

Revised
2002 G-NRUF Report
to the
Canadian Steering Committee on Numbering (CSCN)

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1. Purpose of G-NRUF

The purpose of the General Numbering Resource Utilization Forecast (G-NRUF) is to provide an annual forecast to aid in projecting Numbering Plan Area (NPA) and North American Numbering Plan (NANP) exhaust. The G-NRUF requires current and prospective Code Holders to submit actual and forecasted annual data regarding their current and prospective future use of Central Office (CO) Codes to the Canadian Numbering Administrator (CNA) on an annual basis.

The CNA has prepared this report in order to inform the Canadian Steering Committee on Numbering (CSCN) of the status of all Canadian NPAs.

2. High Level Summary

This section will provide a high level summary and major highlights of this G-NRUF.

A review of the G-NRUF chart will reveal that the projected exhaust dates of several NPAs have either advanced or been deferred significantly from those listed in the 2001 General Central Office Code Utilization Survey (G-COCUS) results. Some of these changes are due to the application of growth factors and the impact of recent economic conditions. Other reasons for these changes include expanding business strategies and business mergers. Specific significant changes are listed below:

- NPA 204 Projected Exhaust Date has advanced 8 years from the 2001 G-COCUS due to the projected expansion of certain carriers into the NPA;
- NPA 306 Projected Exhaust Date has advanced 13 years from the 2001 G-COCUS due to the projected expansion of certain carriers into the NPA;
- NPA 450 Projected Exhaust Date has been deferred 13 years from the 2001 G-COCUS due to the cancellation or delay of projected expansion activities by certain carriers in the NPA;
- NPA 604 Projected Exhaust Date has advanced 19 years from the 2001 G-COCUS due to the projected expansion carrier activities outside the Vancouver free calling area. There is also the possibility that some carriers may not clearly understand the future growth exchanges of the NPA 604 coverage area after the implementation of the NPA 778 Concentrated Overlay;

- NPA 778 Projected Exhaust Date has been deferred 9 years from the 2001 G-COCUS mainly due to the failure of several aggressive Local Exchange Carriers (LEC)s and the merger of two carriers;
- NPA 902 Projected Exhaust Date has advanced 10 years from the 2001 G-COCUS due to the projected expansion carrier activities in the NPA;
- NPAs 905/289 Projected Exhaust Date has been deferred 7 years from the 2001 G-COCUS due to the failure of several LECs and a reduction of forecasted needs by the remaining carriers.

A review of the G-NRUF chart, and the chart below, will reveal that the Projected Exhaust Dates of the NPAs that are currently in the Relief Planning process have all been deferred to some extent from those listed in the 2001 G-COCUS results. Most of these changes are due to the impact of recent poor economic conditions, as well as the failure of several LECs. Due to the advancement of exhaust in NPA 204, as discussed above, NPA 204 will likely enter the Relief Planning process later this year or early next year.

Specific significant changes are listed below:

- NPA 250 Projected Exhaust Date has been deferred from April 2007 to September 2009 (more than 2 years) from the 2001 G-COCUS date;
- NPA 514 Projected Exhaust Date has been deferred from May 2005 to April 2006 (almost 1 year) from the 2001 G-COCUS date;
- NPA 519 Projected Exhaust Date has deferred from July 2006 to November 2006 from the 2001 G-COCUS date;
- NPA 613 Projected Exhaust Date has been deferred from July 2011 to December 2013 (more than 2 years) from the 2001 G-COCUS date; and
- NPA 819 Projected Exhaust Date has advanced from July 2024 to November 2021 (more than 2 years) from the 2001 G-COCUS date.

NPA's in or entering Relief Planning

NPA	2001 G-COCUS View	2002 G-NRUF View	Remarks
204	Dec. 2017	Nov. 2009	Entering Relief Planning
250	Apr. 2007, 2026	Sept. 2009	Entering Relief Planning
514	May 2005, 2016	Apr. 2006, Aug. 2021	NPA 438 Distributed Overlay (7 Feb. 2004)
519	July 2006, 2019	Nov. 2006, Nov. 2027	NPA 226 Distributed Overlay (1Q 2005)
613	July 2011, 2025	Dec. 2013	10-D dialing (4Q 2004, Overlay (3Q 2008)
819	July 2024	Nov. 2021	10-D dialing (4Q 2004)

3. Current G-NRUF and Past G-COCUS Projected Exhaust dates

NPA	LOCATION	2000	2001	2002
204	Manitoba	Jan 2015	Dec 2017	Nov 2009
250	BC (Island & Interior)	Jan 2009	Apr 2007	Sept 2009
306	Saskatchewan	Dec 2015	Oct 2034	Dec 2021
403	S. Alberta	Nov 2008	Sept 2008	Apr 2010
416 / 647	Toronto	Apr 2008	Oct 2010	Aug 2012
418	N. E. Quebec	Feb 2011	Aug 2010	May 2013
450	Montreal Fringe	Dec 2015	May 2017	May 2030
506	New Brunswick	May 2020	2052+	Aug 2047
514 / 438	Montreal	June 2004, Apr 2013	May 2005	Apr 2006
519 / 226	S. Ontario	Jan 2006, July 2020	July 2006	Nov 2006
604	Vancouver area	July 2003	Dec 2040	Nov 2021
613	Ottawa area	Apr 2008, 2025	July 2011	Dec 2013
613P *		Jan 2006	Aug 2007	Mar 2011
705	N. E. Ontario	Jul 2019	Sept 2027	Aug 2022
709	Nfld & Labrador	Sept 2020	2048+	July 2068
778	Vancouver Overlay	In-service Nov 2001	Oct 2012	Oct 2021
780	N. Alberta	Dec 2011	May 2012	July 2013
807	N.W. Ontario	2020+	2064+	July 2168
819	N. E. Quebec	Dec 2017	July 2024	Nov 2021
819P *		Jan 2006	March 2007	July 2010
867	Yukon, NWT, Nun	2020+	2100+	Jan 2336

902	Nova Scotia & PEI	Jun 2014	Oct 2023	Oct 2013
905 / 289	Toronto Fringe	Sept 2008	May 2011	June 2018

P * = with Protected Codes

4. Schedule of Future NRUF Activities in the Current Year

Due Date	NRUF Type	NRUF Format	NPA(s)
June 24	R-NRUF	Format B	250
August 15	S-NRUF	Format A	514
August 15	R-NRUF	Format A	519
August 15	R-NRUF	Format B	613
August 15	R-NRUF	Format B	819

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

- a) Out of the 81 companies, listed in section 8 of this Report, required to complete the G-NRUF, 29 had not responded to the CNA's request by the February 15, 2002 deadline. Of the 29 non-respondents, 19 were independents or municipals, 3 were Competitive Local Exchange Carrier (CLEC)s, and 7 were ILECs and/or wireless companies. On March 15, 2002, only 3 independents with one CO Code each had not reported. The most common reason for not reporting was that the carrier's staff, particularly the independents, forgot and missed the due date.
- b) Sixteen of the carriers, including almost all of the large ones, reported between February 12 and February 15, 2002, meaning that the CNA had to enter and review 70% of the data at the last minute which could cause the CNA to miss some anomalies that require discussion with the carriers.
- c) Although the due date was February 15, 2002, 59 e-mails and 7 faxes were received by the CNA between February 16 and April 30, 2002 either providing G-NRUF information, or revising G-NRUF information previously sent to the CNA.
- d) The last G-NRUF input was received by the CNA on 30 April 2002.
- e) Approximately 30% of the G-NRUF input was not completed in accordance with the instructions that accompanied the CNA's request for G-NRUF input.

- f) After reviewing the G-NRUF input received, the CNA challenged about 60% of the submissions.
- g) The most common errors were missing Operating Company Number (OCN)s, not completing the forms correctly and not understanding what Reserved Code meant. In addition, G-NRUF data was different from the Special COCUS/NRUF or Relief COCUS/NRUF data submitted for the NPAs undergoing Relief Planning that had been submitted in December 2001 for NPA 250 and at the same time as the G-NRUF input (February 2002) for NPAs 514, 519, 613 and 819. In NPA 250, 46% of Code Holders filed different information in the G-NRUF than in other recent Relief Planning COCUS inputs. In NPA 514, 38% filed different information; in NPA 519, 22% filed different information, in NPA 613, 19% filed different information; and, in NPA 819, 27% filed different information.
- h) From February 16 to April 30, 2002 it has taken approximately 20 person days to track down delinquent or reconcile incorrect G-NRUF input.
- i) At least 20% of Code Holders in each NPA submitted incorrect 1 January 2002 actual CO Codes as part of their G-NRUF data inputs.
- j) Since the January 1, 2002 actual CO Codes data submitted by some Code Holders in each NPA was incorrect, the CNA (in consultation with Canadian Radio-television and Telecommunications Commission (CRTC) staff) has used the CNA's own records of January 1, 2002 actual CO Codes to create the G-NRUF information.
- k) The CNA called almost all carriers, including all major carriers, at least once to remind them that they were required to submit their G-NRUF responses or to discuss the data in their responses. The CNA contacted carriers to discuss their data in all cases where the data appeared out of character with past submissions, including all cases where the January 1, 2002 actual CO Code totals did not match those in the Canadian Numbering Administration System database. All cases where the CNA was not satisfied with the responses received were forwarded to CRTC staff, including the March 15, 2002 list of non-respondents. The resulting actions of CRTC staff appear to have resolved the compliance problem and has led to more accurate forecasting.

6. Potential Solutions Identified by the CNA to Address G-NRUF Process Issues

- a) There appears to be no serious negative consequence set out for those companies that do not report on time, particularly for those companies that do not expect to apply for a CO Code in the near future. Additionally,

- there appears to be no serious negative consequence set out for companies that do not forecast accurately. There needs to be some sort of inducement for the companies to report as accurately as possible, once and on time, in order to ensure that the G-NRUF is meaningful and timely.
- b) Since 2/3 of the late respondents are independents that will never likely need another CO Code assignment, it might be advisable to take a different approach when obtaining their forecast data.
 - c) Since a large number of companies were not able to follow the instructions that accompanied the CNA request, it is suggested that the CSCN review and issue more comprehensible G-NRUF instructions.
 - d) The CNA letter requesting G-NRUF submissions from the carriers should explicitly mention the publication of the lists of delinquent carriers developed for the CRTC and CSCN in accordance with section 6 of the Canadian Number Resource Utilization Forecast (C-NRUF) Guideline.
 - e) Since a large number of companies did not know what their actual January 2001 CO Code assignments were, it is suggested that the C-NRUF Guideline be modified to ensure that all Code Holders have access to data related to their individual historical actual CO Code Assignments and forecasts.

7. G-NRUF Assumptions

- a) The 2002 actual values are from CNA records and not CO Code Holders' submissions.
- b) A number of CO Codes were set aside for "New Entrants" in each NPA for years 2002 to 2008.

In NPAs 416-647, 905-289 and 514 a number of CO Codes were set aside for "New Entrants" in accordance with CRTC Orders or Decisions.

- c) Growth factors were established by the CSCN for the years beyond 2008. The growth factors for most NPAs were established using the following equation:

Growth factor = Average of 6 year growth (2002:2008)

For NPAs 613 and 819, the Average of 6 year growth was adjusted to accommodate the negative growth resulting from the release of Protected CO Codes in both NPAs in the year 2004, in accordance with Order CRTC 2001-841.

For NPA 867, the growth factor was adjusted due to the recovery of a large number of CO Codes in two different years during the 2002 to 2008 period.

8. G-NRUF Participation List

List of Current and prospective Code Holders Submitting 2002 G-NRUF Data	
Abitibi-Price Telephone Exchange	Managed Network Systems Inc.
Amtelecom Inc.	Manitoba Telephone System
AT&T Canada	Manitoulin Tel, division of Amtelecom
Bell Canada (Ontario)	Maskatel
Bell Canada (Quebec)	MaxLink Communications Inc.
Bell Intrigna Inc.	MicroCell Connexions (Wireless PCS)
Bell Mobility	MicroCell Connexions (Wireless LEC)
Brooke Telecom Co-operative Ltd.	Mornington Communications Co-operative Ltd.
Bruce Municipal Telephone System	MTT
Call-Net Communications/Sprint	NB Tel
Clearnet Inc.	NewTel Communications
Clearnet PCS	Nexicom Telecommunications Inc
Cochrane Public Utilities Commission	Nexicom Telephones Inc
COGECO Cable Canada Inc.	North Frontenac Telephone Company
Coldwater Communications, division of Amtelecom	North Renfrew Telephone Company Ltd.
CoopTel de telecommunication	Northern Telephone Ltd.
Dryden Municipal Telephone System	Northwestel
EastLink Limited	O.N. Tel
ExaTEL Inc.	People's Telephone Company of Forest
Futureway Communications Inc.	Prince Rupert City Telephones
Gateway Tel	Quadro Communications Co-operative Inc.
Globalstar	TELUS Quebec Inc.
Gosfield North Communication Co-operative Ltd.	Quebectel Alize Inc.
GT Group Telecom Services Corp.	Rogers AT&T Wireless
Hay Communications Co-operative Ltd.	Roxborough Telephone Company Ltd.
Huron Telecommunications Co-operative Ltd.	SaskTel
Execulink Telecom Inc.	Sogetel Inc.
Island Tel	South Bruce Rural Telephone Company Ltd.
ISP Telecom	Suite Systems Inc.
Keewatin Municipal Telephone System	Telebec Ltee.
Kenora Municipal Telephone System	Telephone Guevremont Inc.

La Cie de Telephone de Courcelles Inc.	Telephone Milot Inc.
La Cie de Telephone de Warwick	TELUS
La Cie de Telephone Nantes inc.	TELUS Integrated Communication
La Compagne de Telephone Upton	TELUS Mobility Cellular Inc.
La Compagnie de Telephone de Lambton Inc.	Thunder Bay Telephone
La Compagnie de Telephone de St-Victor	Tuckersmith Communications Co-operative Ltd.
La Corporation de Telephone de la Baie (1993)	Videotron Telecom (1998) Ltee
Lansdowne Rural Telephone Ltd.	Westport Telephone Company Ltd.
Le Telephone de St-Ephrem Inc	Wightman Telephone Ltd.
Le Telephone de St-Liboire de Bagot Inc.	

Conclusion

In accordance with Section 4, Item 10 h) 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 C-NRUF results are reasonable and the Projected Exhaust Dates for all NPAs are realistic.

The CNA notes that the Canadian telecommunications environment is going through a period of significant change due to the introduction of competition in local exchange markets in recent years. There has also been a significant increased demand for wireless services, which has been stimulated by the introduction of lower cost handsets and low cost pay-as-you-use wireless services. These factors have contributed in recent years (1999 and 2000) to a significant increase in the current and future demand for telephone numbers and CO Codes, particularly in major Canadian cities and surrounding areas. However, the general trend since the 2000 G-COCUS has been towards the deferral of the Projected Exhaust Dates of almost all NPAs containing a medium to high population while the trend for the NPAs that are more lightly populated is the advancement of the forecasted Projected Exhaust Date.

The trend for exhaust deferral in the more populated NPAs is consistent with the fact that in 1999 and 2000, local competition made its debut in Canada and CLECs were establishing their footprints, particularly in the more densely populated areas. Some CLECs had aggressive marketing plans that led to somewhat optimistic forecasts for those years, even after their forecasts were challenged by CNA and CRTC staff. However, the recent restructuring of the wireline portion of the industry, due to the normalizing of the number of carriers and the downturn in the economy in 2001 and early 2002, has reduced the number of CLECs significantly. Other telecommunications service providers have modified their market entry and expansion plans as their market and competitive experience affects their business results. Additionally, some

telecommunications service providers have been taken over by others. These factors have decreased the anticipated demand for CO Codes over the short term. However, the decrease has been somewhat tempered by the continued growth in the wireless market.

It has also been noted that some exhaust deferrals are less in NPAs undergoing relief than those that are not. The reason for this trend may be that the NRUFs for those NPAs undergoing relief are at the exchange level and the carriers are forced to take a detailed look at their needs before making their forecasts. Experience has revealed that exchange level forecasts produce different results than NPA level forecasts.

The trend for the exhaust date to advance in NPAs that have a medium-sized population center (e.g., Winnipeg and Halifax) also appears to be reasonable. These Rate Centers are the next areas where competition will occur, for both wireline and wireless carriers. These NPAs had low growth rates and with new carriers establishing their presence in a number of exchanges, the growth rates increase enough to have a significant impact on the Projected Exhaust Date.

The trend for the Projected Exhaust Date to advance in the more sparsely populated NPAs tracks the growth of the wireless industry as it expands into these areas. Where the Projected Exhaust Dates have previously been predicted to be 30, 40, or 50 years out, any additional CO Code requirements will move this date inwards.

As we move forward into the remainder of 2002 and 2003, the CNA expects the telecommunications market to evolve further with additional business rationalization and a move towards an equilibrium position. However, at this time, there is still the potential for volatility in demand for numbering resources that is difficult to predict. Due to this uncertainty, there is considerable latitude for determining what is reasonable and realistic. Accordingly, based on this assessment, in the CNA's opinion, the G-NRUF results for this year appear reasonable and the Projected Exhaust Dates for Canadian NPAs are generally realistic. This assessment has been tempered by some uncertainties in the data, as discussed in section 5 above. Additionally, the CNA expects that the exhaust dates for more densely populated NPAs may start to move marginally inward next year if the current economic upturn continues.