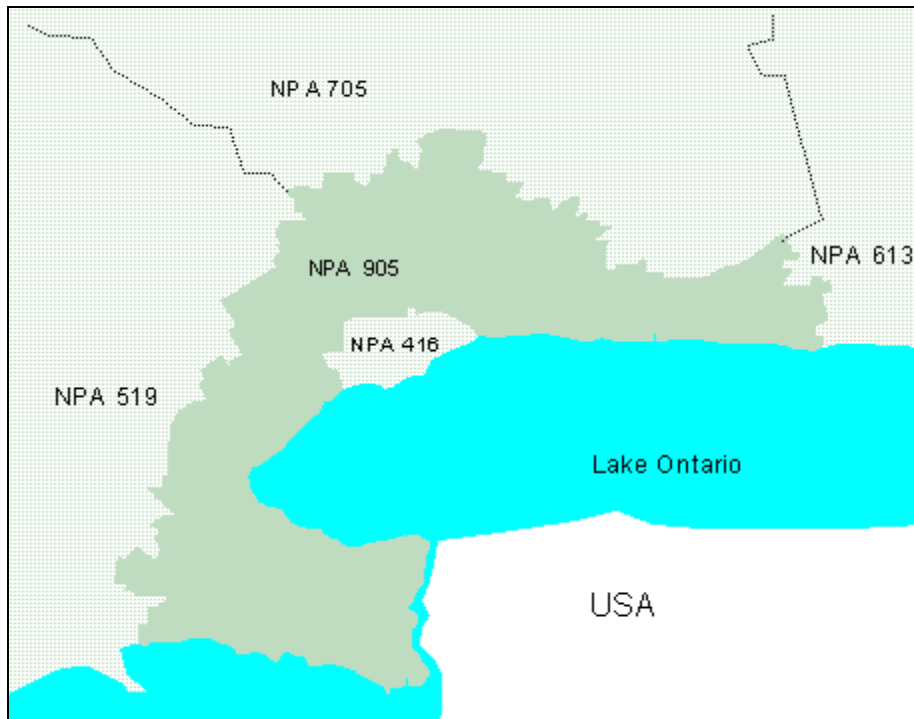


# Planning Document NPA 905 Numbering Relief Rev 3



**CNA**

Science Applications International  
Corporation (SAIC Canada)

Version 3 IPD Revised Based on February 15, 2000 Special COCUS Results

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# Planning Document NPA 905 Numbering Relief Rev 3

## 1. EXECUTIVE SUMMARY

This Planning Document identifies possible solutions for providing relief to the NPA 905 geographic area. Based on the February 15, 2000 Special Central Office Code Utilization Survey (COCUS), the existing 800 Central Office (CO) Codes, of which 770 are assignable, are forecast to exhaust in August 2001.

The following alternatives were evaluated:

- a. Split the NPA into two geographic areas (three options):
  - (i) Municipalities south of Peel Regional Municipality would be grouped in the new NPA and the remainder of the Municipalities including Peel Regional Municipality would retain NPA 905.
  - (ii) Municipalities south of Peel Regional Municipality and the exchanges south of Highway 401 within the Peel Regional Municipality would retain NPA 905. The remainder of the exchanges within Peel Regional Municipality and the remainder of the municipalities would be grouped in the new NPA.
  - (iii) Exchanges surrounding Toronto (inner ring) would be grouped in the new NPA, the remaining exchanges (outer ring) would retain NPA 905.
- b. Split the NPA 905 into three geographic areas. The exchanges directly south-west and south of Toronto would retain NPA 905, NPA 705 boundary would be realigned to include some of the neighbouring NPA 905 exchanges, the remainder of the exchanges in the NPA 905 geographic area would be assigned the new NPA. This option was rejected due to the high quantity of CO Code conflicts.
- c. Introduce a new NPA using the Distributed Overlay Option.
- d. Split the NPA 905 into three geographic areas. Exchanges in the Halton Regional Municipality, Peel Regional Municipality and Simco County would retain NPA 905. Exchanges in Haldimond–Norfolk Regional Municipality, Hamilton–Wentworth Regional Municipality and the Niagara Regional Municipality will be grouped in the 1<sup>st</sup> new NPA. The remainder of the exchanges within York Regional Municipality, Durham Regional Municipality and Northumberland County will be grouped in the 2<sup>nd</sup> new NPA.

The following is a comparison of the alternatives evaluated:

Description	Alternatives				
	Municipality Split #a. (i)	Municipality & Exchange Split #a. (ii)	Rings Around Toronto #a. (iii)	Distributed Overlay #c.	Municipality Three Way Split #d.
Exhaust – NPA 905	2006	2007	2007	2001	2013
Exhaust – 1 <sup>st</sup> New NPA	2010	2008	2008	2008	2017
Exhaust – 2 <sup>nd</sup> New NPA	N/A	N/A	N/A	N/A	2012
# Changes Required	1.5 M	1.5 M	1.6 M	Nil	2.2 M
Dialling Impact	7/10D	7/10D	7/10D	10D	7/10D
Permissive Dialling	Required	Required	Required	Required	Required

This revised Planning Document is being issued in accordance with Industry Numbering Committee (INC) guidelines to facilitate the selection of a consensus NPA 905 code relief alternative.

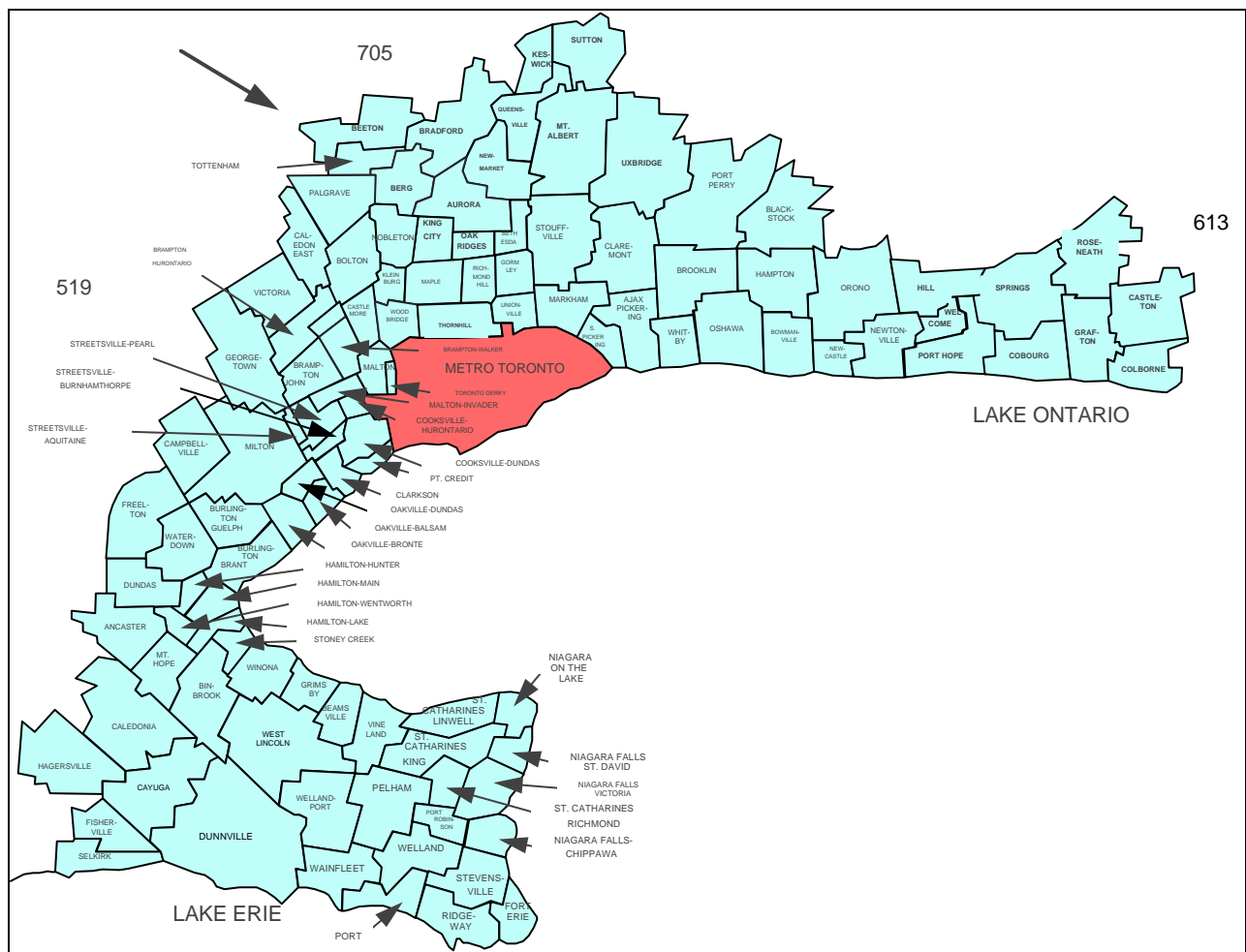
Given the magnitude of this undertaking, inter-company commitment and co-operation are essential throughout the planning, provisioning and implementation stages of the introduction of the new NPA(s).

## 2. INTRODUCTION

In October 1993, relief to NPA 416 was provided by geographically splitting the area. Toronto retained NPA 416 and the remainder of the territory was assigned NPA 905. Coincident with the split, 10-digit dialling became mandatory for local calls between NPA 416 and NPA 905, however within an NPA, 7-digit dialling remained intact for local calling.

In October 1993, 307 CO Codes were transferred from NPA 416 to create the new NPA 905. Since then, 238 new CO Codes have been assigned for landline growth and for the rapidly growing cellular and local competition expansion.

It is very important to closely monitor the expansion plans of all existing and emerging service providers to provide relief earlier than later.



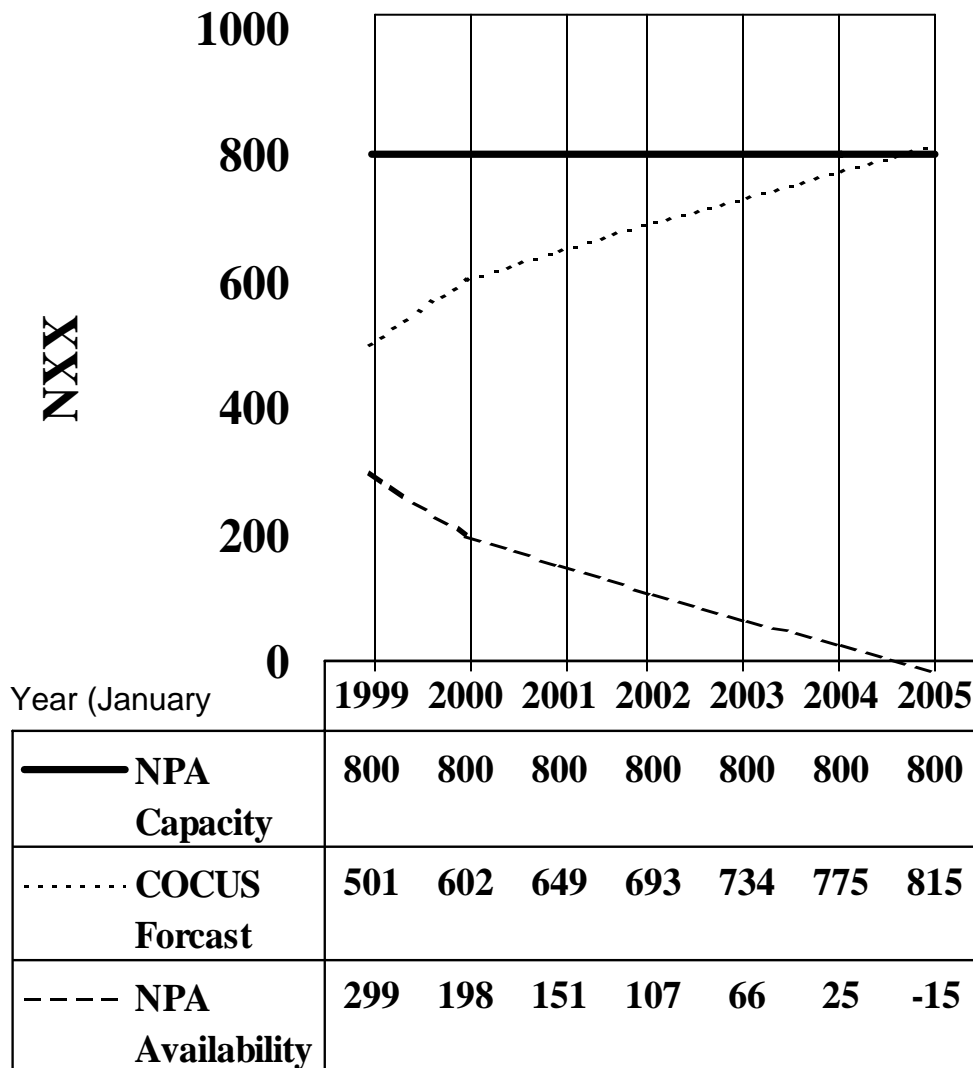
**Figure 1 Existing NPA 905 and NPA 416**

### 3. CENTRAL OFFICE CODE EXHAUST

All NPA 905 Central Office Codes are expected to exhaust in August 2001. This determination is based on the February 15, 2000 Special Central Office Code Utilization Survey (COCUS) results which were issued by the Canadian Numbering Administrator (CNA) on March 7, 2000. This finding is not consistent with the results of the 1999 COCUS, which indicated that NPA 905 was likely to exhaust in Q2 2004.

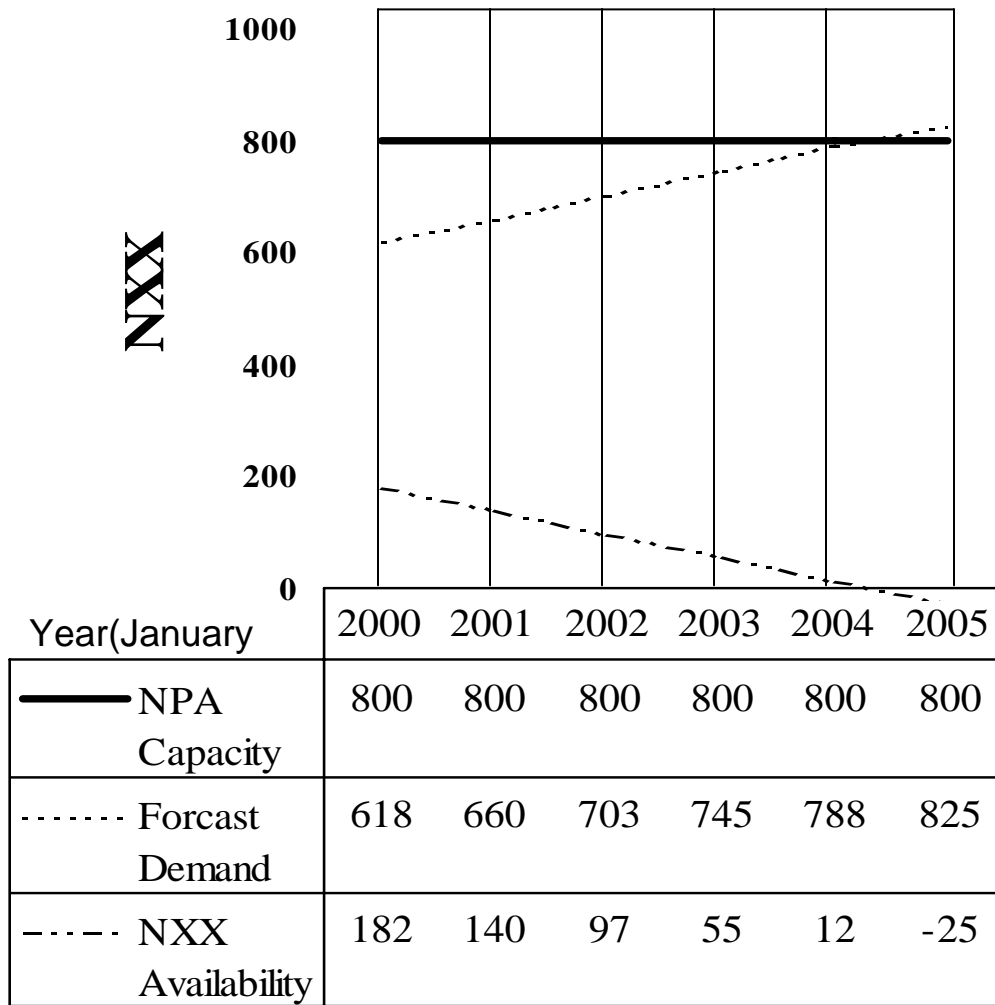
The year over year change in the forecasts due to new business strategies, Telecom Decision CRTC 94-19, which allows for local competition, and the granting of Personal Communications Services (PCS) licenses for the introduction of PCS service in 1996 have all contributed to the earlier than expected requirement for relief of NPA 905. The following graphs represent the rate of CO Code exhaust in NPA 905 based on results from the March 1999 General COCUS, the November 1999 Selective COCUS (only targeted at certain service providers) and the February 15, 2000 Special COCUS.

#### NPA 905 - Code Exhaust-1999 COCUS



**Figure 2 NPA 905 CO Code Exhaust**

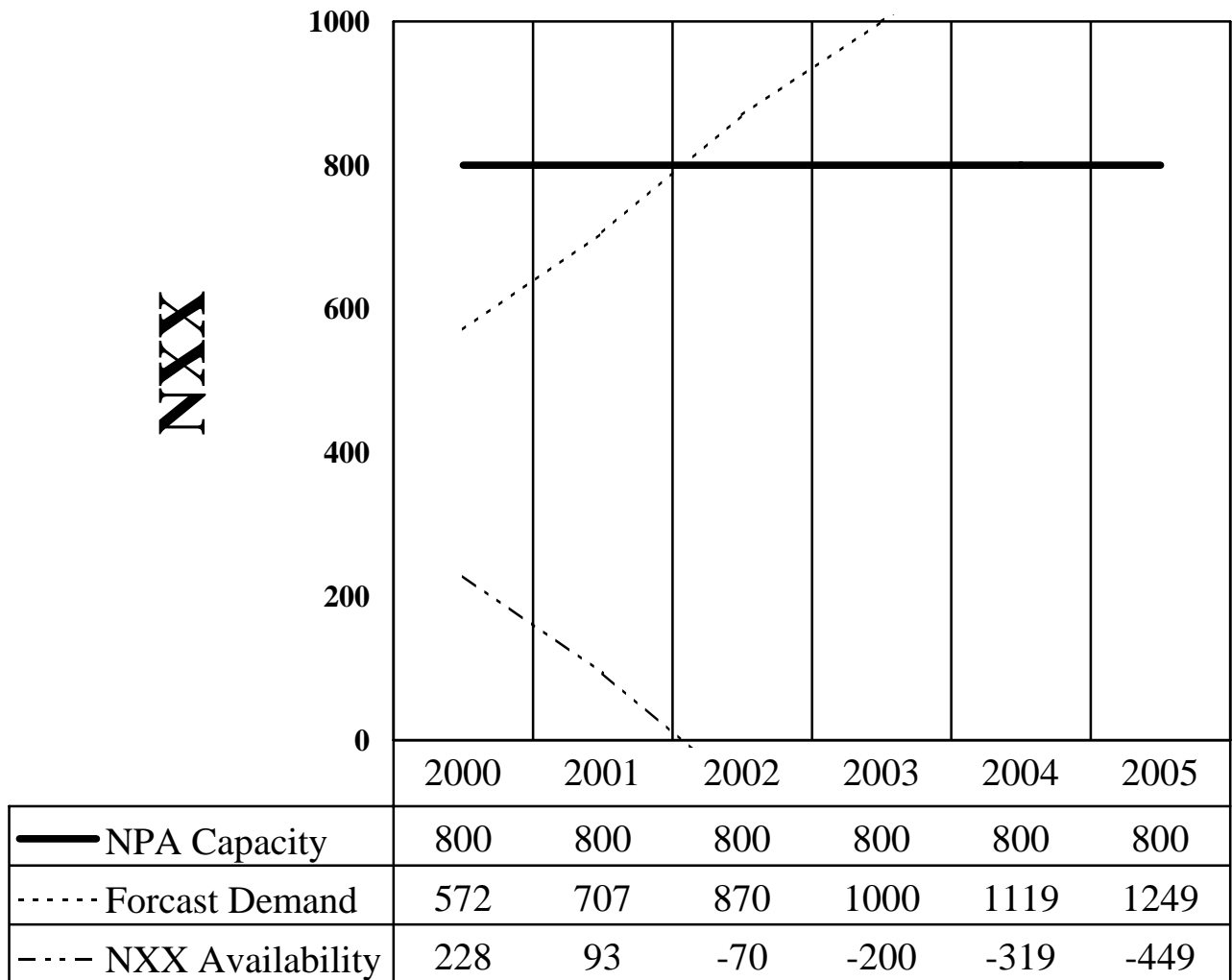
# NPA 905 Code Exhaust-Selective COCUS 11-99



**Figure 3 NPA 905 CO Code Exhaust - Selective COCUS 11-99**

\*

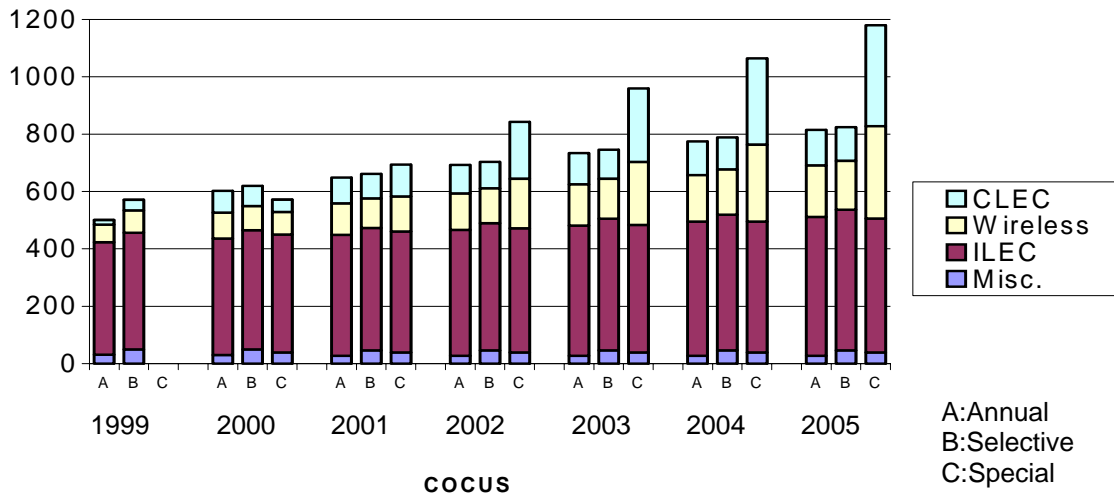
# NPA 905 Code Exhaust-Special COCUS Feb. 15 2000



**Figure 4 NPA 905 CO Code Exhaust – Special COCUS Feb.-15-2000**



All values are for January 01, except the 1999 Selective COCUS, which is for November 1999.



**Figure 5 NPA 905 COCUS 1999**

Figures 4 and 5 highlight the need to have relief in place well in advance of reaching 770 assigned CO Codes, to allow for forecast volatility and to accommodate a period for permissive dialling and intercepting of misdialled numbers.

## 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.

- a. Geographic Split (Four options);
- b. Distributed Overlay.

### 4.1. *Geographic Split*

#### 4.1.1. *Definition*

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

This method has been the alternative chosen for practically all NPA relief situations prior to 1995. 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 NPA's.
- Number changes required in new NPA boundaries.
- Reprogramming or replacement of equipment (Switches, PBX's, Cell Phones, etc.).
- Existing customers inconvenienced.
- More economic burden (businesses, public costs, stationery, etc.).
- NPA exhaust occurs more rapidly, thus requiring new NPA's.
- Not as expensive to display in telephone directory.
- Requires a permissive dialling period.
- Possible boundary disputes.

### 4.2. *Distributed 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 to new growth on a carrier neutral basis, i.e., first come first served. This method will necessitate 10-digit dialling of local calls between the old and new NPA's coincident with NXX codes being implemented in the new NPA (universal 10-digit dialling for all local calls eliminates customer confusion). The distributed overlay strategy is considered in situations when growth in telephone numbers is expected to be more or less evenly distributed throughout the existing NPA.

#### 4.2.2. *General Attributes*

- New method of NPA relief, little general public understanding.
- Requires universal 10-digit dialling within the NPA.
- No number changes are required for existing customers.
- Least disruptive to end-users.
- Less economic burden for existing business.
- Greater longevity of numbering resource before new NPA required.
- Same location, two NPA's in residence/business.
- Increased directory costs.

## 5. IMPACT OF RELIEF METHODS

### 5.1. *Geographic Split*

Four geographic splits were assessed namely; Municipality Split, Municipality & Exchange Split, Rings Around Toronto and Municipality Three Way Split.

#### 5.1.1. *Municipality Split*

This option groups municipalities south of Peel Regional Municipality as one entity that would adopt the new NPA. The other entity, which groups the remainder of Municipalities including Peel Regional Municipality, would retain NPA 905. This option would result in approximately 1.5 million number changes. Relief to NPA 905 and the new NPA is expected to last until year 2006 and 2010 respectively.

#### 5.1.2. *Municipality & Exchange Split*

This option would allow municipalities south of Peel Regional Municipality and four exchanges south of Highway 401 (Clarkson, Cooksville, Port Credit and Streetsville) within the Peel Regional Municipality to retain NPA 905 while the remainder of the exchanges in Peel Regional Municipality and the remainder of the municipalities would be grouped in the new NPA. This option would result in approximately 1.5 million number changes. Relief to NPA 905 and the new NPA is expected to last until year 2007 and 2008 respectively.

#### 5.1.3. *Rings Around Toronto*

This option groups NPA 905 exchanges surrounding Toronto (Inner ring) into the new NPA and the remainder of exchanges (Outer ring) would retain NPA 905. This option would result in approximately 1.6 million number changes. Relief to NPA 905 and the new NPA is expected to last until year 2007 and 2007 respectively.

#### 5.1.4. *Municipality Three Way Split*

This options splits the NPA 905 into three geographic areas. Exchanges in the Halton Regional Municipality, Peel Regional Municipality and Simco County would retain NPA 905. Exchanges in Haldimond–Norfolk Regional Municipality, Hamilton–Wentworth Regional Municipality and the Niagara Regional Municipality will be grouped in the 1<sup>st</sup> new NPA. The remainder of the exchanges within York Regional Municipality, Durham Regional Municipality and Northumberland County will be grouped in the 2<sup>nd</sup> new NPA. This option would result in approximately 2.2 million number changes. Relief to NPA 905 and two new NPAs is expected to last until years 2013, 2017 and 2012 respectively.

**In each of the above split options a permissive dialling period of at least six to twelve months is necessary.**

## **5.2. *Distributed Overlay***

This alternative would result in the new NPA being introduced coincident with the exhaust of NPA 905. Coincidentally, universal 10-digit local dialling would be required. Although a permissive dialling period is not necessary, it is recommended that an adaptation period for 10-digit dialling be introduced prior to assigning the first NXX in the new NPA. Relief to the new NPA is expected to last until year 2008.

**Main advantage of this alternative is that number changes are not required.**

## 6. DIALING CHANGES FOR LOCAL CALLS

In addition to the dialing patterns that exist for local calls between NPA 905 and NPA 416, the following tables reflect the dialing arrangement for each alternative for local calls only.

The Toll call dialing arrangement is not impacted due to the NPA relief.

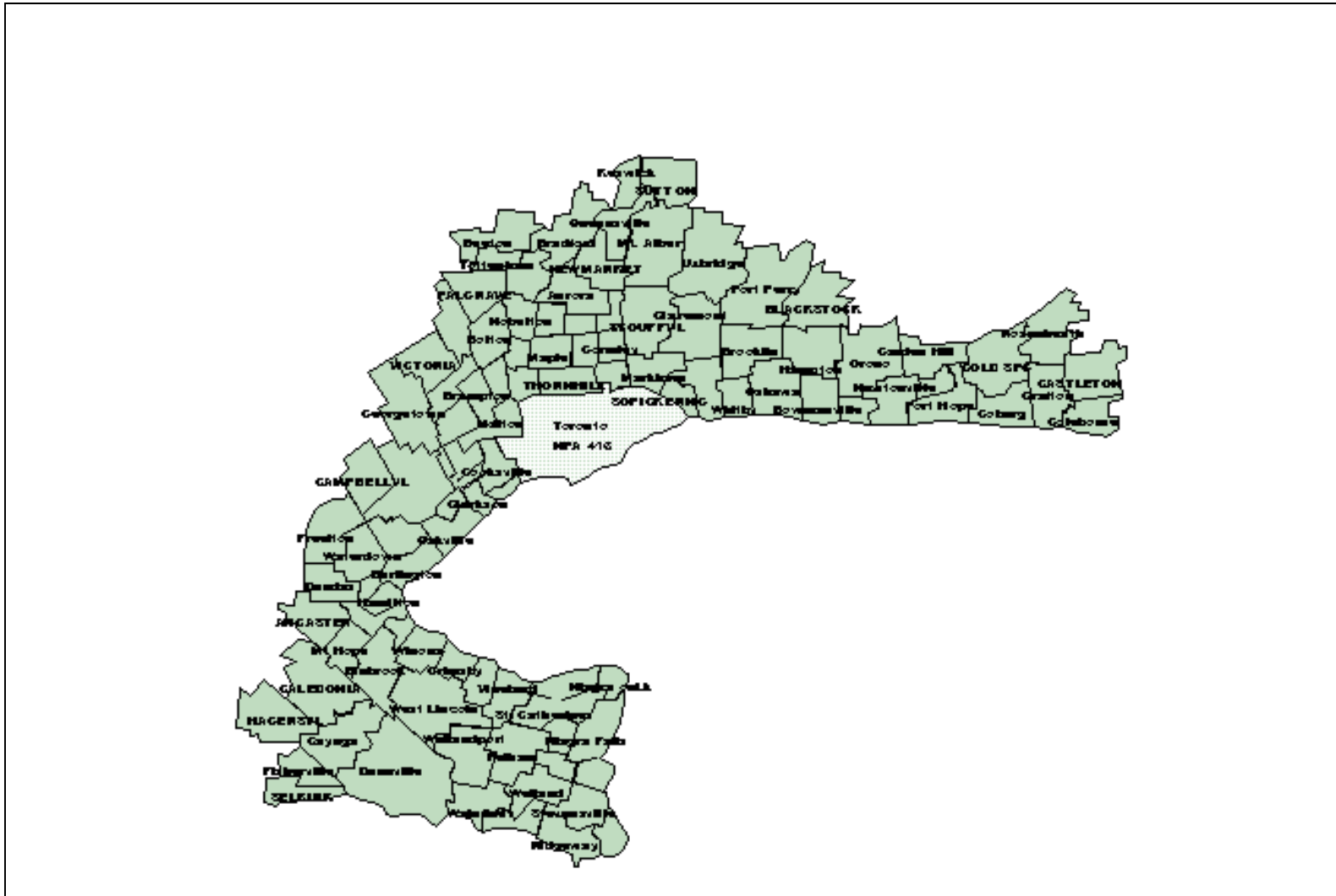
<b>Geographic Split</b>	<b>Today</b>	<b>After Relief</b>
Landline to Wireless within NPA	7 digits	7 digits
Landline to Wireless between NPAs	10 digits	10 digits
Landline to Landline within NPA	7 digits	7 digits
Landline to Landline between NPAs	10 digits	10 digits
Wireless to Wireless within NPA	7 digits	7 digits
Wireless to Wireless between NPAs	10 digits	10 digits

<b>Distributed Overlay</b>	<b>Today</b>	<b>After Relief</b>
Landline to Wireless within NPA	7 digits	10 digits
Landline to Wireless between NPAs	10 digits	10 digits
Landline to Landline within NPA	7 digits	10 digits
Landline to Landline between NPAs	10 digits	10 digits
Wireless to Wireless within NPA	7 digits	10 digits
Wireless to Wireless between NPAs	10 digits	10 digits

## 7. PROPOSED SCHEDULE

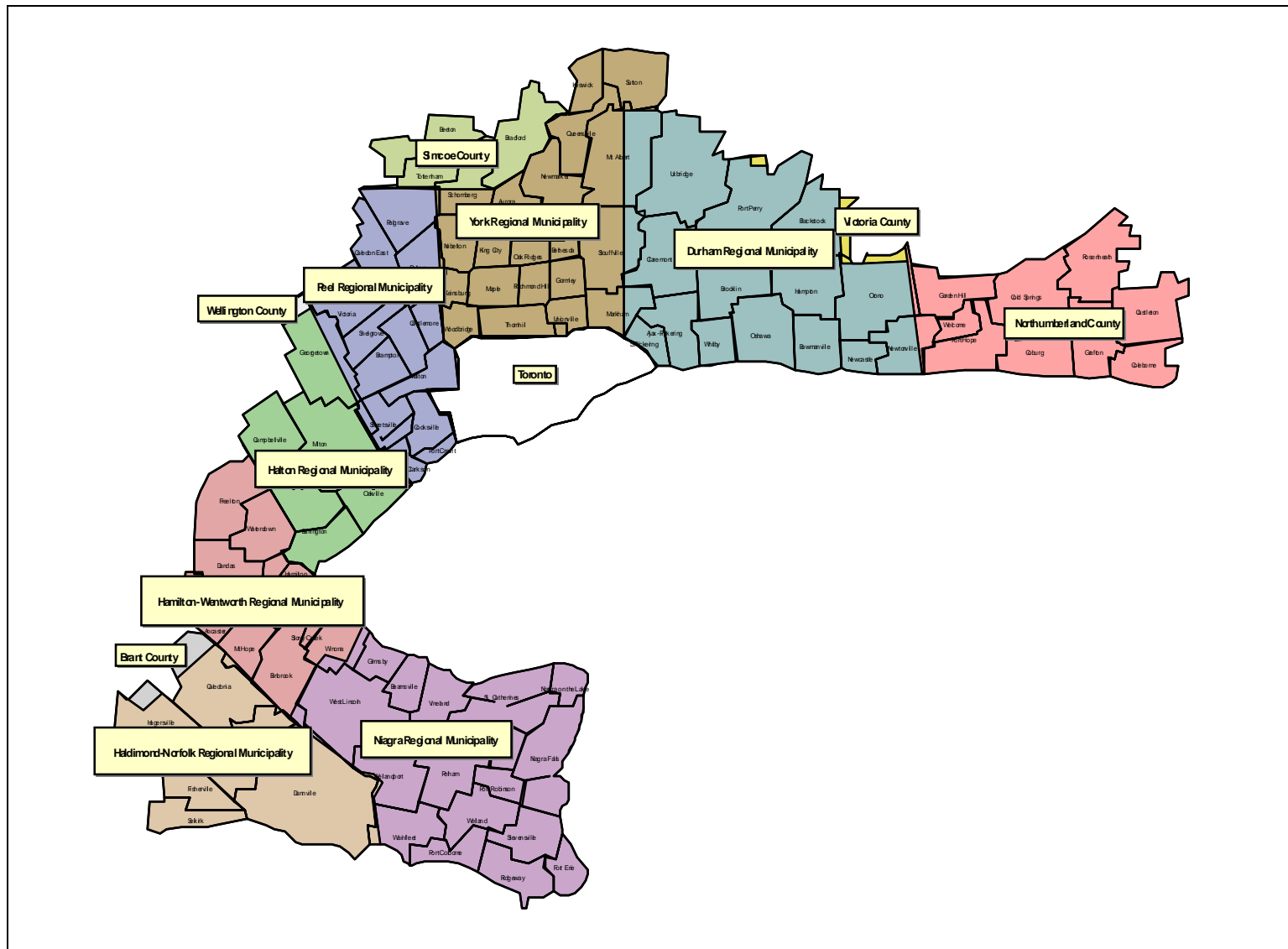
<u>Dates</u>	<u>Activities</u>
October 1999	Initial Planning Document Issued
December 16, 1999	NPA Relief Industry Meetings Begin
Feb. 15, 2000	Special COCUS (By Exchange )
7 March 2000	Special COCUS results to Working Group
27-28 March 2000	Follow-up Meeting (Plan Method and Date)
7 April 2000	J-COCUS from Current & Proposed Service Providers
April – May 2000	Follow up Meetings (J-COCUS results & JCP)
May 2000	NPA Relief Industry Meetings Complete
May 2000	Industry Consensus Report to Regulator
May 2000 - TBD	Regulatory Process / Approval of Plan
*	Apply to NANPA for new NPA
*	NANPA Planning Letter
July, October 2000	Conduct J-COCUS
July, October 2000	J-COCUS Results to Working Group
January, April and July 2001	Conduct J-COCUS
*	Industry Implementation of New NPA (if split option)
*	Industry Implementation of New NPA (if overlay option)
*	Permissive Period
*	10-digit Local Dialing Adjustment Period
*	Mandatory 10-digit Local Dialing
*	First NXX Opened in New NPA

\* Dates for these activities are dependent upon the final approved plan and relief date.

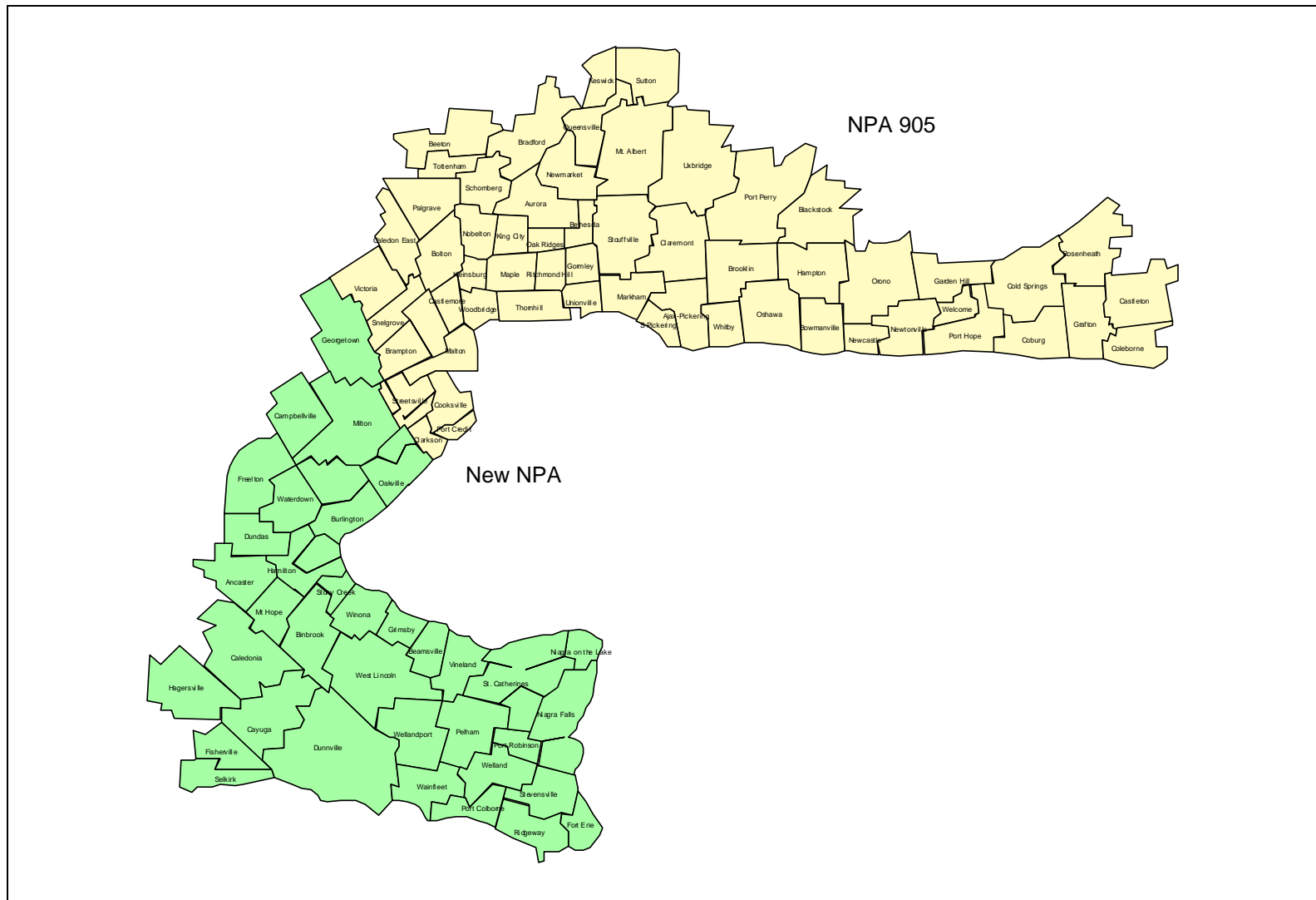


**Figure 6 NPA 905 and NPA 416**

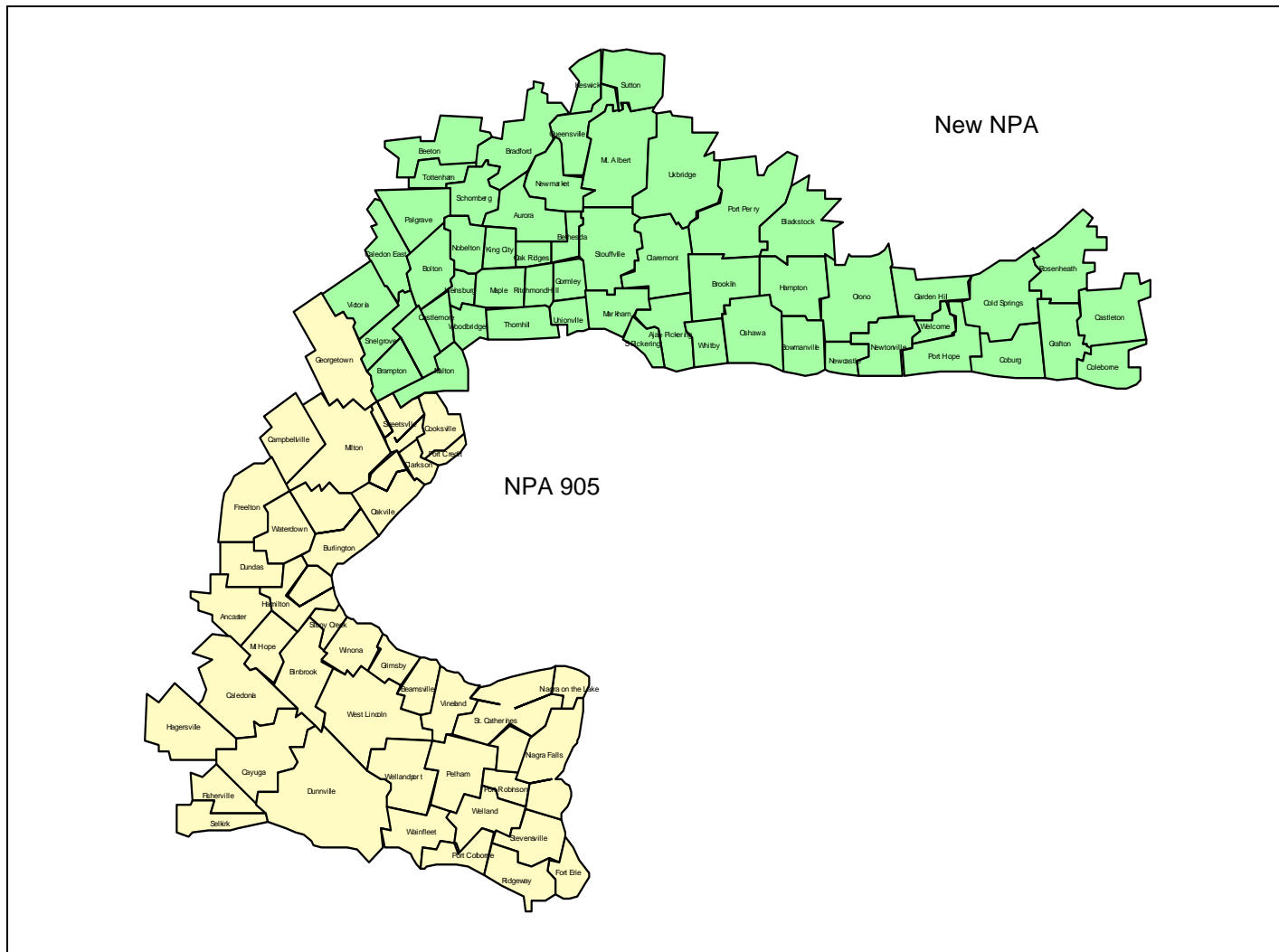




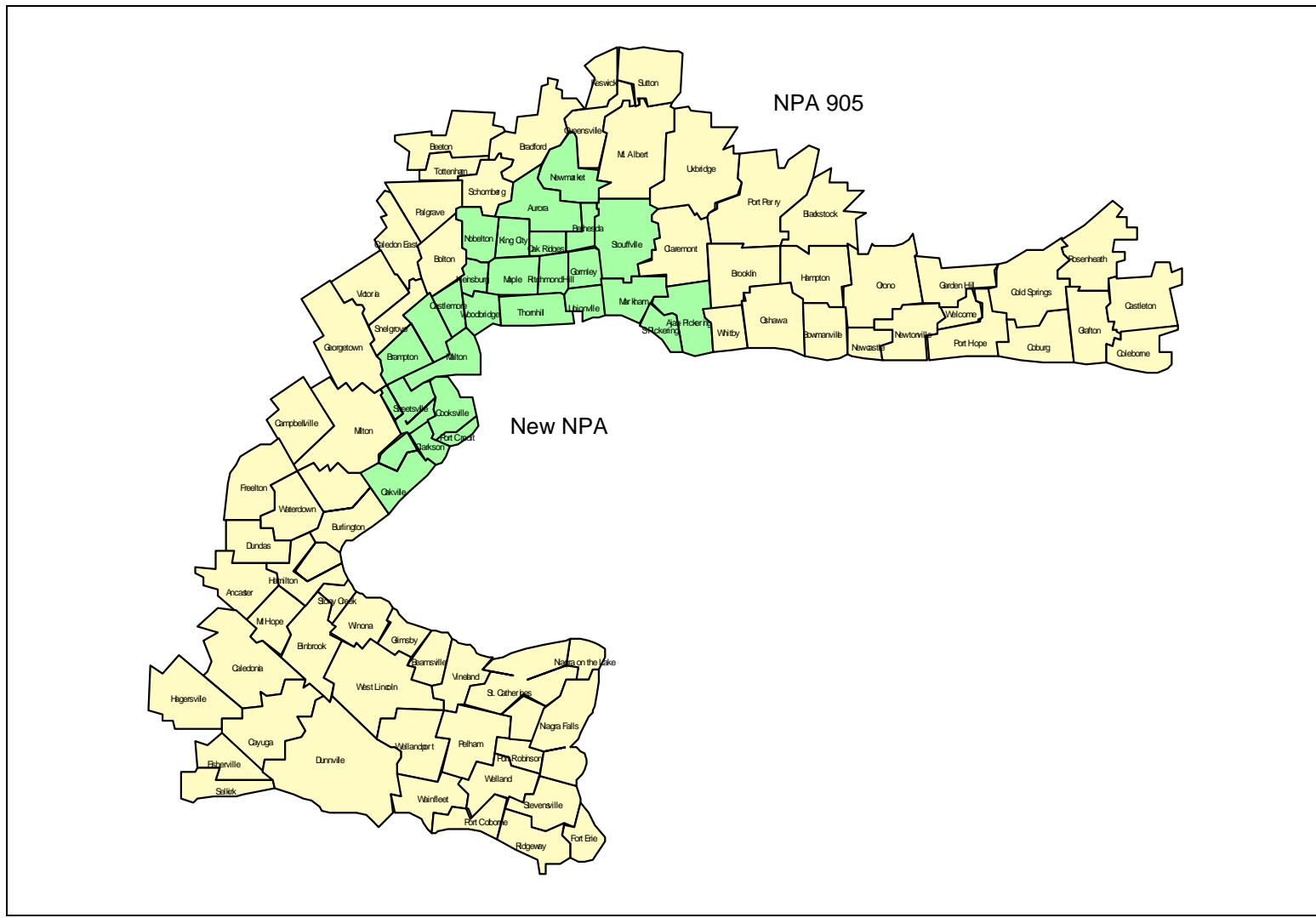
**Figure 7 NPA 905 Municipalities**



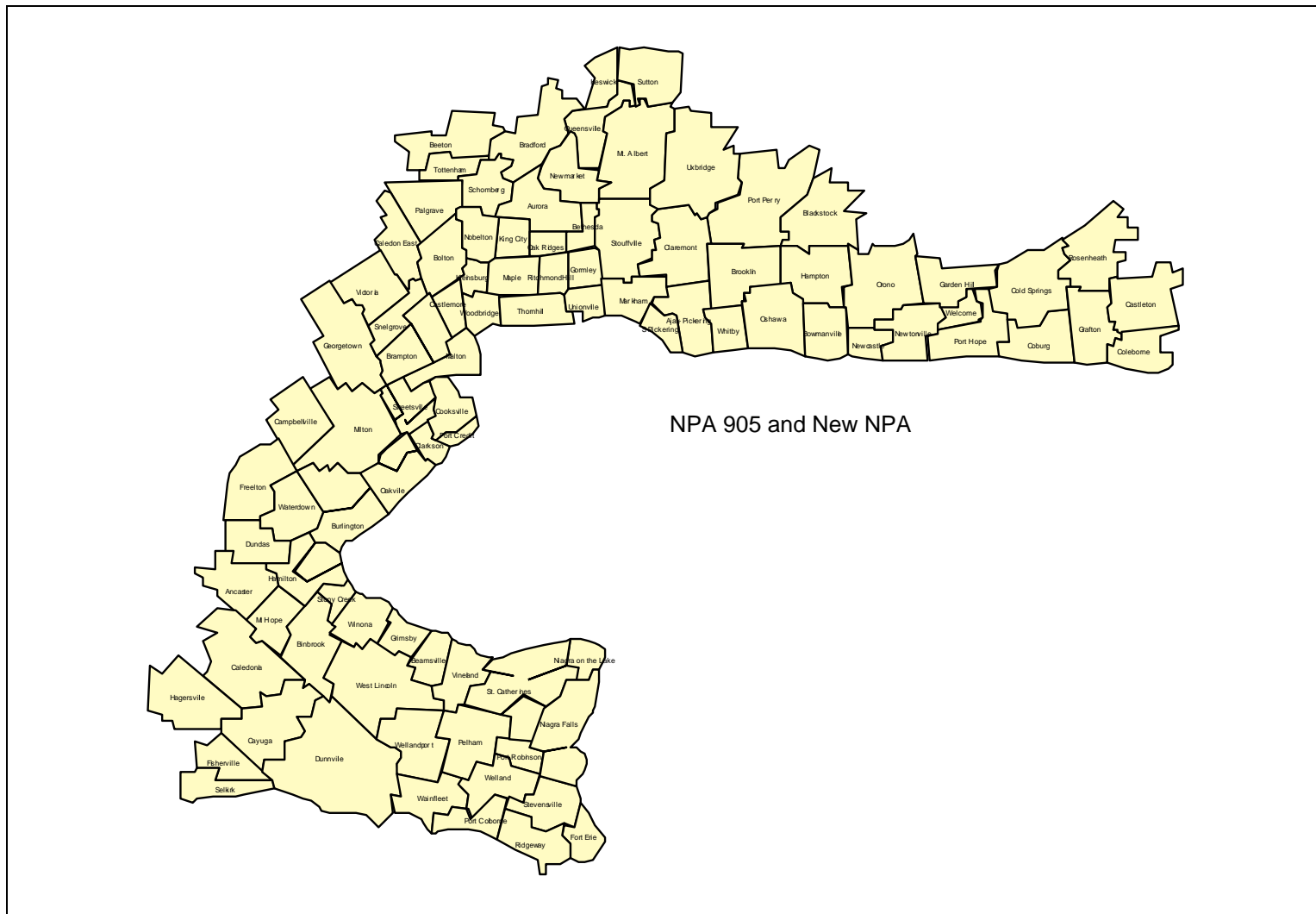
**Figure 8 Municipality Split**



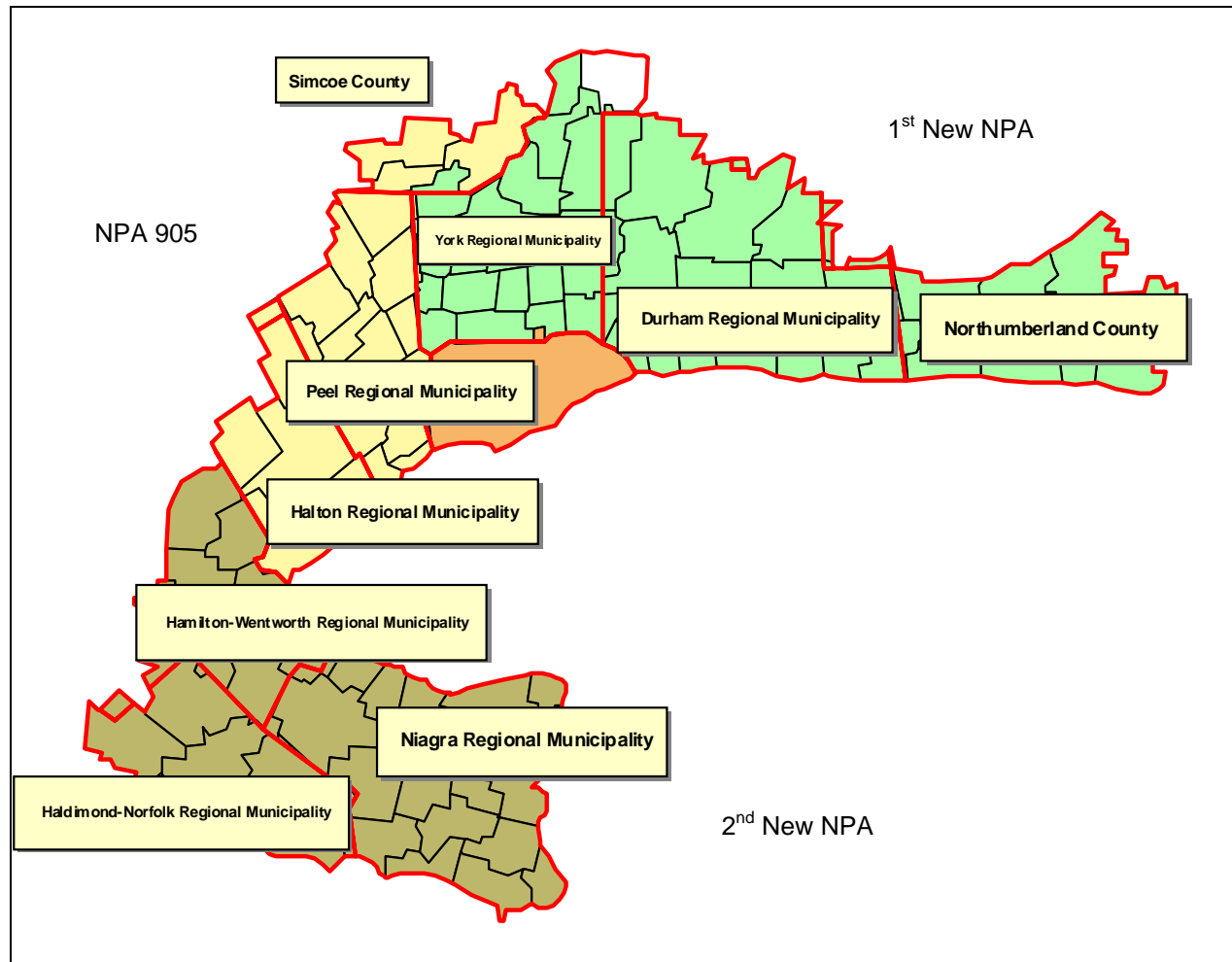
**Figure 9 Municipality Split and Exchanges South of Highway 401**



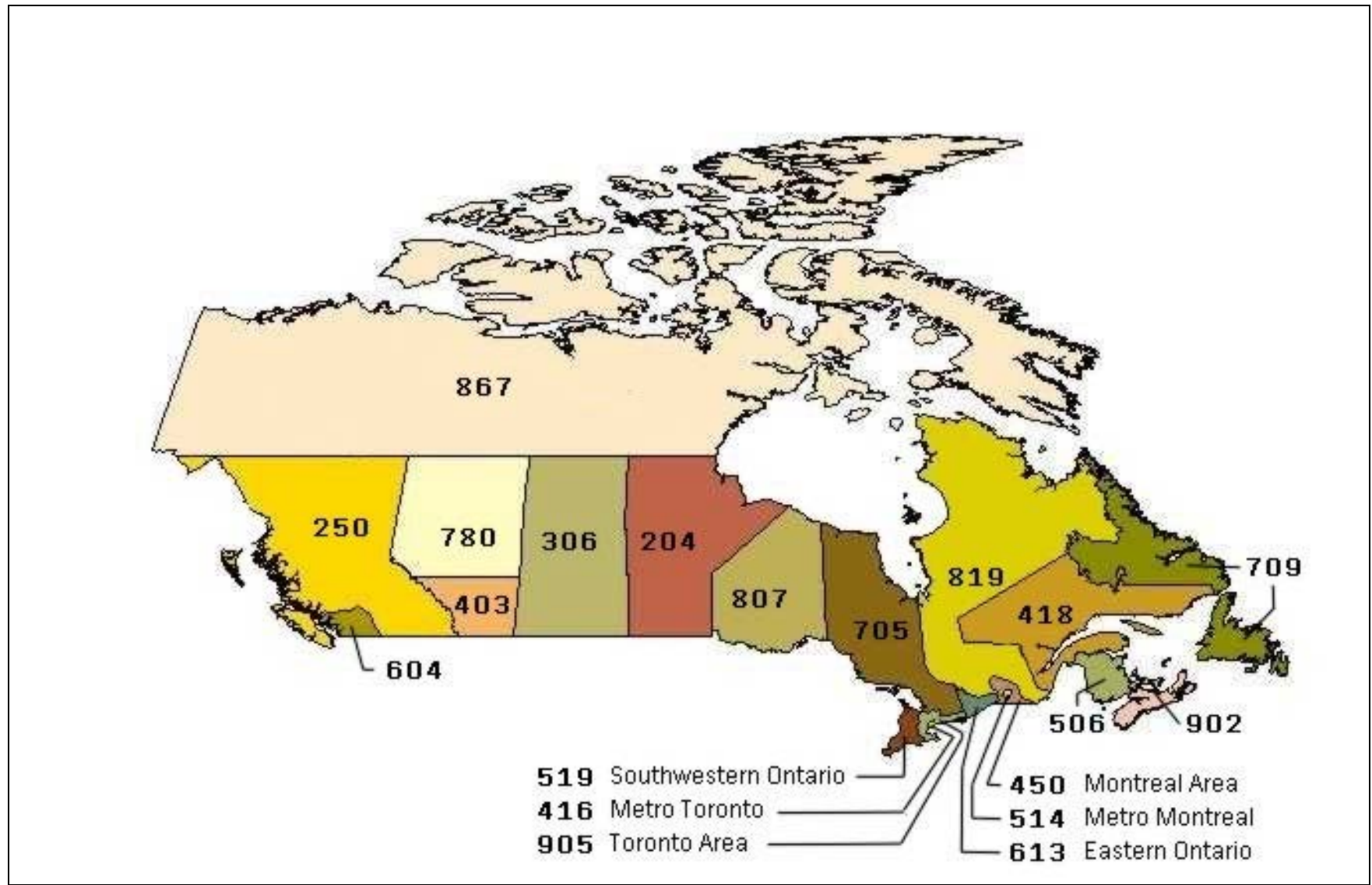
**Figure 10 Split by rings around Toronto**



**Figure 11 Overlay on existing NPA 905 boundaries**



**Figure 12 Three Way Municipality Split**



**Appendix 1 Canadian Geographic NPAs**

# Industry Forums

## NANP

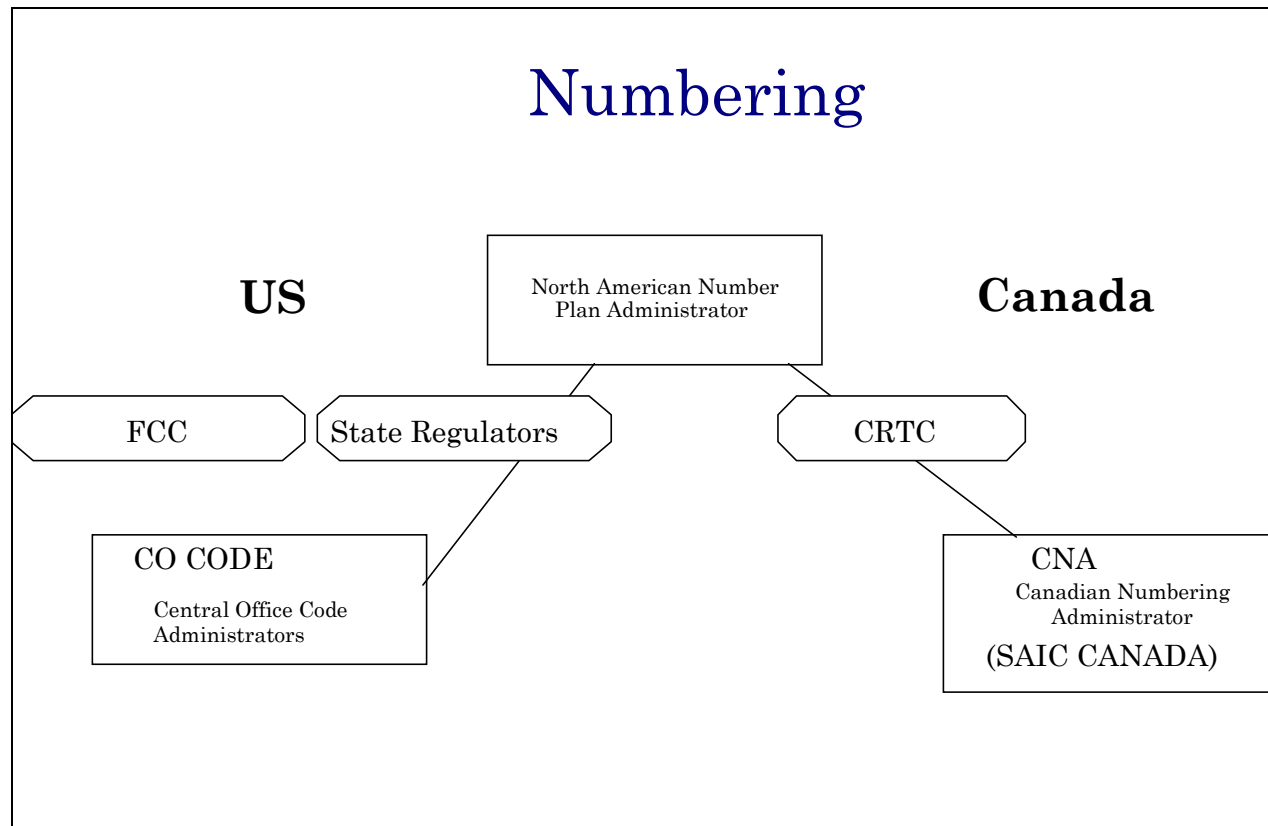


## CANADIAN



### [Appendix 2 Industry Forms](#)





[Appendix 3 Numbering Administration](#)

**Appendix 4 NPA Code Relief Planning & Notification Guidelines**



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A forum of the Carrier Liaison Committee

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## **NPA CODE RELIEF PLANNING & NOTIFICATION GUIDELINES**

These guidelines are reissued in connection with the resolution  
of INC Issue 105

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