May 2016                | March 2019                    |
| 709   | July 2016 J-NRUF      | 2 September 2016           | March 2019                    |
| 709   | October 2016 J-NRUF   | 5 December 2016            | March 2019                    |
| 709   | January 2017 J-NRUF   | 29 March 2017              | August 2019                   |
| 709   | April 2017 J-NRUF     | 2 June 2017                | August 2019                   |
| 709   | July 2017 J-NRUF      | 5 September 2017           | May 2023                      |
| 709   | January 2018 R-NRUF   | 20 March 2018*             | April 2023                    |

### 3. Schedule of Future R- NRUF Activities in this Calendar Year

| Due Date       | NRUF Type | NRUF Format | NPA             |
|----------------|-----------|-------------|-----------------|
| August 7, 2018 | R-NRUF    | Format 2    | 236/250/604/778 |
|                |           |             | 289/365/905     |
|                |           |             | 306/639         |
|                |           |             | 343/613         |
|                |           |             | 403/587/780/825 |
|                |           |             | 418/581         |
|                |           |             | 450/579         |
|                |           |             | 506             |
|                |           |             | 709             |

### 4. R-NRUF Assumptions

The assumptions used for the January 2018 R-NRUF for NPAs 236/250/604/778, 289/365/905, 403/587/780/825, 418/581, 450/579, 506 and 709 are the assumptions that were provided on 1 November 2017 to the CNA by the Canadian Steering Committee on Numbering (CSCN) for conducting the January 2018 NRUF.

Item 4 of the 1 November 2017 letter states, in part:

Where the CNA believes, based on its analysis of past growth and NRUF forecast data for an NPA, that the six-year forecast average annual growth may not be the best methodology for that NPA for projecting growth beyond the six-year forecast period, the CNA shall seek guidance from CRTC staff and will advise the CSCN of the alternative method used.

In this instance, the CNA compared the average forecast growth for the next five years, the median forecast growth for the next five years and the median and average historical growth for the past five years. The lowest number resulting from these calculations was the one used to identify the PED for NPAs 236/250/604/778, 289/365/905, 403/587/780/825, 418/581, 450/579, 506 and 709 as per following chart.

| <u>NPA</u>      | <u>Future PED Method</u>        |
|-----------------|---------------------------------|
| 236/250/604/778 | Use Five Year Median of Growth  |
| 289/365/905     | Use Historical Average          |
| 403/587/780/825 | Use Five Year Median of Growth  |
| 418/581         | Use Five Year Average of Growth |
| 450/579         | Use Historical Average          |

| <b>NPA</b> | <b>Future PED Method</b> |
|------------|--------------------------|
| 506        | Use Historical Average   |
| 709        | Use Historical Average   |

## 5. Summary of Challenges Encountered During the R-NRUF Process

The CNA sent an e-mail reminder on 11 January 2018 and started contacting individual companies during the last full week of January to remind them of the 1 February 2018 due date. Nevertheless, some R-NRUF submissions were a few days late. Two companies were repeatedly reminded up to 8 February 2018.

## 6. Conclusion

In accordance with Section 4 of the Canadian Numbering Resource Utilization Forecast (C-NRUF) Guideline, the CNA has conducted an assessment, at a total aggregate level, to determine whether the January 2018 R-NRUF results are reasonable.

Numbering resource requirements for some Carriers in both the wireless and LEC services have been volatile over the last few years resulting in only moderately accurate short term and long term NRUF submissions. The CNA has endeavoured to mitigate this volatility by distinguishing companies that are establishing a footprint in an NPA from those that already have one.

The CNA believes that emerging technology growth has been responsible for a good part of the demand. It is assumed that the introduction of the *Canadian Non-Geographic Code Assignment Guideline*, will alleviate some of the issues associated with Machine-to-Machine demand but it is difficult to quantify. Some TSPs are applying for non-geographic codes.

At this time, based on the data and supporting justifications provided by the various TSPs, the January 2018 R-NRUF results for NPA complexes 236/250/604/778, 289/365/905, 403/587/780/825, 418/581, 450/579, and NPAs 506 and 709 are as realistic as they can be.