RPC Planning Document

NPA 519 Numbering Relief

Version 4

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LIST OF ANNEXES

Planning Document NPA 519 Numbering Relief

1. EXECUTIVE SUMMARY

NPA 519 consists of 210 Exchanges including the rapidly growing exchanges of Brantford, Chatham, Galt, Goderich, Guelph, Hespeler, Kitchener-Waterloo, London, Orangeville, Owen Sound, Sarnia, Simcoe, Stratford, Windsor and Woodstock, located in the south western part of Ontario in Canada. The majority of the projected growth in NPA 519 is mainly limited to these 15 exchanges. In the remaining 195 exchanges there is virtually no projected growth.

The CNA initiated Relief Planning based on the results of the October 2000 NPA 519 Relief Planning Central Office Code Utilization Survey (R-COCUS), that indicated NPA 519 would exhaust in December of 2006. Subsequently, the results of the 2001 General COCUS (G-COCUS) indicated that NPA 519 would exhaust in July 2006.

During the course of the Committee's deliberations, the Committee assessed the options identified by the CNA as well as a longer list of options identified by the Committee.

The Relief Planning Committee considered the IPD developed by the CNA and, based upon discussion, identified a total of 15 potential Relief Options for consideration. These options are listed as follows:

1) Split (North-South division)
2) Split (East-West division)
3) Dual Concentrated Overlay (North-South division)
4) Dual Concentrated Overlay (East-West division)
5) Concentrated Overlay (5-13 County division)
6) Concentrated Overlay (9-9 County division)
7) Distributed Overlay
8) North-South Split using highways 401/402 as a boundary
9) Concentrated Overlay over Multiple Exchanges over top 5 growth exchanges (i.e., those with the most growth)
10) Concentrated Overlay over Multiple Exchanges over top 15 growth exchanges
11) Concentrated Overlay over Multiple Exchanges over all exchanges with more than one NXX
12) North-South Dual Concentrated Overlay (2 additional NPAs) using highways 401/402 as a boundary
13) East-West Split between Kitchener/Woodstock
14) Concentrated Overlay over 3 largest EAS areas
15) Concentrated Overlay along eastern boundary (high growth areas along eastern edge of NPA 519 to include London)

The Distributed Overlay option showed a distinct advantage when compared to all the other options. The major advantages of the Distributed Overlay are:

1) It does not require any telephone number changes for customers;
2) Deferral of implementation;
3) Wireless communications devices do not have to be reprogrammed;
4) No existing telephone industry (e.g., rate center, exchange and wire center) or political boundaries are impacted; and,
5) A consistent 10-digit local dial plan across the NPA evolves the NPA 519 dial plan towards the industry recommended adoption of a 10-digit Uniform Dial Plan.

Based upon its analysis of the Relief Options, the Relief Planning Committee recommends that:

1) relief for NPA 519 be implemented using the Distributed Overlay Option;
2) relief be scheduled for implementation in the first to second quarter of 2005, which is estimated to be 12-18 months prior to the currently projected exhaust date of July 2006 (based upon 2001 G-COCUS results);
3) the CNA conduct semi-annual COCUS at the NPA level of detail in January and July of each year in order to monitor CO Code usage, forecasts and the projected exhaust date;
4) the CNA reconvene the Relief Planning Committee to establish a Relief Implementation Plan (including a Consumer Awareness Program and Network Implementation Plan) at least 3 years prior to the projected exhaust date;
5) the Distributed Overlay Relief Option be implemented by all telecommunications service providers using a standard permissive dialling network announcement script and 7 to 10 digit dialling transition period of about 2 months duration;
6) telecommunications service providers be permitted to implement a standard network permissive dialling announcement over a one week period about two months prior to the Relief Date, and to phase in the mandatory 10 digit dialling network announcement over a one week period prior to the Relief Date;
7) the local dialling plan for customers within NPA 519 and the 519 Relief NPA be changed to 10-digits for all local calls within and between NPA 519 and the 519 Relief NPA, as well as for local calls into neighbouring NPAs 705 and 905/289;
8) the local dialling plan for customers in neighbouring NPA 705 be modified to require 10-digit dialling for local calls from that NPA into NPA 519 and the 519 Relief NPA, but retaining 7-digit dialling for local calls in NPA 705.

This PD is being issued in accordance with Canadian Steering Committee on Numbering approved NPA Relief Planning and Notification Guidelines (INC 97-0404-016, dated January 27, 1999) to facilitate the selection of a consensus NPA 519 code relief method and a relief date.

2. INTRODUCTION

NPA 519 consists of 210 Exchanges including the rapidly growing exchanges of Brantford, Chatham, Galt, Goderich, Guelph, Hespeler, Kitchener-Waterloo, London, Orangeville, Owen Sound, Sarnia, Simcoe, Stratford, Windsor and Woodstock, located in the south western part of Ontario in Canada. The majority of the projected growth in NPA 519 is mainly limited to these 15 exchanges. In the remaining 195 exchanges there is virtually no projected growth. See Annex A, Figures 1 and 2 for diagrams of the affected area showing the municipal boundaries and exchanges, respectively.

The rapidly growing number of CO Codes due to wireless expansion and local competition in a few specific exchanges is exhausting the number of CO Codes available for assignment in NPA 519.

It is very important to closely monitor the expansion plans of all existing and emerging service providers to ensure that relief is provided in advance of exhaust so that CO Codes and telephone numbers are always available for telecommunications service providers and customers, and to avoid the creation of a Jeopardy Condition (see NPA Relief Planning & Notification Guidelines) and the associated need to implement Special Conservation Measures in the area served by NPA 519.

3. CENTRAL OFFICE CODE EXHAUST

The chart and data contained in Annex A, Figures 3 and 4 provides a summary of the actual CO Code assignments and historical COCUS forecasts for NPA 519. This information was used by the CNA to determine the Projected Exhaust Date for NPA 519. When an NPA is projected to exhaust within about a 6 year period, the CNA initiates relief planning for that NPA with the objective of implementing relief 12 to 18 months in advance of the then Projected Exhaust Date. Over time, the Projected Exhaust Date may change as the forecast requirement for CO Codes and telephone numbers changes in response to customer demand for existing and new telecommunications services and the requirements of existing and new telecommunications service providers. The objective is to ensure that users and telecommunications service providers always have access to telephone numbers and CO Codes so that their needs and requirements can be satisfied.

3.1. NPA 519 R-COCUS

Results of the October 30, 2000 R-COCUS indicate that CO Codes in NPA 519 were expected to exhaust by the 4th quarter of 2006. The results of the 2001 G-COCUS indicate that CO Codes in NPA 519 are now expected to exhaust by July 2006.

Refer to Annex A, Figures 5 and 6 for graphs that represent the rate of CO Code utilization in NPA 519 based on results from the October 30, 2000 R-COCUS.

NPA 519 relief must be in place well in advance of reaching 769 assigned CO Codes, to allow for forecast volatility.

3.2. NPA 519 ACTUAL (2000-2001) and R-COCUS (2002-2006)

Refer to Annex A, Figures 7 and 8 for graphs that represent the rate of CO Code utilization in NPA 519. Actual January 1st CO Code assignments for the years 2000 and 2001 and results from the October 30, 2000, R-COCUS for the years 2002 to 2006 as of January 1 are represented.

4. CODE RELIEF METHODS

Once the necessity for NPA code relief was established, all code relief methods were considered, but only the following alternatives were examined in detail.

1. Geographic Split (Two options);
2. Dual NPA Concentrated Overlays (Two options);
3. Concentrated Overlay (Two options);
4. Distributed Overlay.

4.1. Geographic Split

4.1.1. Definition

By this method, the exhausting NPA is split into two or more geographic areas, leaving the existing NPA code to serve an area with the highest consumer density (to minimize number changes), and assigning a new NPA code(s) to the remaining area. This method traditionally divides areas by jurisdictional, natural or physical boundaries between the old and the new NPA.

NPA splits have occurred with enough frequency so that technical aspects have been addressed and established implementation procedures are generally understood. Public education and acceptance of the process has been made easier because of the numerous NPA splits that have occurred throughout North America. This method generally provides long-term relief for an area.

4.1.2. General Attributes

- Old method of NPA relief is familiar to the public and has well established implementation procedures.
- Ten-digit dialling required for local calls between different NPAs.
- Number changes required in new NPA boundaries.
- Reprogramming or replacement of equipment (switches, PBXs, cellular phones, etc.).
- Existing customers inconvenienced.
- More economic burden (businesses, public costs, stationery, etc.).
- Not as expensive to display in telephone directory.
- Requires a permissive dialling period.
- Possible boundary disputes.

4.2. Overlay

4.2.1. Definition

An NPA overlay occurs when more than one NPA code serves the same geographic area. Opening up a new NPA code provides code relief when the existing NPA is exhausted. Numbers from the new NPA are assigned for new growth on a carrier neutral basis, i.e., first come first served. This method necessitates 10-digit dialling of local calls between the old and new NPAs coincident with NXX codes being implemented in the new NPA (universal 10-digit dialling for all local calls eliminates customer confusion).

A Concentrated Overlay strategy is considered when the growth in telephone numbers continuously occurs or is expected to occur in a specific area of the existing NPA.

A Distributed Overlay strategy is considered in situations when the growth in telephone numbers is expected to be more or less uniform throughout the existing NPA.

4.2.2. General Attributes

- Requires universal 10-digit dialling within and between NPAs.
- No number changes are required for existing customers.
- Least disruptive to end-users.
- Less economic burden for existing business.
- Same location, two NPAs in residence/business.
- Increased directory costs.

5. OPTIONS IDENTIFIED BY THE CNA IN THE IPD

Four alternatives, comprising seven relief options were presented in the Initial Planning Document. These options were evaluated using the assumptions shown below:

A. The relief date for five of the relief options will be 2nd Q 2005 (18 months prior to the projected NPA 519 exhaust date of 4Q 2006 identified using October 2000 R-COCUS results). These options include two Geographic Split options, two Dual NPA Concentrated Overlay options and a Distributed Overlay option.

B. The relief date for the two options that use a single NPA Concentrated Overlay will be 2nd Q 2004 (30 months prior to the projected NPA 519 exhaust in 4Q 2006 identified using October 2000 R-COCUS results). This length of time is required to ensure that a sufficient number of CO Codes remain available to provide for the future growth of NPA 519, as well as to ensure that both the new Relief NPA and NPA 519 exhaust at approximately the same time.

See Annex A, Figures 9 through 15 for diagrams of the relief options identified by the CNA.

5.1. Geographic Split

Existing municipal, physical or natural boundaries do not lend themselves for use as reference points to split the NPA because they do not match existing telephone exchange area boundaries. However for ease of understanding, exchanges have been grouped into 18 counties where they are physically located. The complete lists of exchanges that are included in each of these options are identified in Annex B.

Two geographic splits were assessed as follows:

5.1.1. NPA 519 Geographic Split (Option 1-i):

The area served by the 124 Exchanges in Brant, Bruce, Dufferin, Grey, Halton, Hamilton-Wentworth, Huron, Oxford, Peel, Perth, Waterloo and Wellington counties would retain NPA 519 and the area served by the remaining 86 NPA 519 Exchanges in Elgin, Essex, Haldimond-Norfolk, Kent, Lambton and Middlesex counties would be grouped in the new NPA. The area that would retain NPA 519 contains the rapidly growing exchanges of Brantford, Galt, Guelph, Hespeler, Kitchener-Waterloo, Orangeville, Owen Sound, Stratford and Woodstock, while the new NPA would contain the rapidly growing exchanges of Chatham, London, Sarnia and Windsor. Relief to NPA 519 and the new NPA is expected to last until the years 2025 and 2026 respectively. Using this relief option, approximately 1.3 million numbers would be required to change.

5.1.2. NPA 519 Geographic Split (Option 1-ii):

The area served by the 98 Exchanges in Elgin, Essex, Kent, Lambton, Middlesex and Oxford counties would retain NPA 519 and the area served by the remaining 112 NPA 519 Exchanges in Brant, Bruce, Dufferin, Grey, Halton, Hamilton-Wentworth, Haldimond-Norfolk, Huron, Peel, Perth, Waterloo and Wellington counties would be grouped in the new NPA. The area that would retain NPA 519 contains the rapidly growing exchanges of Chatham, London, Sarnia, Windsor and Woodstock, while the new NPA would contain the rapidly growing exchanges of Brantford, Galt, Guelph, Hespeler, Kitchener-Waterloo, Orangeville, Owen Sound and Stratford. Relief to NPA 519 and the new NPA is expected to last until the years 2025 and 2025 respectively. Using this relief option, approximately 1.3 million numbers would be required to change.

5.1.3. Split Along Highways 401 and 402:

During the Relief Planning Committee meetings, the Committee requested the CNA to provide its rationale with respect to why a split along Highways 401 and 402 was not included in the IPD as a Relief Option.

Highways 401 and 402 provide a distinct landmark that divides NPA 519 boundaries into possible North and South regions. The CNA identified that over 20 exchange areas could be divided into multiple parts if the Highways were utilized to establish the new NPA boundaries. The CNA also identified that many communities of interest would also be divided.

One of the adverse results of dividing exchanges in this way would be the necessity to create duplicate NXXs on both sides of the split for use by carriers that already have NXXs in NPA 519.

Given the recent changes to the INC NPA Code Relief Planning & Notification Guidelines, and the draft version of the Canadian NPA Relief Planning Guidelines currently before the CRTC for approval, the CNA believed that the concept of not splitting rate center, and exchange or wire center boundaries should be observed.

Accordingly, although the CNA did identify the Highway Split as a potential alternative for relief, the CNA concluded that this was not a reasonable option to be pursued and therefore did not include it in the IPD.

5.2. Dual NPA Concentrated Overlay

Two options were evaluated to simultaneously introduce two new NPAs in the NPA 519 serving area using the Concentrated Overlay method of providing CO Code relief.

The main advantage of all alternatives introducing an Overlay method over the Split method is that number changes are not required. However it eliminates 7-digit local dialling and introduces 10-digit local dialling throughout the NPA serving area.

5.2.1. NPA 519 Dual Concentrated Overlays (Option 2-i):

This option proposes a concentrated overlay in the NPA 519 area served by the 124 Exchanges in Brant, Bruce, Dufferin, Grey, Halton, Hamilton-Wentworth, Huron, Oxford, Peel, Perth, Waterloo and Wellington counties with the first new NPA and to simultaneously overlay the area served by the remaining 86 NPA 519 Exchanges in Elgin, Essex, Haldimond-Norfolk, Kent, Lambton and Middlesex counties with a second new NPA. Relief to NPA 519 and the two new NPAs is expected to last until the years 2005, 2044 and 2044 respectively.

5.2.2. NPA 519 Dual Concentrated Overlay (Option 2-ii):

This option proposes a concentrated overlay in the NPA 519 area served by the 112 Exchanges in Brant, Bruce, Dufferin, Grey, Halton, Hamilton-Wentworth, Haldimond-Norfolk, Huron, Peel, Perth, Waterloo and Wellington counties with the first new NPA and to simultaneously overlay the area served by the remaining 98 NPA 519 Exchanges in Elgin, Essex, Kent, Lambton, Middlesex and Oxford counties with a second new NPA. Relief to NPA 519 and the two new NPAs is expected to last until the years 2005, 2044 and 2044 respectively.

5.3. Single NPA Concentrated Overlay

Two different options were considered to introduce a new NPA using the Concentrated Overlay method to provide relief to the NPA 519 serving area.

The main advantage of all alternatives introducing an Overlay method over the Split method is that number changes are not required. However it eliminates 7-digit local dialling and introduces 10-digit local dialling throughout the NPA serving area.

5.3.1. NPA 519 Concentrated Overlay (Option 3-i):

This option proposes to overlay the NPA 519 area served by the 123 Exchanges in Brant, Dufferin, Elgin, Essex, Haldimond-Norfolk, Halton, Hamilton-Wentworth, Kent, Middlesex, Oxford, Peel, Waterloo and Wellington counties with the new NPA, while the area served by the remaining 87 NPA 519 Exchanges in Bruce, Grey, Huron, Lambton and Perth counties would continue to grow using the remaining CO Codes available for assignment in NPA 519. Relief to NPA 519 and the new NPA is expected to last until the years 2026 and 2017 respectively.

5.3.2. NPA 519 Concentrated Overlay (Option 3-ii):

This option proposes to overlay the NPA 519 area served by the 117 Exchanges in Brant, Dufferin, Elgin, Essex, Kent, Middlesex, Oxford, Waterloo and Wellington counties with the new NPA, while the area served by the remaining 93 NPA 519 Exchanges in Bruce, Grey, Haldimond-Norfolk, Halton, Hamilton-Wentworth, Huron, Lambton, Peel and Perth counties would continue to grow using the remaining CO Codes available for assignment in NPA 519. Relief to NPA 519 and the new NPA is expected to last until the years 2026 and 2015 respectively.

5.4. Introduce a New NPA using the Distributed Overlay Method

5.4.1. Distributed Overlay Method:

This option proposes to overlay all 210 Exchanges in NPA 519 with a new NPA. Relief to NPA 519, and the new NPA is expected to last until the years 2006 and 2025 respectively.

5.5. Summary of Relief Options Identified by the CNA

The following is a comparison of the alternatives evaluated by the CNA:

Description	NPA 519 Geographic Split (1-i)	NPA 519 Geographic Split (1-ii)	NPA 519 Dual Concentrated Overlays (2-i)	NPA 519 Dual Concentrated Overlays (2-ii)
Exhaust – NPA 519	2025	2025	2005	2005
Exhaust – 1st NPA	2026	2025	2044	2044
Exhaust –2nd NPA	N/A	N/A	2044	2044
Number Changes Required	1.3M	1.3 M	Nil	Nil
Dialling Impact	7/10 Digits	7/10 Digits	10 Digits	10 Digits
Permissive Dialling	Required	Required	Required	Required

Description	NPA 519 Concentrated Overlay (3-i)	NPA 519 Concentrated Overlay (3-ii)	NPA 519 Distributed Overlay (4-i)
Exhaust – NPA 519	2026	2026	2006
Exhaust – New NPA	2017	2015	2025
Approximate Number Changes Required	Nil	Nil	Nil
Dialling Impact	10 Digits	10 Digits	10 Digits
Permissive Dialling	Required	Required	Required

6. IDENTIFICATION & ASSESSMENT OF RELIEF OPTIONS CONSIDERED BY THE RELIEF PLANNING COMMITTEE

The Relief Planning Committee considered the IPD developed by the CNA and, based upon discussion, identified a total of 15 potential Relief Options for consideration. These options are listed as follows:

1) Split (North-South division)
2) Split (East-West division)
3) Dual Concentrated Overlay (North-South division)
4) Dual Concentrated Overlay (East-West division)
5) Concentrated Overlay (5-13 County division)
6) Concentrated Overlay (9-9 County division)
7) Distributed Overlay
8) North-South Split using highways 401/402 as a boundary
9) Concentrated Overlay over Multiple Exchanges over top 5 growth exchanges (i.e., those with the most growth)
10) Concentrated Overlay over Multiple Exchanges over top 15 growth exchanges
11) Concentrated Overlay over Multiple Exchanges over all exchanges with more than one NXX
12) North-South Dual Concentrated Overlay (2 additional NPAs) using highways 401/402 as a boundary
13) East-West Split between Kitchener/Woodstock
14) Concentrated Overlay over 3 largest EAS areas
15) Concentrated Overlay along eastern boundary (high growth areas along eastern edge of NPA 519 to include London)

The following criteria were used to assess the Relief Options:

A. NPA Code Conservation – uses less NPAs within the 20 year planning cycle
B. Quantity of Number Changes for existing customers' numbers
C. Total Carrier Costs – e.g., including implementation, customer awareness
D. Deferral of Implementation – how long before customers have to make a change
E. Longevity – the length of time before further relief activity would be required (e.g., a new area code)
F. Political Alignment – alignment with municipal and provincial boundaries (typically, exchange boundaries do not align with intra-provincial boundaries)
G. Geographic Identity – known areas or identifiable geographical features
H. Customer Costs/Impacts – complicated dialling plan or NPA border identification
I. Reprogram Mobile Phones – requirement to reprogram wireless devices to accommodate the number changes
J. Change to the Local Dialling Plan
K. Does it continue to make resources available from the original NPA
L. Exchange Boundary Changes – will exchange boundary changes be required by this relief option

The following chart contains the Pro/Con analysis of the Relief Planning Options developed at the NPA 519 Relief Planning Committee meetings:

P = Pro
C = Con
N = Neutral

	NPA 519 Relief Options	A	B	C	D	E	F	G	H	I	J	K	L
1i	Split (North-South division)	P	C	C	P	P	C	C	[9]	C	C[4]	C[5]	P[7]
1ii	Split (East-West division)	P	C	C	P	P	C	C	[9]	C	C[4]	C[5]	P[7]
2i	Dual Concentrated Overlay (North-South division)	C	P	C	P	PP	C	C	[9]	P	C	C	P[7]
2ii	Dual Concentrated Overlay (East-West division)	C	P	C	P	PP	C	C	[9]	P	C	C	P[7]
3i	Concentrated Overlay (5-13 County division)	P	P	P	C	P	C	C	[9]	P	C	C[6]	P[7]
3ii	Concentrated Overlay (9-9 County division)	P	P	P	C	P	C	C	[9]	P	C	C[6]	P[7]
4	Distributed Overlay	P	P	P	P	P	N[3]	C	[9]	P	C	C	P[7]
5	North-South Split using highways 401/402 as a boundary	P	C	C[1]	P	C	C	P	[9]	C	C[4]	C[5]	C
6i	Concentrated Overlay over Multiple Exchanges over top 5 growth exchanges (i.e., those with the most growth)	P	P	C	C	P	C	C	[9]	P	C	C[6]	P[7]
6ii	Concentrated Overlay over Multiple Exchanges over top 15 growth exchanges	P	P	C	N[2]	P	C	C	[9]	P	C	C[6]	P[7]
6iii	Concentrated Overlay over Multiple Exchanges over all exchanges with more than one NXX	P	P	C	P[2]	P	C	C	[9]	P	C	C[6]	P[7]
7	North-South Dual Concentrated Overlay (2 additional NPAs) using highways 401/402 as a boundary	C	P	C[1]	P	PP	C	P	[9]	P	C	C	C
8	East-West Split between Kitchener/Woodstock	P	C	C	P	P[8]	C	C	[9]	C	C[4]	C[5]	P[7]
9	Concentrated Overlay over 3 largest EAS areas	P	P	C	C	P[8]	C	C	[9]	P	C	C[6]	P[7]
10	Concentrated Overlay along eastern boundary (high growth areas along eastern edge of NPA 519 to include London)	P	P	C	C	P[8]	C	C	[9]	P	C	C[6]	P[7]

Notes:

1 This option will require splitting exchange boundaries.
2 This assessment is based on the assumption that Option 6i) would need to be implemented earlier than 6ii), which in turn would have to be implemented earlier than 6iii).
3 The Distributed Overlay does not change the current alignment whereas other splits and overlays may not align with municipal boundaries.
4 There is a potential to retain 7-digit dialling within the NPA, but 10-digit dialling will be required across the border of the NPAs.

5 The geographic region that retains the original NPA has access to resources from NPA 519, whereas the other geographic region must use CO Codes and telephone numbers from the new NPA.

6 The geographic region covered by the concentrated overlay would be required to use CO Codes and telephone numbers from the new overlay NPA, whereas those outside the area covered by the new concentrated overlay would use CO Codes and telephone numbers from NPA 519.

7 The assumption is that except for the split and concentrated overlay options along Highways 401/402; all other options will be executed along exchange boundaries.

8 These options were not evaluated with defined geographic areas. It was assumed that as all similar options were "pros", these options would result in a "pro" as well.

9 The RPC chose to leave this column blank due to difficulties experienced in attempting to objectively determine which option might result in greater or lesser customer impacts. It was suggested that the participation of consumers or consumer groups would have been of assistance.

An examination of the Options identified in the Matrix provided the following results:

	NPA 519 Relief Options	**TOTAL P**	**TOTAL C**	**TOTAL N**
1i	Split (North-South division)	4	7	
1ii	Split (East-West division)	4	7	
2i	Dual Concentrated Overlay (North-South division)	5	6	
2ii	Dual Concentrated Overlay (East-West division)	5	6	
3i	Concentrated Overlay (5-13 County division)	6	5	
3ii	Concentrated Overlay (9-9 County division)	6	5	
4	Distributed Overlay	7	3	1
5	North-South Split using highways 401/402 as a boundary	3	8	
6i	Concentrated Overlay over Multiple Exchanges over top 5 growth exchanges (i.e., those with the most growth)	5	6	
6ii	Concentrated Overlay over Multiple Exchanges over top 15 growth exchanges	5	5	1
6iii	Concentrated Overlay over Multiple Exchanges over all exchanges with more than one NXX	6	5	
7	North-South Dual Concentrated Overlay (2 additional NPAs) using highways 401/402 as a boundary	5	6	
8	East-West Split between Kitchener/Woodstock	4	7	
9	Concentrated Overlay over 3 largest EAS areas	5	6	
10	Concentrated Overlay along eastern boundary (high growth areas along eastern edge of NPA 519 to include London)	5	6	

The Relief Planning Committee assessed and ranked the Options based upon a Pro minus Con analysis, as per the Table below:

	NPA 519 Relief Options	TOTAL Pros	TOTAL Cons	TOTAL Neutral	Pros-Cons =
4	Distributed Overlay	7	3	1	4
3i	Concentrated Overlay (5-13 County division)	6	5		1
3ii	Concentrated Overlay (9-9 County division)	6	5		1
6iii	Concentrated Overlay over Multiple Exchanges over all exchanges with more than one NXX	6	5		1
6ii	Concentrated Overlay over Multiple Exchanges over top 15 growth exchanges	5	5	1	0
2i	Dual Concentrated Overlay (North-South division)	5	6		-1
2ii	Dual Concentrated Overlay (East-West division)	5	6		-1
6i	Concentrated Overlay over Multiple Exchanges over top 5 growth exchanges (i.e., those with the most growth)	5	6		-1
7	North-South Dual Concentrated Overlay (2 additional NPAs) using highways 401/402 as a boundary	5	6		-1
9	Concentrated Overlay over 3 largest EAS areas	5	6		-1
10	Concentrated Overlay along eastern boundary (high growth areas along eastern edge of NPA 519 to include London)	5	6		-1
1i	Split (North-South division)	4	7		-3
1ii	Split (East-West division)	4	7		-3
8	East-West Split between Kitchener/Woodstock	4	7		-3
5	North-South Split using highways 401/402 as a boundary	3	8		-5

6.1.1. Assessment

The Distributed Overlay option (Option 4) showed a distinct advantage in its raw score (pro minus cons) when compared to all the other options in the matrix. The major reasons for the higher score for the Distributed Overlay are:

1) It does not require any telephone number changes for customers;
2) Deferral of implementation;
3) Wireless communications devices do not have to be reprogrammed;
4) No existing telephone industry (e.g., rate center, exchange and wire center) or political boundaries are impacted; and,
5) A consistent 10-digit local dial plan across the NPA evolves the NPA 519 dial plan towards the industry recommended adoption of a 10-digit Uniform Dial Plan.

For relief of NPA 519, the RPC prefers the Distributed Overlay option over Geographic Split and Concentrated Overlay options.

The reasons for this preference are as follows:

1) An Overlay is preferred over a Geographic Split for the relief of NPA 519 because

a) An Overlay avoids the need for customers to change existing telephone numbers. Thus, customers can avoid the costs associated with informing their callers and customers of the telephone number change (advertising, stationery, etc.);

b) A Geographic Split would require the reprogramming of a large number of wireless communications devices to conform to the assignment of a new NPA, which is costly for service providers and inconvenient for customers, for example, if they need to take their devices to a service centre. This reprogramming is not required for an Overlay;

c) If a Geographic Split is chosen, then each time relief is provided, the number of separate areas for which subsequent relief planning must be done is doubled, and each future relief planning activity will again have to weigh overlay and split options. With a Distributed Overlay, the number of separate areas for which future relief planning must be done does not increase. In addition, future relief becomes much simpler for customers and service providers, since no transition period or dialling plan changes will be necessary when a new NPA is added in the future;

d) Implementing an Overlay in NPA 519 will reduce the quantity of protected codes in the new NPA(s) as 10-digit local dialling will be implemented throughout the NPA area. In addition, the adoption of 10-digit local dialling will eliminate a significant quantity of protected codes within adjacent NPAs such as 289, 905 and 705 as well as in NPA 519. A Geographic Split of NPA 519 with retention of 7-digit local dialling would increase the quantities of protected codes, and eliminate none; and

e) The primary benefit of a Geographical Split is that it would allow the retention of 7-digit local dialling. However, a split often has the disadvantage that some existing EAS areas will cross new NPA boundaries, which requires either an increase in code protection or a change to a mixed 7-digit/10-digit dialling plan for local calls, diluting the benefits of retaining 7-digit dialling. There would be no dialling benefit from a Geographic Split if it were to be introduced coincident with the adoption of 10-digit local dialling. Even if a Geographic Split permits retention of 7-digit local dialling this benefit would be temporary as it is expected that the 10-digit dialling Uniform Dial Plan will be introduced in the future.

Accordingly, the RPC believes that the benefits of an Overlay outweigh the benefits of a Geographic Split.

2) A Distributed Overlay is preferred over a Single Concentrated Overlay because

a) A Single Concentrated Overlay requires that relief be provided sooner than would be necessary with a Distributed Overlay, so that sufficient codes in the existing NPA remain to accommodate code growth in the area outside the Concentrated Overlay. This advances the incurrence of costs and inconvenience for both customers and telecommunications service providers. The earlier implementation of Relief would require that customers change over to 10-digit dialling earlier than they would have to in a Distributed Overlay that could be problematic for some customers (e.g., alarm companies, telemetric services; 9-1-1 PSAPS);

b) The border between the new Concentrated Overlay NPA and the outlying areas is not readily identifiable, which could lead to customer confusion. In addition, these Options have the potential to create a non-uniform dial plan and additional customer confusion (if 7 digit dialling is retained in the area outside the concentrated overlay); and

c) With a Single Concentrated Overlay, subsequent relief dates will likely occur independently and separately for the Overlay area and for the area outside it, creating additional inconvenience for service providers and customers in the future. With a Single Concentrated Overlay, the first future relief will occur sooner than would be the case with

a Distributed Overlay, because of variations in growth between the Concentrated Overlay area and the area outside it.

Accordingly, the RPC believes that the benefits of a Distributed Overlay outweigh the benefits of Concentrated Overlays.

However, in the event that the CRTC determines that a Concentrated Overlay would be preferred over a Distributed Overlay, the RPC suggests that Concentrated Overlay Option 3i) would be preferable to Option 3ii) as Option 3i) creates two contiguous areas rather than 5 non-contiguous areas under Option 3ii) that are not covered by the overlay NPA (i.e., Peel, Halton, Hamilton-Wentworth, Haldimand-Norfolk, and the combined Lambton-Huron-Perth-Bruce-Grey area).

3) A Distributed Overlay is preferred over a Dual or Multiple Concentrated Overlay because it is more difficult for the customer to understand and deal with than the Distributed Overlay, and is more complicated for service providers to implement and to communicate to the customer. In addition, the Dual or Multiple Concentrated Overlay would use more NPAs than the Distributed Overlay; while this would defer subsequent exhaust, it would not be as efficient in terms of NPA Code conservation.

Accordingly, the RPC concludes that the benefits of a Distributed Overlay outweigh those of the Geographic Split and Concentrated Overlay options.

7. DIALLING CHANGES FOR LOCAL CALLS

The following tables reflect the dialling arrangement for Local calls only for Splits and Overlays.

The Toll call dialling arrangement is not impacted due to the NPA relief. The tables below identify recommended modifications to the local dialling plans in NPA 519, the NPA 519 Relief NPA, as well as in neighbouring NPAs 289, 905 and 705. The italicized text in the following tables identifies the changes.

Local Dialling Plan for Customers in NPA 519

Dial Plan Scenarios	Today	After 519 Split	After 519 Overlay
Landline to Wireless within NPA	7-digits	7-digits	*10-digits*
Landline to Wireless from NPA 519 to Adjacent NPAs	7-digits	*10-digits*	*10-digits*
Landline to Landline within NPA	7-digits	7-digits	*10-digits*
Landline to Landline from NPA 519 to Adjacent NPAs	7-digits	*10-digits*	*10-digits*
Wireless to Wireless within NPA	7-digits	7-digits	*10-digits*
Wireless to Wireless from NPA 519 to Adjacent NPAs	10-digits	10-digits	10-digits

Local Dialling Plan for Customers in 519 Relief NPA

Dial Plan Scenarios	Today	After 519 Split	After 519 Overlay
Landline to Wireless within NPA	N/A	7-digits	10-digits
Landline to Wireless from Relief NPA to Adjacent NPAs	N/A	10-digits	10-digits
Landline to Landline within NPA	N/A	7-digits	10-digits
Landline to Landline from Relief NPA to Adjacent NPAs	N/A	10-digits	10-digits
Wireless to Wireless within NPA	N/A	7-digits	10-digits
Wireless to Wireless from Relief NPA to Adjacent NPAs	N/A	10-digits	10-digits

Local Dialling Plan for Customers in Neighbouring NPAs 289/905

Dial Plan Scenarios	Today	After 519 Split	After 519 Overlay
Landline to Wireless within NPA	10-digits	10-digits	10-digits
Landline to Wireless from NPA 289/905 to Adjacent NPAs	10-digits	10-digits	10-digits
Landline to Landline within NPA	10-digits	10-digits	10-digits
Landline to Landline from NPA 289/905 to Adjacent NPAs	10-digits	10-digits	10-digits
Wireless to Wireless within NPA	10-digits	10-digits	10-digits
Wireless to Wireless from NPA 289/905 to Adjacent NPAs	10-digits	10-digits	10-digits

Local Dialling Plan for Customers in Neighbouring NPA 705

Dial Plan Scenarios	Today	After 519 Split	After 519 Overlay
Landline to Wireless within NPA	7-digits	7-digits	7-digits
Landline to Wireless from NPA 705 to NPA 519 &/or Relief NPA	7-digits	*10-digits*	*10-digits*
Landline to Landline within NPA	7-digits	7-digits	7-digits
Landline to Landline from NPA 705 to NPA 519 &/or Relief NPA	7-digits	*10-digits*	*10-digits*
Wireless to Wireless within NPA	7-digits	7-digits	7-digits
Wireless to Wireless from NPA 705 to NPA 519 &/or Relief NPA	10-digits	10-digits	10-digits

8. PROPOSED SCHEDULE

The Relief Planning Committee developed the following proposed schedule using the best available information at this time. A number of assumptions were made with respect to the timeframes for certain events. Depending upon the Relief Option that is approved by the CRTC, the following proposed schedule will be modified accordingly.

	Canadian NPA Relief Planning Timeline	Time	Cumulative	Start	End
		Required	Time	Date	Date
Number	Task or Event	(months)	(months)		
1	CNA identifies NPA exhaust and notifies by e-mail CRTC staff, CSCN, NANP-A & CISC that the NPA will exhaust*				07-00
2	CNA conducts NPA Relief Planning COCUS and begins preparation of IPD				10-00
3	CRTC issued Public Notice 2001-21, to establish RPC and Interested Parties list. CNA announces the date for the initial NPA Relief Planning meeting and requests contributions			02-01	02-01
4	CNA completes and distributes IPD to RPC				03-01
5	RPC participants review IPD			03-01	05-01
6	CNA chairs initial RPC meeting to present, explain and discuss the NPA Relief Planning process and the IPD. RPC schedules next meeting/conference call.		10	05-01	
7	CNA distributes revised IPD based upon initial meeting discussions.	0.5	10.5		06-01
8	RPC participants provide comments on revised IPD as contributions to the RPC	0.5	11.00		07-01
9	RPC participants review contributions, if any, prior to second meeting/conference call	0.5	11.5		07-01
10	CNA chairs subsequent RPC meetings/conference calls to finalize Planning Document	0.5	12.0		08-01
11	CNA revises and forwards Planning Document (PD) to the CISC and CRTC	1.5	13.5		09-01
12	CISC reviews and forwards PD to the CRTC for approval	1	14.5		10-01
13	CRTC initiates a process to approve/revise the PD and establish the Relief Option and Date	1	15.5	10-01	11-01
14	Interested Parties submit comments and reply comments to CRTC	3	18.5	11-01	02-02
15	CRTC issues decision & directs RPC to develop an NPA Relief Implementation Plan (RIP)	2	20.5	02-02	04-02

	Canadian NPA Relief Planning Timeline	Time	Cumulative	Start	End
		Required	Time	Date	Date
Number	Task or Event	(months)	(months)		
16	CNA requests and obtains assignment of Relief NPA(s) from the NANP-A and schedules meeting of RPC in order to develop a consensus RIP and Planning Letter (PL)	0.5	21	04-02	05-02
17	CNA chairs RPC meeting to create Task Forces	0	21	04-02	05-02
18	RPC and its Task Forces develop and obtain consensus on the various components of the RIP and PL (a series of meetings/conference calls might be required)	4	25.0	05-02	09-02
19	CNA forwards consensus RIP to CISC and the PL to NANPA	0.5	25.5	09-02	09-02
20	CISC reviews and forwards RIP to the CRTC for approval	2	27.5	09-02	11-02
21	CRTC approves RIP and notifies Interested Parties	1	28.5	11-02	12-02
22	CNA issues second media release and sends approved RIP to NANP-A, TRA, LNP Consortium and RPC members	0.5	29	12-02	12-02
23	Task Forces, Telecommunications Service Providers and users execute the RIP	15	44	12-02	03-04
24	Permissive Dialling Period in the event of a Split / 7- to 10- digit Dialling Transition Period in the event of an Overlay (To Be Determined based upon CRTC approved Option)	9	53	03-04	12-04
25	Relief Date (generally 12 to 18 months prior to the Projected Exhaust Date) (TBD)	0		01-05	06-05
26	CNA submits Final Report to CISC within two months of Relief implementation			06-05	09-06
27	Projected Exhaust Date			07-06	07-06

* When an NPA is projected to exhaust within a 72 months period, the CNA must commence the Relief Planning process.

** In the event that a new COCUS or actual demand indicates that the exhaust date will change significantly, the CNA may convene a meeting of the NPA Relief Planning Working Group to review the issue and make a recommendation to the CISC and CRTC.

9. RECOMMENDATIONS

Based upon its analysis of the Relief Options, the Relief Planning Committee recommends that:

1) relief for NPA 519 be implemented using the Distributed Overlay Option;
2) relief be scheduled for implementation in the first to second quarter of 2005, which is estimated to be 12-18 months prior to the currently projected exhaust date of July 2006 (based upon 2001 G-COCUS results);
3) the CNA conduct semi-annual COCUS at the NPA level of detail in January and July of each year in order to monitor CO Code usage, forecasts and the projected exhaust date;
4) the CNA reconvene the Relief Planning Committee to establish a Relief Implementation Plan (including a Consumer Awareness Program and Network Implementation Plan) at least 3 years prior to the projected exhaust date;
5) the Distributed Overlay Relief Option be implemented by all telecommunications service providers using a standard permissive dialling network announcement script and 7 to 10 digit dialling transition period of about 2 months duration;
6) telecommunications service providers be permitted to implement a standard network permissive dialling announcement over a one week period about two months prior to the Relief Date, and to phase in the mandatory 10 digit dialling network announcement over a one week period prior to the Relief Date;
7) the local dialling plan for customers within NPA 519 and the 519 Relief NPA be changed to 10-digits for all local calls within and between NPA 519 and the 519 Relief NPA, as well as for local calls into neighbouring NPAs 705 and 905/289;
8) the local dialling plan for customers in neighbouring NPA 705 be modified to require 10-digit dialling for local calls from that NPA into NPA 519 and the 519 Relief NPA, but retaining 7-digit dialling for local calls in NPA 705.