July 2019 R-NRUF Report – NPA 249/705, NPA 289/365/905, NPA306/639, NPA 343/613, NPA 403/587/780/825, NPA 416/437/647, NPA 438/514, NPA 450/579, NPA 506, NPA 709 and NPA 819/873 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 2019 G-NRUF results, the CNA determined that, in addition to NPA 289/365/905, NPA 306/639, NPA 343/613, NPA 403/587/780/825, NPA 450/579, NPA 506, and 709, additional NPAs (249/705, 416/437/647, 438/514, and 819/873) had also entered the 6-year window for relief planning.

2. High Level Summary

The results from the July 2019 R-NRUF are quite different from the January 2019 R-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:

NPA	PED from January 2019 G- or R-NRUF	PED from July 2019 R-NRUF*	Change in PED
249/705	July 2025	March 2026	Delayed 8 months
289/365/905	June 2022	December 2022	Delayed 6 months
306/639	May 2022	November 2021	Advanced 6 months
343/613	December 2023	September 2025	Delayed 21 months
403/587/780/825	June 2022	February 2022	Advanced 4 months
416/437/647	January 2024	June 2025	Delayed 18 months
438/514	October 2023	June 2024	Delayed 8 months
450/579	June 2024	June 2024	No Change
506	August 2022	April 2023	Delayed 8 months
709	August 2023	October 2023	Delayed 2 months
819/873	October 2025	March 2025	Advanced 7 Months

* Results reviewed by CSCN and RPC during 27 September 2019 conference call.

The most recent R-NRUF data is summarized in the following chart

	July 2019 R-NRUF Aggregate Results (As of July 1 2019)							
	Actuals		Forecast					
NPA / Years	2019	01-Jul-2019	2020	2021	2022	2023	2024	2025
249/705	1107	1111	1170	1224	1319	1369	1493	1542
289/365/905	1896	1890	2017	2166	2292	2433	2514	2568
306/639	1399	1415	1475	1552	1631	1652	1685	1712
343/613	1235	1223	1290	1359	1405	1492	1563	1564
403/587/780/825	2773	2850	2964	3072	3188	3318	3439	3521
416/437/647	1729	1780	1879	1978	2078	2172	2269	2360
438/514	1185	1215	1292	1378	1439	1506	1571	1659
450/579	1227	1216	1280	1345	1426	1514	1581	1650
506	593	587	673	715	755	791	840	859
709	578	578	641	712	763	785	829	844
819/873	1202	1210	1271	1355	1424	1475	1537	1586
NPA / Years	2019	01-Jul-2019	2020	2021	2022	2023	2024	2025

NPA 249/705

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

NPA 249/705 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
249/705	January 2019 G-NRUF	26 March 2019	July 2025
249/705	July 2019 R-NRUF	20 September 2019*	March 2026

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 289/365/905

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

NPA 289/365/905 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
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
289/365/905	July 2018 R-NRUF	5 September 2018	November 2021
289/365/905	January 2019 R-NRUF	26 March 2019	June 2022
289/365/905	July 2019 R-NRUF	20 September 2019*	December 2022

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 306/639

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

NPA 306/639 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
306/639	January 2017 G-NRUF	29 March 2017	July 2022
306/639	July 2017 R-NRUF	25 September 2017	November 2024
306/639	January 2018 R-NRUF	20 March 2018	June 2022

NPA 306/639 Summary of Projected Exhaust Dates			
306/639	May 2018 R-NRUF	27 July 2018	September 2022
306/639	January 2019 R-NRUF	26 March 2019	May 2022
306/639	July 2019 R-NRUF	20 September 2019*	November 2021

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 343/613

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

NPA 343/613 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
343/613	January 2017 G-NRUF	29 March 2017	April 2025
343/613	January 2018 R-NRUF	20 March 2018	February 2024
343/613	July 2018 R-NRUF	5 September 2018	August 2022
343/613	January 2019 R-NRUF	26 March 2019	December 2023
343/613	July 2019 R-NRUF	20 September 2019*	September 2025

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 403/587/780/825

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

NPA 403/587/780/825 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
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
403/587/780/825	July 2018 R-NRUF	5 September 2018	March 2022
403/587/780/825	January 2019 R-NRUF	26 March 2019	June 2022
403/587/780/825	July 2019 R-NRUF	20 September 2019*	February 2022

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 416/437/647

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

NPA 416/437/647 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
416/437/647	January 2019 G-NRUF	26 March 2019	January 2024
416/437/647	July 2019 R-NRUF	20 September 2019*	June 2025

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 438/514

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

NPA 438/514 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
438/514	January 2019 G-NRUF	26 March 2019	October 2023
438/514	July 2019 R-NRUF	20 September 2019*	June 2024

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 450/579

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

NPA 450/579 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
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
450/579	July 2018 R-NRUF	5 September 2018	March 2021
450-579	January 2019 R-NRUF	26 March 2019	June 2024
450/579	July 2019 R-NRUF	20 September 2019*	June 2024

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 506

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

NPA 506 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
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
506	July 2018 R-NRUF	5 September 2018	January 2022
506	January 2019 R-NRUF	26 March 2019	August 2022
506	July 2019 R-NRUF	20 September 2019*	April 2023

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 709

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

NPA 709 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
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
709	July 2018 R-NRUF	5 September 2018	March 2023
709	January 2019 R-NRUF	26 March 2019	August 2023
709	July 2019 R-NRUF	20 September 2019*	October 2023

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

NPA 819/873

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

NPA 819/873 Summary of Projected Exhaust Dates			
NPA	**Type of C-NRUF**	**Date of Publication**	**Projected Exhaust Date**
819/873	January 2019 G-NRUF	26 March 2019	October 2025
819/873	July 2019 R-NRUF	20 September 2019*	March 2025

* Results reviewed by CSCN and RPC during 27 September 2019 conference call

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

No R-NRUFs are scheduled to take place in this calendar year.

4. R-NRUF Assumptions

The assumptions used for the July 2019 R-NRUF for NPAs 249/705, 289/365/905, 306/639, 343/613, 403/587/780/825, 416/437/647, 450/579, 438/514, 506, 709 and 819/873 are the assumptions that were provided on 16 October 2018 to the CNA by the Canadian Steering Committee on Numbering (CSCN) for conducting the January 2019 NRUF.

Item 4 of the 16 October 2018 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. Except in the case of NPAs 416/437/647 and 438/514, the lowest number resulting from these calculations was the one used to identify the PED for NPAs 289/365/905, 306/639, 343/613, 403/587/780/825, 450/579, 506, and 709 as per following chart. For NPAs 416/437/647 and 438/514, the difference between the highest and lowest numbers was too extreme and so a midpoint was selected.

NPA	Future PED Method
249/705	Use Five Year Average of Growth
289/365/905	Use Historical Average
306/639	Use Five Year Average of Growth
343/613	Use Five Year Average of Growth
403/587/780/825	Use Historical Median
416/437/647	CNA Override
438/514	CNA Override
450/579	Use Historical Average
506	Use Five Year Median
709	Use Historical Average
819/873	Use Five Year Average of Growth

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

The CNA sent an e-mail reminder on 29 July 2019 and started contacting individual companies during the first full week of August to remind them of the 9 August 2019 due date. Nevertheless, some R-NRUF submissions were a few days late. Two companies were repeatedly reminded up to 16 August 2019.

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 July 2019 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 July 2019 R-NRUF results for NPA complexes 249/705, 289/365/905, 306/639, 343/613, 403/587/780/825, 416/437/647, 438/514, 450/579, 506, 709, and 819/873 are as realistic as they can be.