

NPA 450/579 Initial Planning Document (IPD)

Version 1.0 – 14 June 2018

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**ACRONYM LIST**

|  |  |
| --- | --- |
| CATF | Consumer Awareness Task Force |
| CNA | Canadian Numbering Administrator |
| CISC | CRTC Interconnection Steering Committee |
| CLEC | Competitive Local Exchange Carrier |
| CLNPC | Canadian Local Number Portability Consortium |
| CO | Central Office |
| CRTC | Canadian Radio-television and Telecommunications Commission |
| CSCN | Canadian Steering Committee on Numbering |
| G-NRUF | General Numbering Resource Utilization Forecast |
| ILEC | Incumbent Local Exchange Carrier |
| IPD | Initial Planning Document |
| ISP | Internet Service Provider |
| JCP | Jeopardy Contingency Plan |
| J‑NRUF | Jeopardy Numbering Resource Utilization Forecast |
| LEC | Local Exchange Carrier |
| LIR | Local Interconnection Region |
| LNP | Local Number Portability |
| NANP | North American Numbering Plan |
| NANPA | North American Numbering Plan Administrator |
| NITF | Network Implementation Task Force |
| NoC | Notice of Consultation |
| NPA | Numbering Plan Area (Area Code) |
| NRUF | Number Resource Utilization Forecast |
| PD | Planning Document |
| PED | Projected Exhaust Date |
| PL | Planning Letter |
| POI | Point of Interconnection |
| PSAP | Public Safety Answering Point |
| RIP | Relief Implementation Plan |
| R-NRUF | Relief Planning Numbering Resource Utilization Forecast |
| RPC | Relief Planning Committee |
| TSP | Telecommunications Service Provider |
| WNP | Wireless Number Portability |
| WSP | Wireless Service Providers |

**Initial Planning Document (IPD) Numbering Plan Area (NPA) 450/579**

**Yellow highlight implies that these sections should be reviewed and updated in any planning document contribution(s).**

# INTRODUCTION

Numbering Plan Area (NPA) 418 and 514, commonly referred to as area codes, were originally assigned to Quebec by AT&T in 1947 as one of the 86 area codes to be used in Canada and the continental United States. In June 1998 NPA 450 was split from NPA 514. NPA 514 was retained for Montreal while NPA 450 become the area code for the area surrounding Montreal. The following table provides a high level summary of the history of area code usage in the area currently served by NPA 450/579 since 1947.

|  |  |
| --- | --- |
| **Year** | **Activity** |
| 1947 | Area code 418 and 514 are assigned to Quebec by AT&T |
| 1998 | Area code 450 is split from 514 to serve the area surrounding Montreal |
| 2010 | New area code 579 overlays 450 in southern Quebec region |

NPA 450/579 consists of 129 Exchange Areas, including some of the rapidly growing Exchange Areas of Granby, Joliette, Laval‑Est, Laval‑Ouest, Longueuil, Pont‑Viau, Sorel, Ste‑Therese, St‑Hyacinthe, St‑Jean, St‑Jerome, St‑Lambert and Valleyfield. The majority of the projected Central Office (CO Code) assignment in NPA 450/579 is forecast to occur in these 13 Exchange Areas. The remaining 116 Exchange Areas are showing forecast assignments at a lower level. A list of the Exchange Areas in NPA 450/579 is provided in Annex B, Table 1.

Approximately 61% of the forecast assignment of CO Codes is a result of the establishment and/or expansion of the Telecommunications Service Providers’ (TSPs) footprints throughout area code 450/579. For the purposes of this document a footprint is the first CO Code assigned to a Code Holder in a unique Exchange Area. The remaining 39% of the forecast assignment of CO Codes is from TSPs’ requirement for additional resources (CO Codes) in a given Exchange Area.

The table below provides a brief overview of recent activities leading to the development of this IPD for NPA 450/579.

| **Date** | **Activity** |
| --- | --- |
| 15 December 2016 | The Canadian Numbering Administrator (CNA) initiated its January 2017 General Numbering Resource Utilization Forecast (G‑NRUF); |
| 3 February 2017 | In Telecom Decision CRTC 2017-38, NPA Code **354** was set aside for relief of NPA 450/579.  **For the purposes of this document the new NPA will be 354.** |
| 29 March 2017 | The CNA published the January 2017 G‑NRUF results which indicated that the Projected Exhaust Date (PED) had advanced to June 2022. |
| 6 April 2017 | During the joint CSCN/RPC/NRUF meeting to discuss the January 2017 results the CNA proposed and the membership agreed to use the results of the July 2017 R‑NRUF and the January 2018 NRUF results before beginning work on the Initial Planning Documents (IPDs) for the new NPAs entering the relief planning window for which NPA 450/579 was one. This approach was suggested as none of the new NPA complexes entering the NPA relief planning window would require transition to 10-digit dialling. |
| 20 September 2017 | The CNA published the July 2017 R-NRUF results which indicated that the PED had moved out to August 2023. |
| 1 March 2018  &  6 March 2018 | The CNA met with Canadian Radio‑television and Telecommunications Commission (CRTC) staff and indicated that NPA 450/579 had entered the relief planning window of 72 months, and noted that in accordance with the Guideline, the CRTC is required to issue a Telecom Notice of Consultation (NoC) for the establishment of a CRTC Interconnection Steering Committee (CISC) ad hoc committee for area code relief planning in Area Code 450/579 for the province of Quebec. |
| 8 March 2018 | The CNA published the January 2018 R-NRUF results which indicated that the PED had advanced to June 2021. |

This IPD is prepared by the CNA in accordance with the *Canadian NPA Relief Planning Guideline*, Version 6.0 dated 20 November 2014 (the Guideline). A copy of the Guideline is available from the Canadian Radio-Television and Telecommunications Commission (CRTC), CRTC Interconnection Steering Committee (CISC), Canadian Steering Committee on Numbering (CSCN) guidelines web page at: <http://www.crtc.gc.ca/cisc/eng/cisf3fg.htm>.

The objective of the NPA Relief Planning process is to ensure that CO Codes and telephone numbers are always available for use by TSPs and their customers in the geographic area requiring relief.

It is very important to closely monitor the CO Code requirements of all existing and prospective CO Code Holders so that relief can be timed to ensure that CO Codes and telephone numbers are always available for service providers and customers.

Various options for providing NPA relief in the NPA 450/579 geographic area are identified in this IPD. Given the magnitude of this undertaking, intercompany commitment and co‑operation are essential throughout the planning, provisioning and implementation stages of the introduction of a new NPA.

# NPA RELIEF PLANNING PROCESS

The NPA Relief Planning process and the roles of the participants (e.g., CRTC, CNA, CISC, Relief Planning Committee (RPC) participants, Interested Parties) for NPA Relief Planning are identified in the Guideline.

To increase public awareness and participation in the NPA Relief Planning process, the CRTC has determined that NPA RPCs will be established as ad hoc committees of the CISC. Generally, a separate ad hoc committee is created to deal with relief in each area code. The CNA, in its function as NPA Relief Planning Coordinator, acts as chair of these ad hoc committees. Meetings and conference calls of the ad hoc NPA RPCs are all open to public participation and are conducted in accordance with the CISC Administrative Guidelines which are available from the CRTC website at: <http://www.crtc.gc.ca/cisc/eng/cag.htm>.

NPA Relief Planning is conducted under the regulatory oversight of the CRTC. Notwithstanding the process detailed in the Guideline, the CRTC may exercise its authority under the *Telecommunications Act* to alter this process at any time. The CRTC has the authority under the *Telecommunications Act* to review, modify and give final approval to the Planning Document (PD) and the Relief Implementation Plan (RIP) developed and submitted by the RPC to the CRTC via the CISC process.

Section 6.1.6 of the Canadian NPA Relief Planning Guideline requires the CNA to create and maintain a distribution list of parties who may be interested in participating in the RPC and to provide them with advance notice of the initial RPC meeting and the release of an IPD.

Any person wishing to participate in the NPA Relief Planning process can contact the CNA and request to be added to the RPC distribution list. More information on how to participate in CRTC public processes is available at: <http://www.crtc.gc.ca/eng/info_sht/g4.htm>.

A summary of Canadian geographic area code relief history is available at: <http://www.cnac.ca/npa_codes/NPA_History.pdf>.

# NPA RELIEF METHODS

The purpose of this section is to identify and briefly describe NPA Relief Methods.

The Guideline states that: “The only Relief Method that should be included in the IPD and PD [Planning Document] is the Overlay Method.”

Under the Overlay Method, a relief NPA Code is superimposed or overlaid on top of part or all of an existing NPA. With overlays, changes to existing customers' telephone numbers are not required. The Overlay Method includes three types of overlays that may be identified and assessed. These types of overlays are detailed in Sections 5.1.1 through 5.1.3 of the Guideline, and are:

* Distributed Overlays - a new relief NPA Code is overlaid on top of all of an exhausting NPA;
* Concentrated Overlays - a new relief NPA Code is overlaid on top of part of an exhausting NPA; and
* Boundary Extension Overlays - the boundary of an existing NPA that has spare capacity is extended to overlay part or all of an exhausting NPA.

# NPA EXHAUST INFORMATION

As indicated in the following table, NRUFs for NPA 450/579 were used to determine PEDs, i.e. the dates when CO Codes in NPA 450/579 would be expected to exhaust.

|  |  |
| --- | --- |
| **NRUF** | **Projected Exhaust Date (PED)** |
| G-NRUF January 2017 | June 2022 |
| R-NRUF July 2017 | August 2023 |
| R‑NRUF January 2018 | June 2021 |

Refer to Annex A, Figures 2 to 8 for graphs of forecast CO Code demand from current and prospective CO Code Holders and charts of Administrative Codes set aside in Area Code 450/579.

# RELIEF OPTIONS

Based on the basic Relief Methods, the following Relief Options were identified and examined in detail:

* Distributed Overlay – One option
* Concentrated Overlay – Five options

The Relief Options identified above were evaluated using the following assumptions:

* The Relief Date for the distributed overlay option will be Q2 2020 (12 months prior to the NPA 450/579 PED of June 2021 identified using the January 2018 R‑NRUF results).
* The Relief Date for the five options that use a concentrated overlay and one combined with a boundary realignment will be Q4 2019 (18 months prior to the NPA 450/579 PED of June 2021 identified using the January 2018 R‑NRUF 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 450/579.

A high level LIR map has been provided for reference purposes in Annex A, Figure 9.

See Annex A, Figures 10 through 15 for diagrams of the Relief Options identified by the CNA.

The boundary extension Relief Method was not examined in detail in this IPD since the neighbouring NPA complexes that could be used for this method are not considered to have excessive spare capacity. NPA 418/581 is already in the relief implementation stage so considering a boundary extension could adversely impact its implementation. NPAs 438/514 and 819/873 may soon be entering the NPA relief planning window so using these complexes would advance the exhaust of these NPAs, possibly creating a Jeopardy Condition.

## Distributed Overlay

One distributed overlay Relief Option was evaluated to provide CO Code relief in the NPA 450/579 geographic area.

The introduction of a distributed overlay would keep the number of NPA Relief Planning areas in Quebec at four.

### Distributed Overlay Option

This Relief Option would overlay NPA 354 over all 129 Exchange Areas comprising the NPA 450/579 area. See Annex A, Figure 10.

With this overlay, NPA 450/579 and NPA 354 would be expected to exhaust in Q1 2036.

## Concentrated Overlay

Five concentrated overlay Relief Options were evaluated to provide CO Code relief in the NPA 450/579 geographic area. These Relief Options are dependent on Local Interconnection Regions (LIRs) and Exchange Areas in NPA 450/579. See Annex A, Figures 11 to 15.

The introduction of a concentrated overlay in the NPA 450/579 complex creates an additional NPA Relief Planning area in Quebec (i.e., an increase from 4 to 5).

To ensure a quantity of CO Codes is available in NPA 450/579 for forecast growth in the remainder of NPA 450/579 all concentrated overlay options will be implemented in Q4 2019 (18 months prior to the PED).

### Concentrated Overlay #1 of NPA 354 on Bell Canada LIRs

This Relief Option would overlay NPA 354 on the Bell Canada LIRs (110 Exchange Areas) and the remaining 19 Exchange Areas would continue to grow using CO Codes from NPA 450/579. See Annex A, Figure 11.

After this concentrated overlay, NPA 450/579 and NPA 354 would be expected to exhaust in Q1 2047 and Q4 2031 respectively.

### Concentrated Overlay #2 of NPA 354 LIRs North of the St. Lawrence

This Relief Option would overlay NPA 354 over the LIRs north of the St. Lawrence and the Valleyfield LIR (59 Exchange Areas) and the remaining 70 Exchange Areas would continue to grow using CO Codes from NPA 450/579. See Annex A, Figure 12.

After this concentrated overlay, NPA 450/579 and NPA 354 would be expected to exhaust in Q4 2023 and Q1 2042 respectively.

### Concentrated Overlay #3 of NPA 354 LIRs South of the St. Lawrence

This Relief Option would overlay NPA 354 over the LIRs south of the St. Lawrence, excluding the Valleyfield LIR (70 Exchange Areas) and the remaining 59 Exchange Areas would continue to grow using CO Codes from NPA 450/579. See Annex A, Figure 13.

After this concentrated overlay, NPA 450/579 and NPA 354 would be expected to exhaust in Q1 2024 and Q1 2057 respectively.

### Concentrated Overlay #4 of NPA 354 Exchange Areas North of the St. Lawrence

This Relief Option would overlay NPA 354 over the 55 Exchange Areas north of the St. Lawrence and the remaining 74 Exchange Areas would continue to grow using CO Codes from NPA 450/579. See Annex A, Figure 14.

This option would split the Bell Canada Valleyfield LIR Exchanges Areas between the north and south regions.

After this concentrated overlay, NPA 450/579 and NPA 354 would be expected to exhaust in Q1 2023 and Q2 2047 respectively.

### Concentrated Overlay #5 of NPA 354 Exchange Areas South of the St. Lawrence

This Relief Option would overlay NPA 354 over the 74 Exchange Areas south of the St. Lawrence and the remaining 55 Exchange Areas would continue to grow using CO Codes from NPA 450/579. See Annex A, Figure 15.

This option would split the Bell Canada Valleyfield LIR Exchanges Areas between the north and south regions.

After this concentrated overlay, NPA 450/579 and NPA 354 would be expected to exhaust in Q3 2024 and Q3 2048 respectively.

# SUMMARY OF RELIEF OPTIONS

|  |  |  |  |
| --- | --- | --- | --- |
| **Relief Option** | **Projected Exhaust Dates** | | **Subsequent Relief Dates** |
| **NPA 450/579** | **NPA 354** |
| Distributed Overlay  Note: NPA 354 in service Q2 2020 | Jun-2021 | Mar-2036 | Mar-2035 |
| Concentrated Overlay #1  (Bell Canada LIRs)  Note**:** NPA 354 in service Q4 2019 | Mar-2047 | Oct-2031 | Mar-2046  Oct-2030 |
| Concentrated Overlay #2  (LIRs North)  Notes**:**   1. NPA 354 in service Q4 2019 2. **With a PED of Oct-2023 for NPA 354/450/579 a subsequent RPC would immediately be required.** | Oct-2023 | Feb-2042 | Oct-2022  Feb-2041 |
| Concentrated Overlay #3  (LIRs South)  Notes**:**   1. NPA 354 in service Q4 2019 2. **With a PED of Jan-2024 for NPA 354/450/579 a subsequent RPC would immediately be required.** | Jan-2024 | Jan-2057 | Jan-2023  Jan-2056 |
| Concentrated Overlay #4  (Exchange Areas North)  Notes**:**   1. NPA 354 in service Q4 2019 2. **With a PED of Jan-2023 for NPA 354/450/579 a subsequent RPC would immediately be required.** | Jan-2023 | Apr-2047 | Jan-2022  Apr-2046 |
| Concentrated Overlay #5  (Exchange Areas South)  Notes**:**   1. NPA 354 in service Q4 2019 2. **With a PED of Aug-2024 for NPA 354/450/579 a subsequent RPC would immediately be required.** | Aug-2024 | Aug-2048 | Aug-2023  Aug-2047 |

# COMPARATIVE ASSESSMENT OF RELIEF OPTIONS

The CNA has provided the template below to assist the RPC with their comparative assessment of the relief identified in Section 5 of the IPD. On review of the IPD/PD the RPC may modify the criteria and will complete the table.

The RPC identified X Relief Options in Section 5 of this document. A Pro, Neutral or Con (P, N or C) rating was established for each Relief Option for each of the following attributes. The results are listed in the table below the list of attributes.

1. NPA Code Conservation – quantity of new NPAs required in NPA 450/579 within the next XX years after relief (20XX – 20XX) (P = 0 new NPAs; N = 1 new NPA; C = 2 or more new NPAs)
2. Number of separate Relief Planning areas in Quebec in the long term (P = decrease; N = stays same; C = increase)
3. Level of Carrier Costs – e.g., network implementation, customer awareness (P = Low; N = Medium; C = High)
4. Length of implementation window i.e., length of time for Carriers to implement relief NPA (P = longest; N = medium; C = shortest)
5. Longevity – the length of time between this relief and subsequent relief activity in NPA 450/579 (e.g., a new area code) (P = 15 or more years; N = 9 through 14 years; C = within 8 years)
6. Established Geographic Identities – changes in boundaries of existing NPAs (P = none; C = 1 or more existing NPAs affected)
7. New Geographic Identities – boundaries of new NPA align with boundaries of known areas (e.g., existing NPA areas, provinces) or identifiable geographical features (e.g., rivers, islands) (P = aligns with existing NPA boundaries; N = aligns with geographical features but not with existing NPA boundaries; C = aligns with neither existing NPA boundaries, nor identifiable geographical features)
8. Potential maximum quantity of NPAs in an Exchange Area in the next 10 years after relief (20XX-20XX) (P = 3 NPA; N = 4 NPAs; C = 5 NPAs)
9. Does the option provide potential direction(s) for future relief in NPA 450/579 (P = Yes; N = Unknown; C = No)

| **Relief Option**  **Description** | **Pro, Neutral or Con for Each Attribute** | | | | | | | | | **Rating** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **I** |
| Distributed Overlay |  |  |  |  |  |  |  |  |  |  |
| Concentrated Overlay #1  (Bell Canada LIRs) |  |  |  |  |  |  |  |  |  |  |
| Concentrated Overlay #2  (LIRs North) |  |  |  |  |  |  |  |  |  |  |
| Concentrated Overlay #3  (LIRs South) |  |  |  |  |  |  |  |  |  |  |
| Concentrated Overlay #4  (Exchange Areas North) |  |  |  |  |  |  |  |  |  |  |
| Concentrated Overlay #5  (Exchange Areas South) |  |  |  |  |  |  |  |  |  |  |

It should be noted that none of the options require Exchange Area boundary changes.

If P, N and C are assigned a weighting of +1, 0 and -1, respectively, then analysis of the above table gives the highest rating of X points to Relief Option X, and the next highest rating of X points to Relief Option X and the subsequent ratings of X for Relief Options X and X and, finally, X for Relief Options X and X.

Relief Option X has the highest rating when assessed based on the above criteria.

## Assessment

To be completed by RPC.

# DIALLING CHANGES FOR LOCAL CALLS

Currently 10-digit dialling is mandatory for local calls originating within area code 450/579. Local dialling plans will not change with this relief.

The addition of the new NPA 354 will not affect the dialling plan for long-distance calls originating within NPA 354/450/579.

# PROPOSED SCHEDULE

The CNA has provided the template below to assist the RPC with the development of the relief implementation schedule.

The RPC submits the following schedule for NPA 450/579 relief based on the recommendations contained in this PD and the current PED of June 2021. The RPC will monitor the PED, and if it changes significantly in the future, the RPC will assess the situation and, if necessary, submit recommendations including a revised schedule to the CRTC for consideration and approval.

**RELIEF IMPLEMENTATION SCHEDULE**

**For an Overlay of new NPA 354 over NPA 450/579**

To be completed by RPC.

| **Item** | **Task or Event** | **PRIME** | **START** | **END** |
| --- | --- | --- | --- | --- |
| 1 | CNA identifies NPA exhaust of June 2022 and notifies by e-mail CRTC staff, CSCN, North American Numbering Plan Administrator (NANPA) & CISC that the NPA will exhaust within the future six year time period | CNA |  | 06-Apr-17 |
| 2 | CNA conducts initial R-NRUF and releases results indicating the PED has moved out to August 2023 | CNA | 23-Jun-17 | 20-Sep-17 |
| 3 | CRTC issues Telecom Notice of Consultation regarding establishment of an ad hoc Relief Planning Committee | CRTC |  |  |
| 4 | RPC Chair starts preparing and submitting RPC Chair Reports to the CISC, on an as required basis | RPC Chair |  |  |
| 5 | CNA issues January 2018 R-NRUF results indicating the PED has advanced to June 2021 | CNA |  | 20-Mar-18 |
| 6 | CNA develops and distributes Initial Planning Document (IPD) to RPC | CNA | 06-Apr-17 | 14-Jun-18 |
| 7 | CNA announces the date for the initial NPA Relief Planning face-to-face meeting & requests contributions | CNA |  | 14-Jun-18 |
| 8 | RPC participants review IPD & submit contributions to RPC | RPC | 14-Jun-18 | 12-Sep-18 |
| 9 | CNA chairs initial RPC meeting to start development of PD, RIP & Planning Letter (PL), & schedules future meetings/conference calls including creation & consultation with CATF and NITF | CNA, RPC | 12-Sep-18 | 13-Sep-18 |
| 10 | CNA chairs subsequent RPC meetings/conference calls to finalize PD & RIP | CNA, RPC | 14-Sep-18 |  |
| 11 | CNA forwards the PD and RIP to the CISC and CRTC for approval | CNA |  |  |
| 12 | Special Types of Telecommunications Service Users (911 Public Safety Answering Points (PSAPs), alarm companies, Internet Service Providers (ISPs), paging companies, etc.) to identify any concerns to RPC & CRTC | Special Users |  |  |
| 13 | CRTC issues Telecom Decision approving the Relief Method, Relief Date, New NPA & RIP | CRTC |  |  |
| 14 | CNA obtains relief NPA from NANPA | CNA |  |  |
| 15 | RPC develops the PL | RPC |  |  |
| 16 | Task Forces, TSPs and users implement relief (starts upon CRTC approval of RIP and ends on Relief Date) | TSPs |  |  |
| 17 | All TSPs to develop and file individual consumer awareness programs with the CRTC (may be done collectively by Telecommunications Alliance) (starts upon CRTC approval of RIP) | TSPs |  |  |
| 18 | CNA issues media release (in coordination with TSPs and/or Telecommunication Alliance) (may start upon CRTC approval of RIP) | CNA |  |  |
| 19 | CNA submits PL and RIP to NANPA | CNA |  |  |
| 20 | NANPA receives and posts PL to NANPA website (within 2 weeks of receipt from the CNA) | NANPA |  |  |
| 21 | All TSPs implement consumer awareness activities (starts upon filing of Consumer Awareness Programs with the CRTC and is completed on the Relief Date) | TSPs |  |  |
| 22 | All TSPs to notify all customers (including residence, business & special customers) of the new overlay NPA (may start upon the filing of Consumer Awareness Programs with the CRTC) | TSPs |  |  |
| 23 | TSPs to submit Progress Report #1 to Network Implementation Task Force (NITF) and Consumer Awareness Task Force (CATF) (starts after completion date for all TSPs to notify their customers and requires 2 weeks) | TSPs |  |  |
| 24 | NITF and CATF develop & submit Progress Report #1 to RPC (linked to TSP reports to NITF and CATF) | NITF & CATF |  |  |
| 25 | RPC submits Progress Report #1 to CRTC staff (linked to NITF and CATF reports) | RPC |  |  |
| 26 | iconectiv TRA database updates to add Exchange Areas to new overlay NPA (starts on the date that the PL is posted to the NANPA web site and must be completed by 6 months prior to the Relief Date) | iconectiv TRA |  |  |
| 27 | All Telecommunications Service Users (including Special Users 911 PSAPs, alarm companies, ISPs, paging companies, etc.) to implement changes to their telecom equipment & systems to accommodate the new NPA (starts upon CRTC approval of RIP and ends on the Relief Date) | Telecom Service Users |  |  |
| 28 | Payphone Providers Reprogram Payphones (starts upon CRTC approval of RIP and ends on the Relief Date) | Payphone Providers |  |  |
| 29 | TSPs and database owners/operators to modify systems and industry databases (starts upon CRTC approval of RIP and ends on the Relief Date) | TSPs & Database Owners |  |  |
| 30 | Operator Services & Directory Assistance Readiness (starts upon CRTC approval of RIP and ends on the Relief Date) | TSPs |  |  |
| 31 | Directory Publisher Readiness for overlays (ability to identify the NPA in telephone numbers in the directory published after the Overlay NPA is activated) (starts upon CRTC approval of RIP and ends on the Relief Date) | Directory Publishers |  |  |
| 32 | 9-1-1 Systems and Databases Readiness (starts upon CRTC approval of RIP and ends on the Relief Date) | PSAPS, 9 1 1 Service Providers & TSPs |  |  |
| 33 | Network Systems & Equipment Readiness (starts upon CRTC approval of RIP and ends on the Relief Date) | TSPs |  |  |
| 34 | Service Order & Business System Readiness (starts upon CRTC approval of RIP and ends on the Relief Date) | TSPs |  |  |
| 35 | International Gateway Switch Translations Readiness for new NPA (starts upon CRTC approval of RIP and ends on the Relief Date) | Int’l TSPs |  |  |
| 36 | Canadian Local Number Portability Consortium (CLNPC) Database Readiness for new NPA (starts upon CRTC approval of RIP and ends on the Relief Date) | CLNPC & NPAC |  |  |
| 37 | Toll Free SMS Database Readiness for new NPA (starts upon CRTC approval of RIP and ends on the Relief Date) | Toll TSPs |  |  |
| 38 | TSPs apply for Test CO Codes in new NPA (applications may be submitted no more than 6 months and no less than 66 days prior to the start date for the Inter-Carrier Testing Period) (Section 7.16.4 Canadian RP GL) | TSPs |  |  |
| 39 | Develop Inter-Carrier Network Test Plans and prepare for testing (individual TSPs to make arrangements in accordance with interconnection agreements) (may start upon CRTC approval of RIP and must be completed by start date for the Inter-Carrier Testing Period) | NITF & TSPs |  |  |
| 40 | All international and domestic TSPs must activate the new NPA in their networks by the start date for the Inter-Carrier Testing Period | TSPs |  |  |
| 41 | Activation date for Overlay NPA Test CO Codes and Test Numbers in network (should be completed by the start date for the Inter-Carrier Testing Period) | TSPs |  |  |
| 42 | Inter-Carrier Testing Period (subject to Inter-Carrier Network Test Plans) (starts about 3 months prior to the Relief Date, and ends about 1 month after the Relief Date) | NITF & TSPs |  |  |
| 43 | TSPs to submit Progress Report #2 to NITF and CATF (starts on commencement of Inter-Carrier Testing Period) | TSPs |  |  |
| 44 | NITF and CATF develop & submit Progress Report #2 to RPC (linked to TSP reports to NITF and CATF) | NITF & CATF |  |  |
| 45 | RPC submits Progress Report #2 to CRTC staff (linked to NITF and CATF reports) | RPC |  |  |
| 46 | Relief Date (earliest date when CO Codes in new NPA may be activated) |  |  |  |
| 47 | TSPs submit Final Report to CATF and NITF (starts on Relief Date and provides 2 weeks for preparation & submission) | TSPs |  |  |
| 48 | NITF and CATF develop & submit Final Progress Report to RPC (linked to TSP reports to NITF and CATF) | NITF & CATF |  |  |
| 49 | The RPC submits Final Progress Report to CRTC staff (linked to NITF and CATF reports) | RPC |  |  |
| 50 | TSPs disconnect Test Codes & Numbers, and submit Part 1 form to return Test Codes (starts 1 month after Relief Date and allows 1 month for completion) | TSPs |  |  |
| 51 | RPC Chair submits, to the CISC, the final RPC Chair report indicating that theNPA 450/579 ad hoc RPC is no longer required | RPC Chair |  |  |

# JEOPARDY CONTINGENCY PLAN (JCP)

The CNA has provided the template below to assist the RPC with the development of the Jeopardy Contingency Plan (JCP).

The RPC has developed the following JCP for inclusion in the PD for NPA 450/579. This JCP is based on the example contained in Appendix F to the *Canadian NPA Relief Planning Guideline*.

This JCP shall remain in effect until superceded by a CRTC-approved JCP, the Jeopardy Condition is suspended, or 66 days prior to the Relief Date.

The following measures shall be implemented in NPA 450/579 while a Jeopardy Condition is in effect.

During a Jeopardy Condition, CO Code Applicants shall submit all CO Code applications and related correspondence for the Jeopardy NPA to CRTC staff in addition to the CNA. The CNA shall only assign CO Codes from the exhausting NPA to a CO Code Applicant when instructed by CRTC staff.

1. Carriers and/or Telecommunications Service Providers (TSPs):
   1. shall age disconnected residential wireline telephone numbers for a maximum of two months;
   2. shall age disconnected wireless telephone numbers for a maximum of three months;
   3. shall age disconnected business wireline telephone numbers for a maximum of six months. Under special circumstances, the six month aging limit for business telephone numbers may be extended to twelve months, if required, to accommodate local directory publishing dates for high volume call-in applications (e.g., heavily advertised local business numbers such as radio talk shows, food ordering services, ticket sales, chat lines), or for numbers associated with public service emergency applications or for numbers advertised in directories for which customers have requested reference of calls;
   4. shall return all CO Codes that are not being used, nor intended to be used to directly serve customers to the assignment pool within two months (e.g., plant test codes);
   5. should work towards, and encourage existing customers, to either activate or return the reserved numbers to bring the reserved quantity down to a maximum of 10% of the quantity of numbers In-Service for that customer;
   6. shall not allow the quantity of reserved numbers to be increased by new reservation requests by existing customers to more than 10% of the quantity of numbers in service for that customer. In the case of new customers, number reservations shall be limited to 10% of the total quantity of telephone numbers being placed into service for that customer;
   7. shall, within 45 days from the date that the CNA declares a Jeopardy Condition submit a Part 1 Form for each remaining reserved CO Code either returning the reserved CO Code to the CNA or requesting assignment of the reserved CO Code. Once the 45-day period has elapsed, the CNA shall make available for general assignment all CO Codes that are still reserved and have not been applied for as assignments on a Part 1 Form received by the CNA. Within 60 days from the date that the CNA declares a Jeopardy Condition, the CNA shall report to CRTC staff and the RPC as to how many of these codes have been assigned or made available for general assignment;
   8. shall not be permitted to obtain a new CO Code reservation;
   9. shall place all CO Codes assigned prior to the Jeopardy Condition being declared In-Service within three months of the effective date for CO Code activation in the network, or within three months of the date that the Jeopardy Condition was declared. If the CO Code is an Initial Code and the CO Code Holder can demonstrate that, due to circumstances beyond its control, the In-Service date has been delayed beyond the applicable timeframe, then the CNA may grant an extension of up to two months to the In-Service date. The CNA shall initiate reclamation procedures for all CO Codes that have not been placed In-Service within these timeframes unless CRTC staff provides a further extension.
2. For new applications for Initial Codes, each CO Code Holder shall certify that the CO Code will be activated in the network and placed In-Service within four months of the date of application for the Code. If the CNA does not receive a Part 4 Form within this timeframe, confirming that the CO Code has been placed In-Service, the CNA will initiate reclamation measures. If the CO Code Holder can demonstrate that, due to circumstances beyond its control, the In-Service date has been delayed not more than six months from the original application date, then the CNA may grant an extension to the In-Service date, so long as the In-Service date is not more than six months beyond the original application date. If the In-Service date has been delayed more than six months from the original application date, then the CNA shall reclaim the Code unless CRTC staff provides a further extension.
3. When applying for an Additional Code for Growth, a CO Code Holder who is submitting a Part 1 Form and Appendix B worksheet shall also submit a completed Supplementary Form for a Growth CO Code Application (attached) which certifies and/or provides the following information for the specific switching entity/POI and Exchange Area when the Growth CO Code is being requested in a Jeopardy Condition:
   1. certification that all held telephone numbers have been released;
   2. certification that reserved numbers do not exceed ten percent of the total quantity of numbers as defined in Appendix G of the Canadian CO Code (NXX) Assignment Guideline;
   3. certification that each reseller/dealer had been advised of the Jeopardy Condition and the requirement that they would only be allocated additional numbers during the Jeopardy Condition on the provision to the CO Code Holder of written confirmation that their number inventory has been reduced to an amount less than two times the highest quantity of customer numbers assigned in any month during the previous 12 months. Additional numbering resources will only be provided by the CO Code Holder to the reseller/dealer to the extent that the reseller's/dealer's inventory can only increase up to a maximum of three months' inventory;
   4. confirmation that the Part 1 form submitted with the application has the Jeopardy Condition box in section 1.6 checked to certify that the existing CO Codes are projected to exhaust within 4 months of the date of application and that the months-to-exhaust is documented on an Appendix B submitted to the CNA;
   5. a completed Telephone Number Utilization Report for the applicable switching entity signed by both a company officer and the company’s authorized representative;
   6. confirmation that the requested Growth CO Code was forecasted in the most recent NRUF or an explanation as to why it was not is attached; and
   7. confirmation that the requested Growth CO Code will be placed In-Service within four months of the date of assignment.
4. Any CO Codes for growth assigned after the implementation of this JCP must be activated in the network and placed In-Service within four months of assignment. In the event that a CO Code Holder is unable to place the CO Code In-Service within four months of the date of assignment, the CO Code Holder must return the assigned CO Codes or submit a written request for extension to the CNA. Such written requests must include documentation explaining the reason(s) for the missed date and proposing the new In-Service date. If the explanation includes reasons beyond the control of the CO Code Holder, the CNA may extend the In-Service date a maximum of one month. If the CO Code Holder does not place the CO Code In-Service within the one-month extension, the CNA shall initiate the reclamation process at the end of the one-month extension unless CRTC staff provides a further extension.
5. A Carrier that has multiple switching entities within an Exchange Area shall examine the possibility of, and implement where feasible, number sharing between those switches as a potential method to delay requirements for additional CO Codes.
6. The CNA will request two versions (two separate worksheets (Form 1 and Form 2)) of the J-NRUF input from all current and prospective CO Code Holders quarterly until three (3) months before relief is provided.
   1. The forecasted quantities in Form 1 should be the same as or lower than the last R-NRUF input submitted, prior to declaration of a Jeopardy Condition. CO Code Holder forecasts may reflect an increase in demand in the period subsequent to the Relief Date.
   2. Form 2 will reflect the actual demand required by the CO Code Holder's current business plan and will be provided for information purposes only.
7. The CNA will compare the initial J-NRUF input to the recent NRUF inputs, to assess forecasting trends. The CNA shall monitor all inputs and shall test them for reasonableness in consultation with the Carrier. If the CNA is dissatisfied with the reasonableness, or the rationale provided for the deviations, then the matter will be referred to the CRTC staff.
8. The CNA will request subsequent J-NRUF input from all current and prospective CO Code Holders quarterly until 3 months before relief is provided. If one or more R-NRUFs have already been conducted, and depending on the severity of the Jeopardy Condition, the CNA may defer a J-NRUF by up to two months if such a deferral brings the timing of that J‑NRUF and subsequent J-NRUFs into alignment with other NRUFs that are conducted at 12, 6 or 3 month intervals. Subsequent J-NRUF input will be compared with the initial J‑NRUF input to evaluate the effectiveness of the JCP. The CNA shall monitor all J-NRUF inputs and shall test them for reasonableness in consultation with the Telecommunications Service Providers. If the CNA is dissatisfied with the reasonableness, or the rationale provided for the changed forecasts, then the matter will be referred to CRTC staff.
9. A CO Code Applicant must have submitted a completed J-NRUF to the CNA before the CNA may assign a CO Code to that CO Code Applicant.
10. If a CO Code applicant wishes to request more CO Codes than it identified in its most recent J NRUF, the CO Code Applicant should discuss the matter with the CNA. If the CO Code Applicant wishes to proceed with the request, the CO Code Applicant will forward the request and revised forecast to CRTC staff and the CNA for consideration.
11. The CO Codes identified in the NPA CO Code Inventory Chart as “Assignable CO Codes in a Jeopardy Condition” will be assigned in the order determined by the RPC after all CO Codes which are “Available for Assignment as of [day month year] have been assigned.
12. After each J-NRUF, the CNA shall provide CRTC staff, the RPC and CSCN participants with a report providing an updated NPA CO Code Inventory Chart for the NPA in jeopardy as well as the aggregate results of the most recent J-NRUF.
13. Exceptional issues or concerns may be referred by the CNA, or by individual entities (with a courtesy copy to the CNA), to the CRTC staff for resolution.
14. In a situation where the Relief Date is on or after the PED, the quantity of CO Codes that may be assigned to a CO Code Applicant prior to the end of the Jeopardy Condition (i.e., 66 days prior to the Relief Date) shall be limited to the quantity forecasted by the CO Code Applicant in its most recent NRUF forecast submitted prior to the Jeopardy Condition being declared by the CNA (if no previous NRUF was submitted, then the previous forecast will be deemed to be zero codes). When making requests to obtain CO Codes prior to the end of the Jeopardy Condition (i.e., 66 days prior to the Relief Date), the CO Code Applicant may change the Exchange Area or the month when the CO Code assignment is required, provided a new J-NRUF and explanation accompanies the application. The control imposed by this option may be relaxed if subsequent J-NRUFs defer the PED to after the Relief Date. CO Codes that become available for assignment due to future reduced demand from other current and prospective CO Code Holders may be assigned at the discretion of CRTC staff.
15. If the CNA determines that the implementation of the JCP has not extended the Projected Exhaust Date of the NPA beyond the Relief Date, the CNA will consult with CRTC staff and further CO Code conservation and assignment procedures may be ordered by the Commission (e.g., rationing, lottery, etc.).

Supplementary form for a Growth CO Code Application – Page 1 of 2 – Telephone Number Utilization Report

This form is required with each request for an Additional Code for Growth in an NPA where a Jeopardy Condition is in effect. It should be submitted to the CNA together with the Part 1 and Appendix B forms that are required for an application for an Additional Code for Growth. See the Part 1 form for information on how and where to submit the form.

I hereby certify that the following information is true and accurate to the best of my knowledge and has been prepared in accordance with Special Conservation Procedures for a Jeopardy Condition contained in the Canadian NPA Relief Planning Guideline or the applicable approved Jeopardy Contingency Plan.



Name & Signature of Authorized Representative of Code Holder Title Date



Name & Signature of Company Officer (see item 3 of this JCP) Title Date

Contact information: Entity Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Contact Name: \_\_\_\_\_\_\_\_\_\_\_\_\_

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ City, Province, Postal Code: \_\_\_\_\_\_\_\_\_\_\_\_\_

Telephone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Facsimile: \_\_\_\_\_\_\_\_\_\_\_\_\_

E-mail: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Switch Identification (Switching Entity/POI) CLLI: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Exchange Area: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For the above Switch Identification and Exchange Area for which a Growth CO Code is requested:

I certify that all held telephone numbers have been released

I certify the total quantity of reserved numbers does not exceed ten percent (10%) of the total quantity of telephone numbers as defined in Appendix G of the Canadian CO Code (NXX) Assignment Guideline

I certify that each reseller/dealer has been advised of the Jeopardy Condition and the requirement that they would only be allocated additional numbers during the Jeopardy Condition on the provision to the CO Code Holder of written confirmation that their number inventory has been reduced to an amount less than two (2) times the highest quantity of customer numbers assigned in any month during the previous twelve (12) months. Additional numbering resources will only be provided by the CO Code Holder to the reseller/dealer to the extent that the reseller's/dealer's inventory can only increase up to a maximum of three months' inventory.

The Part 1 form submitted with the application has the Jeopardy Condition box in section 6 checked (this certifies that the existing CO Codes are projected to exhaust within four (4) months of the date of the application or within the period specified in an approved Jeopardy Contingency Plan, and that the months-to-exhaust is documented on an Appendix B submitted to the CNA).

The Telephone Number Utilization Report on page 2 of this form has been completed.

The requested Growth CO Code was forecasted in the most recent NRUF, or an explanation as to why it was not is attached.

The requested Growth CO Code will be placed In-Service within four (4) months of the date of assignment.

**Supplementary Form for a Growth CO Code Application – Page 2 of 2 – Telephone Number Utilization Report**

Use Arial 9 to complete this form. (Note: If the spreadsheet below does not show on your display, please change the Work view to "Print Layout" or "Reading Layout")



Remarks: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**NPA 450/579 CO Code Inventory Chart**

The following chart and the instructions it contains will apply in NPA 450/579 in a Jeopardy Condition.

The chart below lists quantities of CO Codes unassignable prior to a Jeopardy Condition, CO Codes that become assignable in a Jeopardy Condition, and CO Codes in NPA 450/579 assigned and In‑service as of 14 June 2018. The CO Codes that become assignable in a Jeopardy Condition shall only be made available for assignment when all other available CO Codes have been assigned in the order listed below.

|  |  |  |
| --- | --- | --- |
|  |  | **Quantity** |
| **A** | **Total CO Codes in NPAs 450/579** **(NXX format)** | **1600** |
|  | | |
| **B** | **CO Codes unassignable prior to a Jeopardy Condition** |  |
|  | N11 Service Codes (211, 311, 411, 511, 611, 711, 811, 911) | 16 |
|  | Special Use Codes (555, 950 & 976) | 6 |
|  | Home NPA Code(s) (450, 579) | 4 |
|  | Current Neighbouring NPA Codes (819, 873) | 4 |
|  | Future Geographic NPA Codes (257, 273, 354, 382, 428, 487, 683, 851, 871, 942)  (Note 1) | 20 |
|  | Plant Test Codes (958 & 959) | 4 |
|  | Special 7-digit Dialling Codes (310, 610 & 810) | 5 |
|  | CO Codes set aside for Initial Codes only | 0 |
|  | CO Codes set aside for New Entrants only | 0 |
|  | **Total B** | 59 |
|  | | |
| **C** | **CO Codes assignable prior to a Jeopardy Condition (C=A-B)** | **1541** |
|  | | |
| **D** | CO Codes unassignable prior to a Jeopardy Condition that become assignable in a Jeopardy Condition: |  |
| Future Canadian Geographic NPA Codes (257, 273, 382, 428, 487, 683, 851, 871, 942) (Note 2) | 18 |
| Current Neighbouring NPA Codes (819, 873) (Note 3) | 4 |
| **Total D** | **22** |
|  | | |
| **E** | **Assignable CO Codes in a Jeopardy Condition (E=C+D)** | **1563** |
| **F** | **Assigned CO Codes as of 14 June 2018** | **1136** |
| **G** | **Net CO Codes available for assignment as of 14 June 2018 without a Jeopardy Condition (G=C-F)** | 405 |
| **H** | **Net CO Codes available for assignment as of 14 June 2018 in a Jeopardy Condition (H=E-F)** | 427 |

**Notes:**

1. 11 out of a total 21 Future Canadian Geographic NPAs are already assigned or assignable as CO Codes in NPA 450/579
2. CO Codes 257, 273, 382, 428, 487, 683, 851, 871, and 942 should become assignable in a Jeopardy Condition. CO Code 354 might not become assignable even in a Jeopardy Condition as it has been set aside in accordance with Telecom Decision CRTC 2017-38 as the Relief NPA for NPA 450/579.the CNA was directed to set aside NPA 354 for the relief of NPA 450/579.
3. In an extreme Jeopardy Condition (i.e., when the Projected Exhaust Date is earlier than the Relief Date), the 2 CO Codes corresponding to current Neighbouring NPA Codes (819 and 873) may be made assignable in certain portions of NPA 450/579 with CRTC staff approval.

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# SELECTION OF RELIEF NPA CODE

In the event that the recommended relief option requires a new NPA Code, the criteria for selection of an appropriate area code for relief is addressed in section 4.10 of the Canadian NPA Relief Planning Guideline. The criteria that should be taken into account when Future Canadian Geographic NPAs are being considered as candidates for relief of a specific current Canadian Geographic NPA include the following:

1. The preferred Future Canadian Geographic NPA Code should not be an NPA Code that is assigned as a CO Code in the area that is being relieved (Home NPA(s)).
2. The preferred Future Canadian Geographic NPA Code should not be an NPA Code that is assigned as a CO Code in another NPA within the same province where there is a possibility that a single new NPA Code could be overlaid on more than one NPA within the province, or where boundary realignment could occur that affects another NPA.
3. The preferred Future Canadian Geographic NPA Code should not be an NPA Code that is assigned as a CO Code in an Exchange Area in a neighbouring NPA, if the neighbouring NPA has 7-digit local calling within the NPA, and i) the Exchange Area in the neighbouring NPA where the CO Code is assigned has local calling to the NPA being relieved, or ii) the Exchange Area in the neighbouring NPA where the CO Code is assigned does not have local calling to the NPA being relieved, but other Exchange Areas within that neighbouring NPA have 7-digit local calling to the Exchange Area where the CO Code is assigned as well as local calling to the new NPA.

The NPA Code Selection Tool located on the CNA web site at <http://www.cnac.ca/npa_codes/relief/NPA_Selection_Tool.xlsx> can assist in selecting a relief NPA Code from the pool of NPA Codes reserved for relief of geographic Canadian NPAs. The following table, extracted from the NPA Code Selection Tool, shows all codes corresponding to Future Canadian Geographic NPA Codes that are designated as unassignable CO Codes in the Home NPA, therefore are preferred candidates when selecting a relief NPA Code for NPA 450/579.

| **NXX corresponding to Future NPA** | **257** | **273** | **354** | **382** | **428** | **487** | **683** | **851** | **871** | **942** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Distributed Overlay | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Concentrated Overlay #1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Concentrated Overlay #2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Concentrated Overlay #3 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Concentrated Overlay #4 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Concentrated Overlay #5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

✓ Indicates that corresponding CO Code is designated as unassignable in Home NPA(s)

✓✓ Indicates that corresponding CO Code is designated as unassignable in Home NPA(s) and all neighbouring NPA(s)

All of the NPA Codes (257, 273, 354, 382, 428, 487, 683, 851, 871 and 942) are equally suitable as a new NPA Code for the relief of NPA 450/579, unless analysis of potential future code reservations for NPA reliefs in other areas of Canada, or Carrier cost considerations indicate a preference for one code over another for the relief of NPA 450/579.

In Telecom Decision CRTC 2017-38 the CNA was directed to set aside NPA 354 for the relief of NPA 450/579.

# RECOMMENDATIONS

To be completed by RPC

ANNEXES

1. Maps and Figures

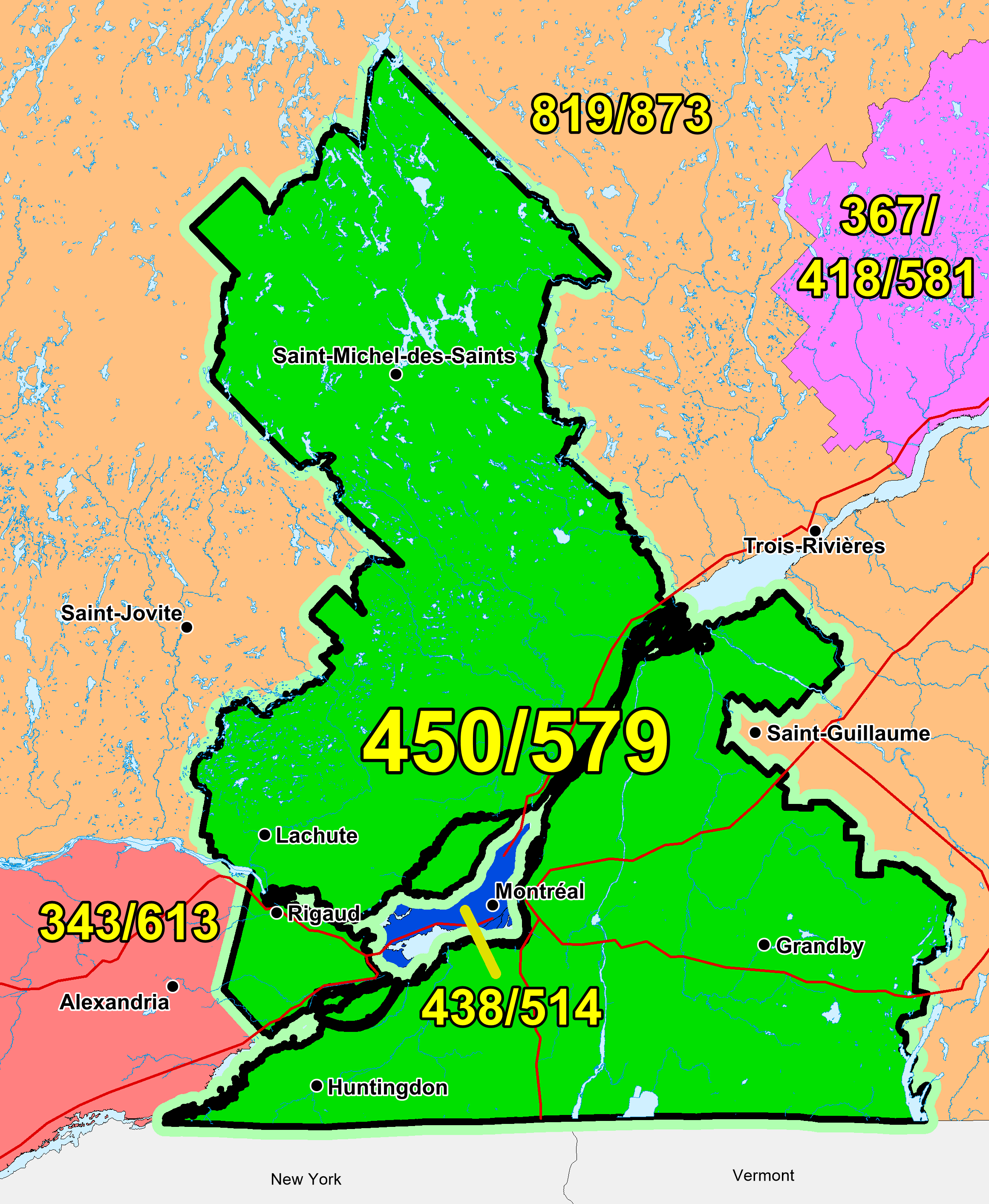


Figure 1 – Overview Map of NPA 450/579

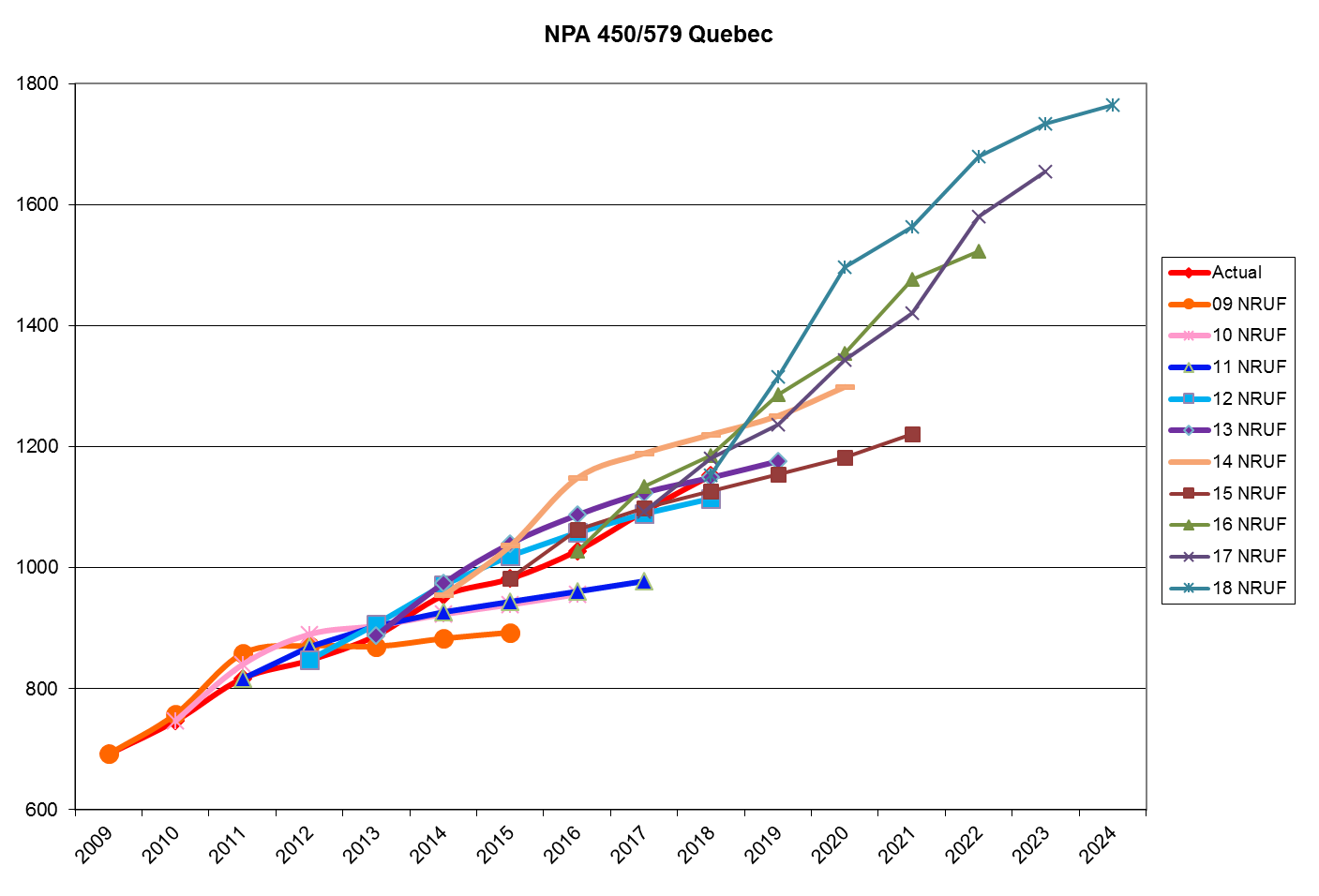


Figure 2 – NPA 450/579 Actual and Forecast CO Code Assignments



Figure 3 – NPA 450/579 CO Code Exhaust: January 2017 G‑NRUF



Figure 4 – NPA 450/579 Admin and LEC+WSP Codes: January 2017 G‑NRUF



Figure 5 – NPA 450/579 CO Code Exhaust: July 2017 R-NRUF



Figure 6 – NPA 450/579 Admin and LEC+WSP Codes: July 2017 R‑NRUF



Figure 7 – NPA 450/579 CO Code Exhaust: January 2018 R‑NRUF



Figure 8 – NPA 450/579 Admin and LEC+WSP Codes: January 2018 R‑NRUF

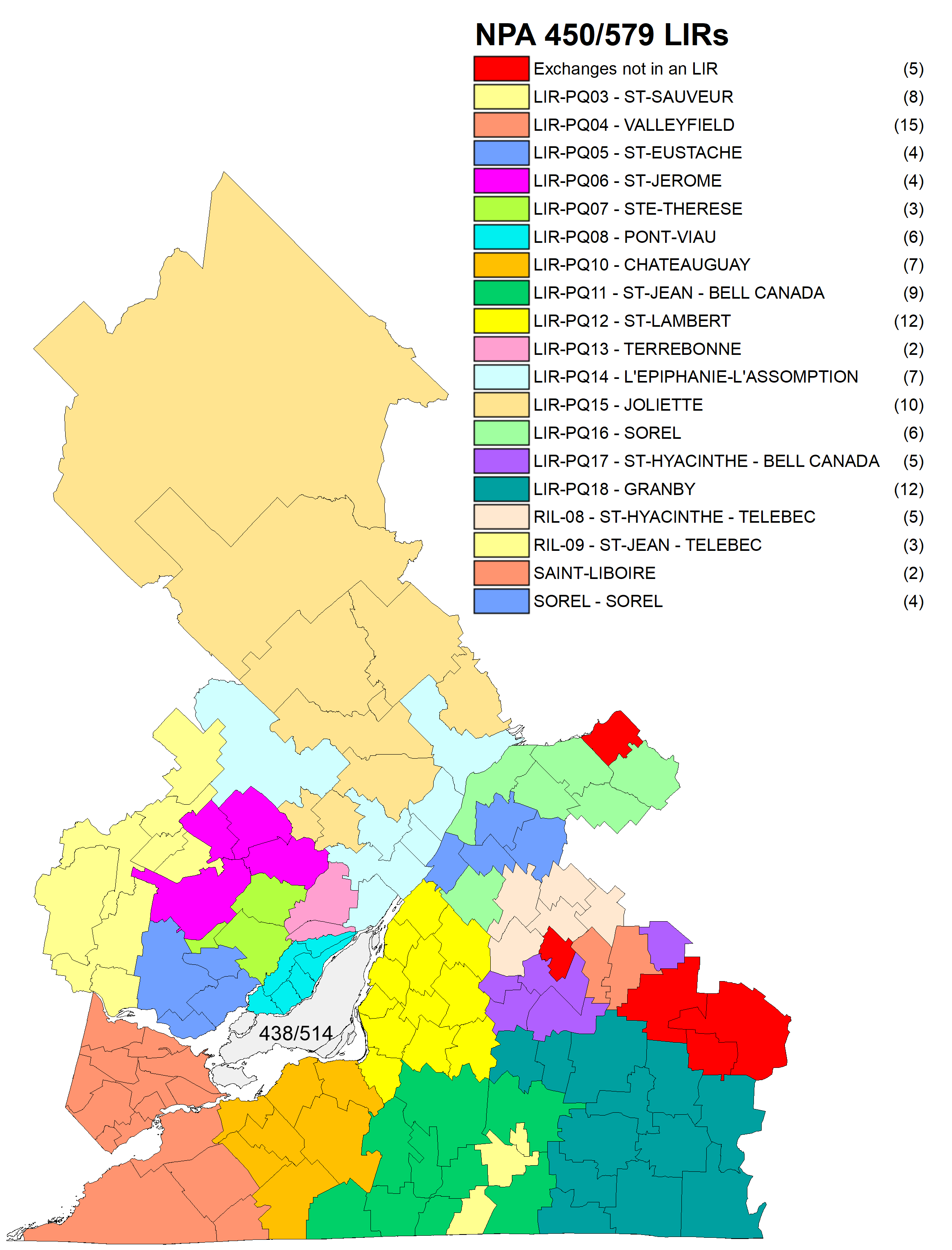


Figure 9 – NPA 450/579 LIRs

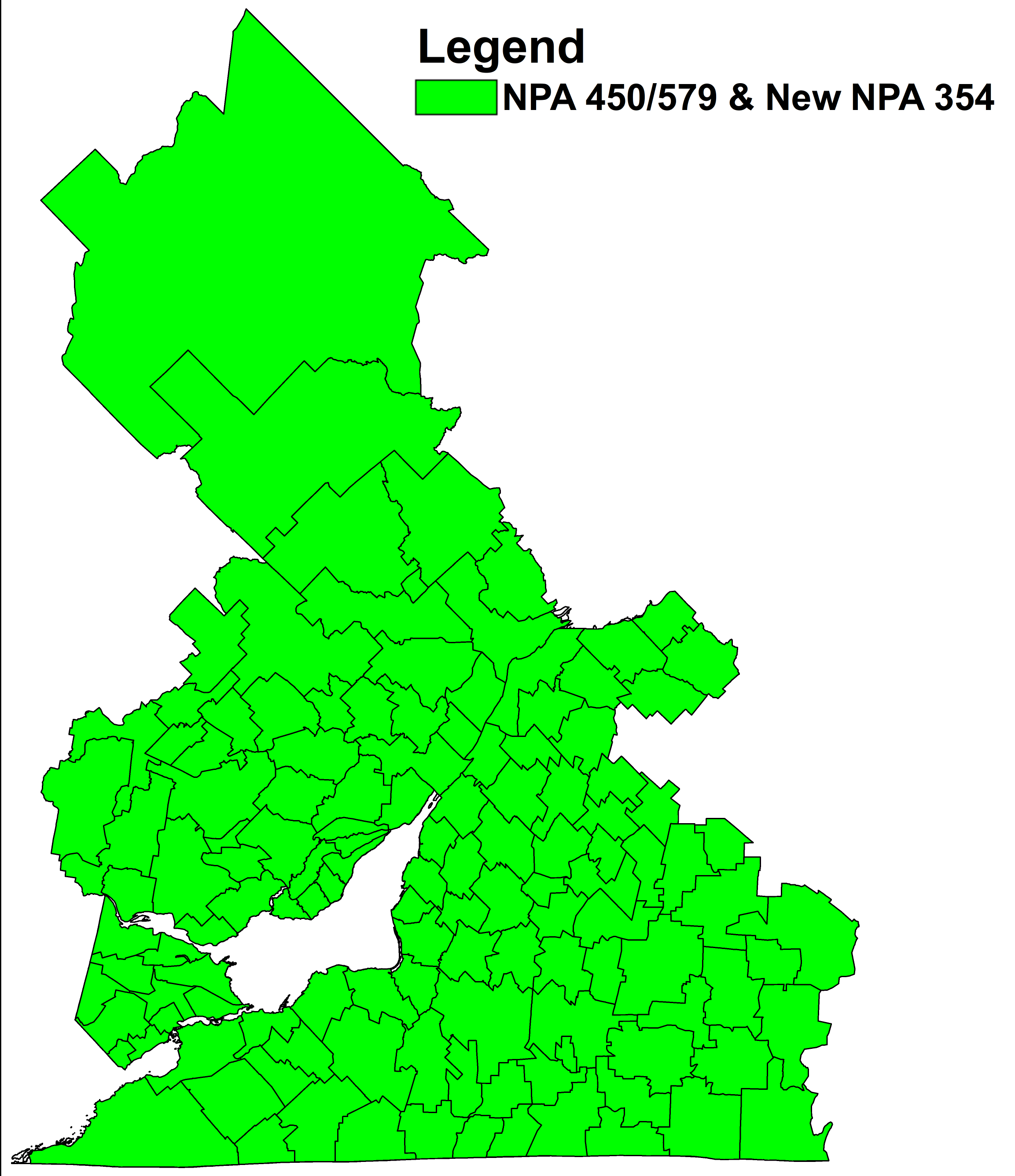


Figure 10 – Distributed Overlay

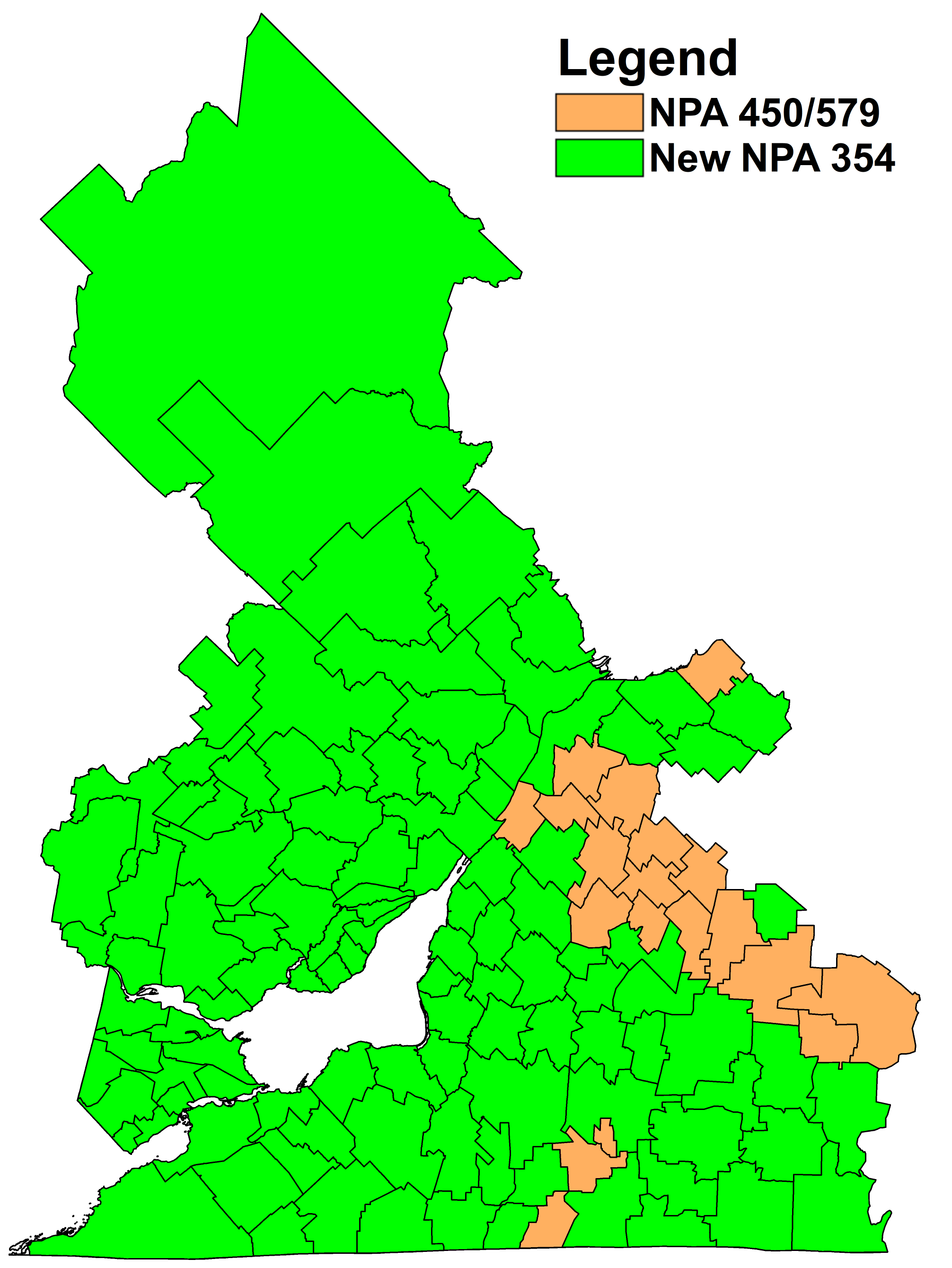


Figure 11 – Concentrated Overlay #1 (Bell Canada LIRs)

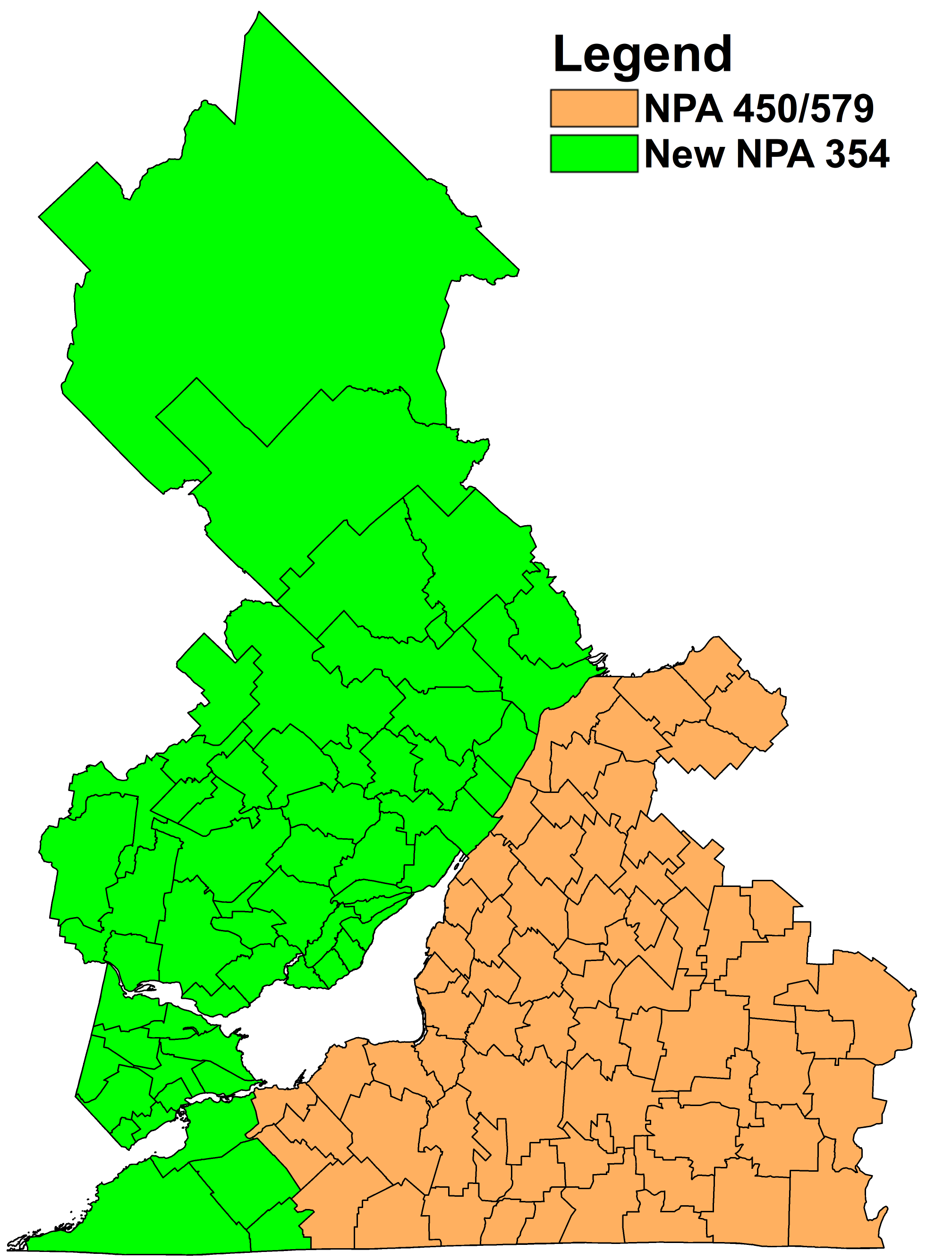


Figure 12 – Concentrated Overlay #2 (LIRs North)

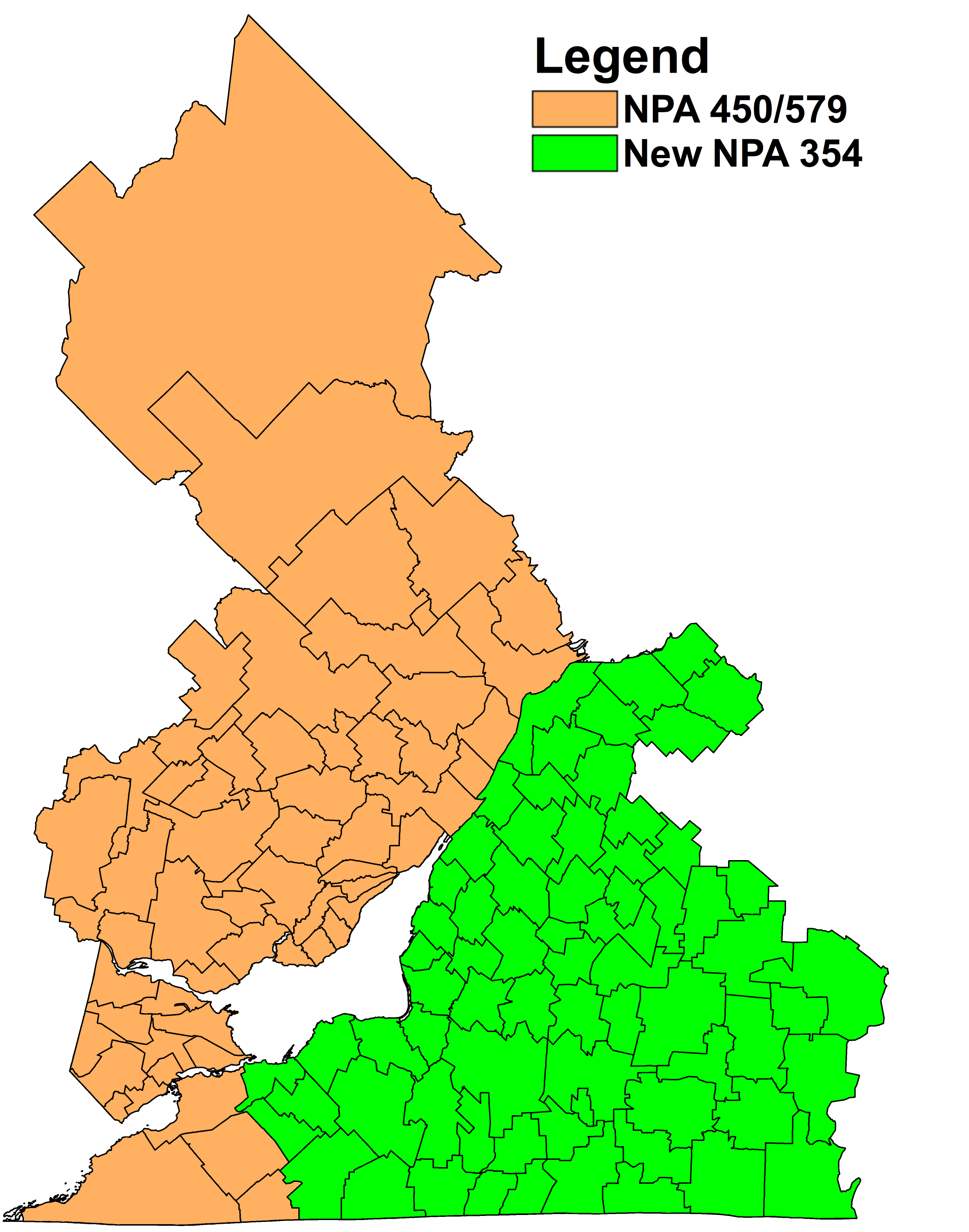


Figure 13 – Concentrated Overlay #3 (LIRs South)

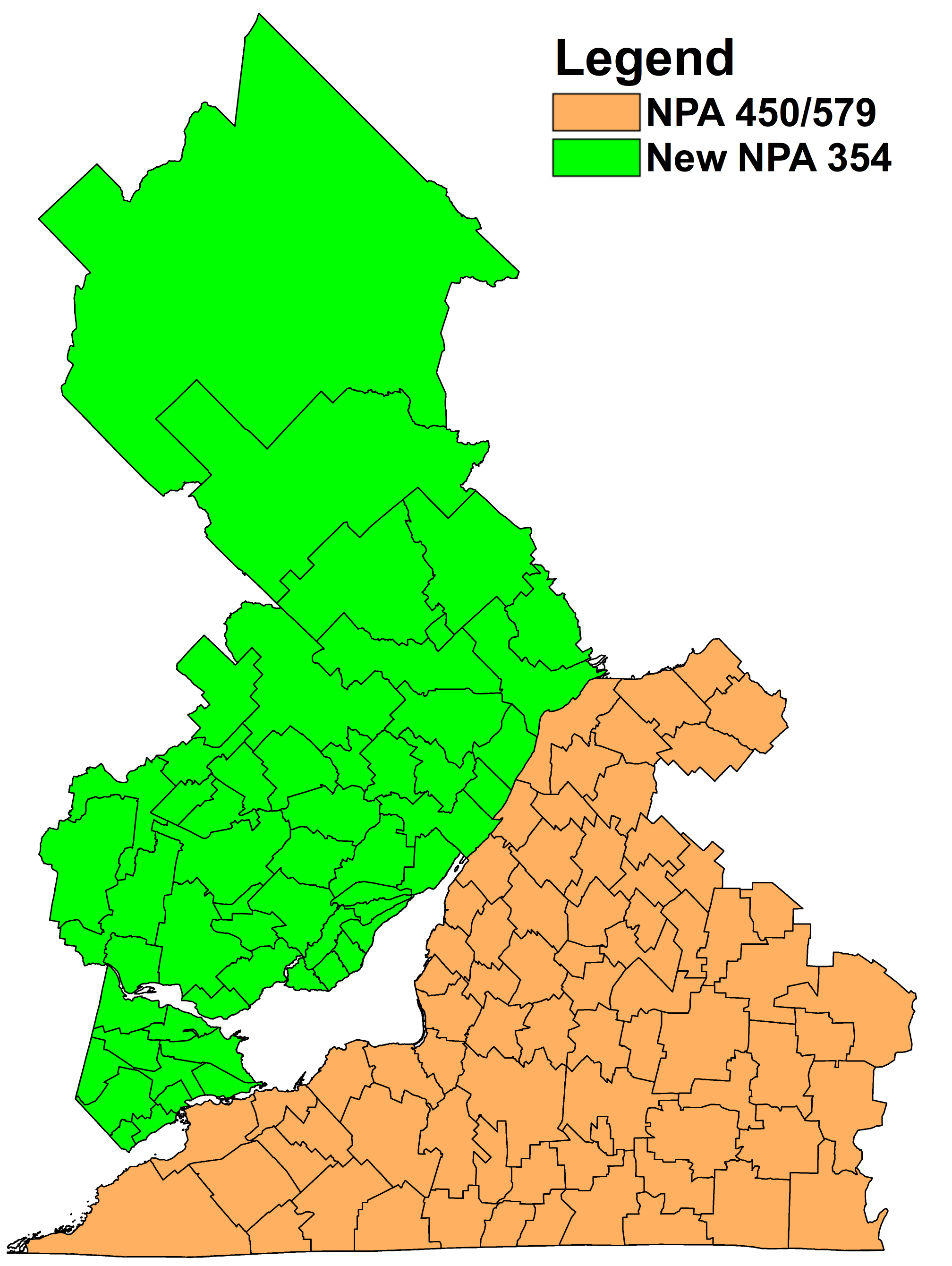


Figure 14 – Concentrated Overlay #4 (Exchange Areas North)

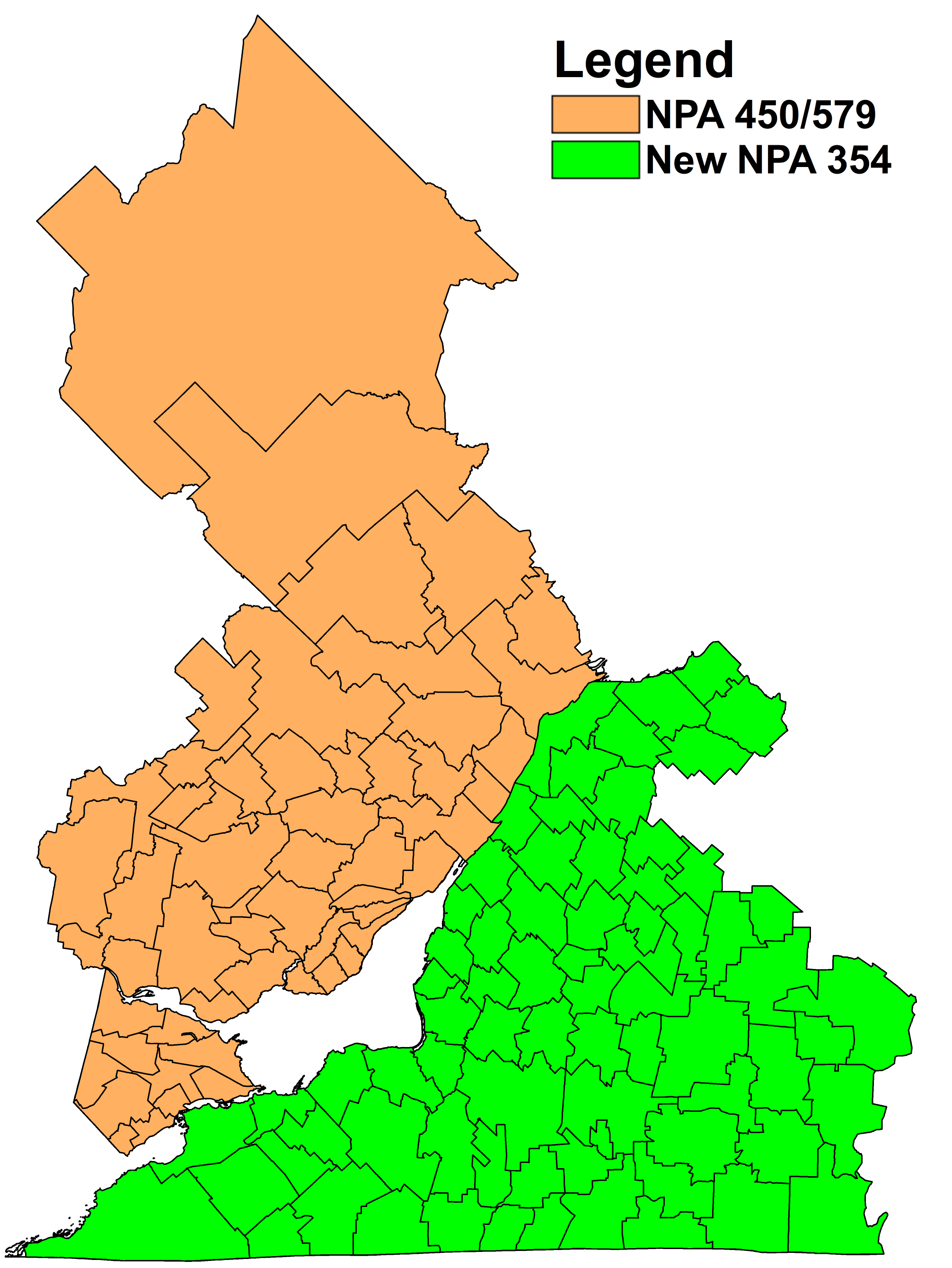


Figure 15 – Concentrated Overlay #5 (Exchange Areas South)

1. NPA 450/579 Quebec Exchange Areas

Table 1 – NPA 450/579 Exchange Areas for Each Relief Option

| **Exchange** | **Distributed Overlay** | **Contracted Overlay** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Option 1** | | **Option 2** | | **Option 3** | | **Option 4** | | **Option 5** | |
| **NPA 354/450/579** | **NPA 354/450/579**  **(Bell Canada LIR)** | **NPA 450/579**  **(non-Bell Canada LIR)** | **NPA 354/450/579**  **(LIRs North)** | **NPA 450/579**  **(LIRs South)** | **NPA 354/450/579**  **(LIRs South)** | **NPA 450/579**  **(LIRs North)** | **NPA 354/450/579**  **(Exchange Areas North)** | **NPA 450/579**  **(Exchange Areas South)** | **NPA 354/450/579**  **(Exchange Areas South)** | **NPA 450/579**  **(Exchange Areas North)** |
| Actonvale |  |  |  |  |  |  |  |  |  |  |  |
| Baie-Du-Febvre |  |  |  |  |  |  |  |  |  |  |  |
| Beauharnois |  |  |  |  |  |  |  |  |  |  |  |
| Bedford |  |  |  |  |  |  |  |  |  |  |  |
| Beloeil |  |  |  |  |  |  |  |  |  |  |  |
| Berthierville |  |  |  |  |  |  |  |  |  |  |  |
| Boucherville |  |  |  |  |  |  |  |  |  |  |  |
| Bromont |  |  |  |  |  |  |  |  |  |  |  |
| Brownsburg |  |  |  |  |  |  |  |  |  |  |  |
| Chambly |  |  |  |  |  |  |  |  |  |  |  |
| Chateauguay |  |  |  |  |  |  |  |  |  |  |  |
| Chomedey |  |  |  |  |  |  |  |  |  |  |  |
| Clarenceville |  |  |  |  |  |  |  |  |  |  |  |
| Contrecoeur |  |  |  |  |  |  |  |  |  |  |  |
| Coteau-du-Lac |  |  |  |  |  |  |  |  |  |  |  |
| Coteau-Landing |  |  |  |  |  |  |  |  |  |  |  |
| Cowansville |  |  |  |  |  |  |  |  |  |  |  |
| Crabtree |  |  |  |  |  |  |  |  |  |  |  |
| Dunham |  |  |  |  |  |  |  |  |  |  |  |
| Eastman |  |  |  |  |  |  |  |  |  |  |  |
| Farnham |  |  |  |  |  |  |  |  |  |  |  |
| Franklin Centre |  |  |  |  |  |  |  |  |  |  |  |
| Frelighsburg |  |  |  |  |  |  |  |  |  |  |  |
| Granby |  |  |  |  |  |  |  |  |  |  |  |
| Hemmingford |  |  |  |  |  |  |  |  |  |  |  |
| Henryville |  |  |  |  |  |  |  |  |  |  |  |
| Howick |  |  |  |  |  |  |  |  |  |  |  |
| Hudson |  |  |  |  |  |  |  |  |  |  |  |
| Huntingdon |  |  |  |  |  |  |  |  |  |  |  |
| Joliette |  |  |  |  |  |  |  |  |  |  |  |
| Knowlton |  |  |  |  |  |  |  |  |  |  |  |
| L'Epiphanie-l'Assomption |  |  |  |  |  |  |  |  |  |  |  |
| Lachute |  |  |  |  |  |  |  |  |  |  |  |
| Lacolle |  |  |  |  |  |  |  |  |  |  |  |
| Lanoraie |  |  |  |  |  |  |  |  |  |  |  |
| Laprairie |  |  |  |  |  |  |  |  |  |  |  |
| Laval-Est |  |  |  |  |  |  |  |  |  |  |  |
| Laval-Ouest |  |  |  |  |  |  |  |  |  |  |  |
| Lavaltrie |  |  |  |  |  |  |  |  |  |  |  |
| Lawrenceville |  |  |  |  |  |  |  |  |  |  |  |
| Le Gardeur |  |  |  |  |  |  |  |  |  |  |  |
| Les Cedres |  |  |  |  |  |  |  |  |  |  |  |
| Longueuil |  |  |  |  |  |  |  |  |  |  |  |
| Mansonville |  |  |  |  |  |  |  |  |  |  |  |
| Marieville |  |  |  |  |  |  |  |  |  |  |  |
| Mascouche |  |  |  |  |  |  |  |  |  |  |  |
| Mirabel-Aeroport |  |  |  |  |  |  |  |  |  |  |  |
| Mirabel-St-Augustin |  |  |  |  |  |  |  |  |  |  |  |
| Mirabel-Ste-Scholastique |  |  |  |  |  |  |  |  |  |  |  |
| Morin Heights |  |  |  |  |  |  |  |  |  |  |  |
| Napierville |  |  |  |  |  |  |  |  |  |  |  |
| Notre-Dame-de-Stanbridge |  |  |  |  |  |  |  |  |  |  |  |
| Oka |  |  |  |  |  |  |  |  |  |  |  |
| Ormstown |  |  |  |  |  |  |  |  |  |  |  |
| Pierreville |  |  |  |  |  |  |  |  |  |  |  |
| Pont-Viau |  |  |  |  |  |  |  |  |  |  |  |
| Rawdon |  |  |  |  |  |  |  |  |  |  |  |
| Rigaud |  |  |  |  |  |  |  |  |  |  |  |
| Riviere-Beaudette |  |  |  |  |  |  |  |  |  |  |  |
| Roxton Falls |  |  |  |  |  |  |  |  |  |  |  |
| Saint-Liboire |  |  |  |  |  |  |  |  |  |  |  |
| Shawbridge |  |  |  |  |  |  |  |  |  |  |  |
| Sorel |  |  |  |  |  |  |  |  |  |  |  |
| St-Aime |  |  |  |  |  |  |  |  |  |  |  |
| St-Alphonse-de-Rodriguez |  |  |  |  |  |  |  |  |  |  |  |
| St-Andre Est |  |  |  |  |  |  |  |  |  |  |  |
| St-Barthelemy |  |  |  |  |  |  |  |  |  |  |  |
| St-Blaise |  |  |  |  |  |  |  |  |  |  |  |
| St-Bruno |  |  |  |  |  |  |  |  |  |  |  |
| St-Calixte-de-Kilkenny |  |  |  |  |  |  |  |  |  |  |  |
| St-Cesaire |  |  |  |  |  |  |  |  |  |  |  |
| St-Chrysostome |  |  |  |  |  |  |  |  |  |  |  |
| St-Clet |  |  |  |  |  |  |  |  |  |  |  |
| St-Constant |  |  |  |  |  |  |  |  |  |  |  |
| St-Damase |  |  |  |  |  |  |  |  |  |  |  |
| St-Denis |  |  |  |  |  |  |  |  |  |  |  |
| St-Eustache |  |  |  |  |  |  |  |  |  |  |  |
| St-Felix-de-Valois |  |  |  |  |  |  |  |  |  |  |  |
| St-Gabriel-de-Brandon |  |  |  |  |  |  |  |  |  |  |  |
| St-Hippolyte |  |  |  |  |  |  |  |  |  |  |  |
| St-Hugues |  |  |  |  |  |  |  |  |  |  |  |
| St-Hyacinthe |  |  |  |  |  |  |  |  |  |  |  |
| St-Jacques |  |  |  |  |  |  |  |  |  |  |  |
| St-Jean |  |  |  |  |  |  |  |  |  |  |  |
| St-Jean-de-Matha |  |  |  |  |  |  |  |  |  |  |  |
| St-Jerome |  |  |  |  |  |  |  |  |  |  |  |
| St-Jude |  |  |  |  |  |  |  |  |  |  |  |
| St-Lambert |  |  |  |  |  |  |  |  |  |  |  |
| St-Lin |  |  |  |  |  |  |  |  |  |  |  |
| St-Marc |  |  |  |  |  |  |  |  |  |  |  |
| St-Michel-des-Saints |  |  |  |  |  |  |  |  |  |  |  |
| St-Ours |  |  |  |  |  |  |  |  |  |  |  |
| St-Paul-D'Abbotsford |  |  |  |  |  |  |  |  |  |  |  |
| St-Pie |  |  |  |  |  |  |  |  |  |  |  |
| St-Pie-de-Guire |  |  |  |  |  |  |  |  |  |  |  |
| St-Polycarpe |  |  |  |  |  |  |  |  |  |  |  |
| St-Remi |  |  |  |  |  |  |  |  |  |  |  |
| St-Sauveur |  |  |  |  |  |  |  |  |  |  |  |
| St-Simon |  |  |  |  |  |  |  |  |  |  |  |
| St-Thomas-d'Aquin |  |  |  |  |  |  |  |  |  |  |  |
| St-Vincent-de-Paul |  |  |  |  |  |  |  |  |  |  |  |
| St-Zenon |  |  |  |  |  |  |  |  |  |  |  |
| St-Zephirin |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Adele |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Anne-des-Plaines |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Helene-de-Bagot |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Julie-de-Vercheres |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Julienne |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Justine-de-Newton |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Madeleine |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Marguerite |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Marthe |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Martine |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Rosalie |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Rose |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Sabine |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Therese |  |  |  |  |  |  |  |  |  |  |  |
| Ste-Victoire |  |  |  |  |  |  |  |  |  |  |  |
| Sutton |  |  |  |  |  |  |  |  |  |  |  |
| Terrebonne |  |  |  |  |  |  |  |  |  |  |  |
| Upton |  |  |  |  |  |  |  |  |  |  |  |
| Valcourt |  |  |  |  |  |  |  |  |  |  |  |
| Valleyfield |  |  |  |  |  |  |  |  |  |  |  |
| Varennes |  |  |  |  |  |  |  |  |  |  |  |
| Vaudreuil |  |  |  |  |  |  |  |  |  |  |  |
| Venise-en-Quebec |  |  |  |  |  |  |  |  |  |  |  |
| Vercheres |  |  |  |  |  |  |  |  |  |  |  |
| Waterloo |  |  |  |  |  |  |  |  |  |  |  |
| Yamaska |  |  |  |  |  |  |  |  |  |  |  |

Table 2 – Exchange Areas in Each LIR

| **LIR Name** | **Exchange** |
| --- | --- |
| LIR-PQ03 - ST-SAUVEUR | Brownsburg |
| LIR-PQ03 - ST-SAUVEUR | Lachute |
| LIR-PQ03 - ST-SAUVEUR | Morin Heights |
| LIR-PQ03 - ST-SAUVEUR | Shawbridge |
| LIR-PQ03 - ST-SAUVEUR | St-Andre Est |
| LIR-PQ03 - ST-SAUVEUR | Ste-Adele |
| LIR-PQ03 - ST-SAUVEUR | Ste-Marguerite |
| LIR-PQ03 - ST-SAUVEUR | St-Sauveur |
| LIR-PQ04 - VALLEYFIELD | Coteau-du-Lac |
| LIR-PQ04 - VALLEYFIELD | Coteau-Landing |
| LIR-PQ04 - VALLEYFIELD | Franklin Centre |
| LIR-PQ04 - VALLEYFIELD | Hudson |
| LIR-PQ04 - VALLEYFIELD | Huntingdon |
| LIR-PQ04 - VALLEYFIELD | Les Cedres |
| LIR-PQ04 - VALLEYFIELD | Ormstown |
| LIR-PQ04 - VALLEYFIELD | Rigaud |
| LIR-PQ04 - VALLEYFIELD | Riviere-Beaudette |
| LIR-PQ04 - VALLEYFIELD | St-Clet |
| LIR-PQ04 - VALLEYFIELD | Ste-Justine-de-Newton |
| LIR-PQ04 - VALLEYFIELD | Ste-Marthe |
| LIR-PQ04 - VALLEYFIELD | St-Polycarpe |
| LIR-PQ04 - VALLEYFIELD | Valleyfield |
| LIR-PQ04 - VALLEYFIELD | Vaudreuil |
| LIR-PQ05 - ST-EUSTACHE | Mirabel-St-Augustin |
| LIR-PQ05 - ST-EUSTACHE | Mirabel-Ste-Scholastique |
| LIR-PQ05 - ST-EUSTACHE | Oka |
| LIR-PQ05 - ST-EUSTACHE | St-Eustache |
| LIR-PQ06 - ST-JEROME | St-Calixte-de-Kilkenny |
| LIR-PQ06 - ST-JEROME | St-Hippolyte |
| LIR-PQ06 - ST-JEROME | St-Jerome |
| LIR-PQ06 - ST-JEROME | St-Lin |
| LIR-PQ07 - STE-THERESE | Mirabel-Aeroport |
| LIR-PQ07 - STE-THERESE | Ste-Anne-des-Plaines |
| LIR-PQ07 - STE-THERESE | Ste-Therese |
| LIR-PQ08 - PONT-VIAU | Chomedey |
| LIR-PQ08 - PONT-VIAU | Laval-Est |
| LIR-PQ08 - PONT-VIAU | Laval-Ouest |
| LIR-PQ08 - PONT-VIAU | Pont-Viau |
| LIR-PQ08 - PONT-VIAU | Ste-Rose |
| LIR-PQ08 - PONT-VIAU | St-Vincent-de-Paul |
| LIR-PQ10 - CHATEAUGUAY | Beauharnois |
| LIR-PQ10 - CHATEAUGUAY | Chateauguay |
| LIR-PQ10 - CHATEAUGUAY | Howick |
| LIR-PQ10 - CHATEAUGUAY | St-Chrysostome |
| LIR-PQ10 - CHATEAUGUAY | St-Constant |
| LIR-PQ10 - CHATEAUGUAY | Ste-Martine |
| LIR-PQ10 - CHATEAUGUAY | St-Remi |
| LIR-PQ11 - ST-JEAN - BELL CANADA | Bedford |
| LIR-PQ11 - ST-JEAN - BELL CANADA | Clarenceville |
| LIR-PQ11 - ST-JEAN - BELL CANADA | Farnham |
| LIR-PQ11 - ST-JEAN - BELL CANADA | Hemmingford |
| LIR-PQ11 - ST-JEAN - BELL CANADA | Henryville |
| LIR-PQ11 - ST-JEAN - BELL CANADA | Lacolle |
| LIR-PQ11 - ST-JEAN - BELL CANADA | Napierville |
| LIR-PQ11 - ST-JEAN - BELL CANADA | St-Blaise |
| LIR-PQ11 - ST-JEAN - BELL CANADA | St-Jean |
| LIR-PQ12 - ST-LAMBERT | Beloeil |
| LIR-PQ12 - ST-LAMBERT | Boucherville |
| LIR-PQ12 - ST-LAMBERT | Chambly |
| LIR-PQ12 - ST-LAMBERT | Laprairie |
| LIR-PQ12 - ST-LAMBERT | Longueuil |
| LIR-PQ12 - ST-LAMBERT | Marieville |
| LIR-PQ12 - ST-LAMBERT | St-Bruno |
| LIR-PQ12 - ST-LAMBERT | Ste-Julie-de-Vercheres |
| LIR-PQ12 - ST-LAMBERT | St-Lambert |
| LIR-PQ12 - ST-LAMBERT | St-Marc |
| LIR-PQ12 - ST-LAMBERT | Varennes |
| LIR-PQ12 - ST-LAMBERT | Vercheres |
| LIR-PQ13 - TERREBONNE | Mascouche |
| LIR-PQ13 - TERREBONNE | Terrebonne |
| LIR-PQ14 - L'EPIPHANIE-L'ASSOMPTION | Berthierville |
| LIR-PQ14 - L'EPIPHANIE-L'ASSOMPTION | Crabtree |
| LIR-PQ14 - L'EPIPHANIE-L'ASSOMPTION | Lanoraie |
| LIR-PQ14 - L'EPIPHANIE-L'ASSOMPTION | Lavaltrie |
| LIR-PQ14 - L'EPIPHANIE-L'ASSOMPTION | Le Gardeur |
| LIR-PQ14 - L'EPIPHANIE-L'ASSOMPTION | L'Epiphanie-l'Assomption |
| LIR-PQ14 - L'EPIPHANIE-L'ASSOMPTION | Rawdon |
| LIR-PQ15 - JOLIETTE | Joliette |
| LIR-PQ15 - JOLIETTE | St-Alphonse-de-Rodriguez |
| LIR-PQ15 - JOLIETTE | St-Barthelemy |
| LIR-PQ15 - JOLIETTE | Ste-Julienne |
| LIR-PQ15 - JOLIETTE | St-Felix-de-Valois |
| LIR-PQ15 - JOLIETTE | St-Gabriel-de-Brandon |
| LIR-PQ15 - JOLIETTE | St-Jacques |
| LIR-PQ15 - JOLIETTE | St-Jean-de-Matha |
| LIR-PQ15 - JOLIETTE | St-Michel-des-Saints |
| LIR-PQ15 - JOLIETTE | St-Zenon |
| LIR-PQ16 - SOREL | Pierreville |
| LIR-PQ16 - SOREL | Sorel |
| LIR-PQ16 - SOREL | St-Denis |
| LIR-PQ16 - SOREL | St-Pie-de-Guire |
| LIR-PQ16 - SOREL | St-Zephirin |
| LIR-PQ16 - SOREL | Yamaska |
| LIR-PQ17 - ST-HYACINTHE - BELL CANADA | Actonvale |
| LIR-PQ17 - ST-HYACINTHE - BELL CANADA | St-Damase |
| LIR-PQ17 - ST-HYACINTHE - BELL CANADA | Ste-Madeleine |
| LIR-PQ17 - ST-HYACINTHE - BELL CANADA | St-Hyacinthe |
| LIR-PQ17 - ST-HYACINTHE - BELL CANADA | St-Pie |
| LIR-PQ18 - GRANBY | Bromont |
| LIR-PQ18 - GRANBY | Cowansville |
| LIR-PQ18 - GRANBY | Dunham |
| LIR-PQ18 - GRANBY | Eastman |
| LIR-PQ18 - GRANBY | Frelighsburg |
| LIR-PQ18 - GRANBY | Granby |
| LIR-PQ18 - GRANBY | Knowlton |
| LIR-PQ18 - GRANBY | Mansonville |
| LIR-PQ18 - GRANBY | St-Cesaire |
| LIR-PQ18 - GRANBY | St-Paul-D'Abbotsford |
| LIR-PQ18 - GRANBY | Sutton |
| LIR-PQ18 - GRANBY | Waterloo |
| RIL-08 - ST-HYACINTHE - TELEBEC | Ste-Helene-de-Bagot |
| RIL-08 - ST-HYACINTHE - TELEBEC | St-Hugues |
| RIL-08 - ST-HYACINTHE - TELEBEC | St-Jude |
| RIL-08 - ST-HYACINTHE - TELEBEC | St-Simon |
| RIL-08 - ST-HYACINTHE - TELEBEC | St-Thomas-d'Aquin |
| RIL-09 - ST-JEAN - TELEBEC | Notre-Dame-de-Stanbridge |
| RIL-09 - ST-JEAN - TELEBEC | Ste-Sabine |
| RIL-09 - ST-JEAN - TELEBEC | Venise-en-Quebec |
| SAINT-LIBOIRE | Saint-Liboire |
| SAINT-LIBOIRE | Upton |
| SOREL - SOREL | Contrecoeur |
| SOREL - SOREL | St-Aime |
| SOREL - SOREL | Ste-Victoire |
| SOREL - SOREL | St-Ours |
| No LIR | Baie-Du-Febvre |
| No LIR | Lawrenceville |
| No LIR | Roxton Falls |
| No LIR | Ste-Rosalie |
| No LIR | Valcourt |

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|  |  |
| --- | --- |
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