neustar

NATIONAL POOLING AND ROUTING NUMBER ADMINISTRATION

2017 ANNUAL REPORT

March 30, 2018

Ms. Kadian Ferguson
Contracting Officer
Enterprise Acquisition Center (EAC)
Office of the Managing Director
445 12th Street, SW, TW-A626
Washington, DC 20554

RE: 2017 Annual Report for FCC Contract No. FCC13C0007

Dear Ms. Ferguson:

Attached please find the *Thousands-Block Pooling Administration 2017 Annual Report,* submitted pursuant to Contract Data Requirements List referenced in Section 4.6.1 of the *Contract for Pooling Administration Services for the Federal Communications Commission*, FCC Contract No. FCC13C0007 (Contract). This report covers Pooling Administration (PA) and P-ANI Administration activities from January 1, 2017 through December 31, 2017, and is required by Attachment A of the Contract. Section 4, *Contract Data Requirements List*, specifically Section 4.6.1, *Annual*, directs that this report contain:

- A brief description of the PA and P-ANI Administrator,
- Highlights/significant milestones reached during previous year,
- Identification of existing and potential pooling areas,
- Aggregated total number by pool of the service providers participating in the pooled areas,
- Forecast results, as well as a review of past forecasts vs. actual block activation,
- System and performance metrics,
- The status of required transferable property,
- Industry issue identification/feedback
- The volume of reports produced aggregated by regulatory agency, NANC, NANPA, and service providers, and
- Additional informational offerings.

In 2017, we continued our extraordinary level of contract compliance and unwavering focus on customer support, as well as completing all of our responsibilities relating to the NPAC transition. We processed 134,389 Part 3s, which an increase of 10,760 over last year, and we continued to meet or exceed all performance metrics. The Pooling Administration System (PAS) and Routing Number Administration System (RNAS) were available virtually 100% of the time. In addition, we continue to assist authorized interconnected VoIP service providers through education and one-on-one support, as well as working with state regulators to address challenging state-specific requirements. We continued to maintain strict reporting compliance, and completed several special projects not required by our contract. We also had no formal complaints.

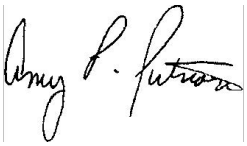
The PA met or exceeded all of its performance goals and objectives in 2017. The goals, most of which are outlined in the contract, include:

- System availability of 99.9% or better;
- 100% of received calls answered within one business day;
- 99% of pooling applications processed within seven calendar days;
- 99% of p-ANI applications processed within five business days;
- Unscheduled maintenance of the PAS and RNAS to be less than 9 hours in any 12 month period;
- Scheduled maintenance of the PAS and RNAS to be less than 24 hours in any 12 month period;
- 100% of the ad hoc report requests to be distributed within three business days;
- All required reports completed per Section 5.0;
- Strong customer focus;
- No formal complaints.

We continued to accurately and efficiently manage thousands-block number pooling services in a neutral manner that not only meets our contractual obligations, but continues to justify the confidence that the FCC and industry have placed in us. Our team is proud of our 2017 performance and will continue to work cooperatively and productively with you, service providers, industry groups, and regulatory staff as we have for more than 16 years.

Should you have any questions about this report, please do not hesitate to contact me.

Respectfully submitted,



Amy L. Putnam, Esq.
Sr. Director, Pooling Administration
Neustar, Inc.

Cc: Ann Stevens, Esq., FCC
Marilyn Jones, Esq., FCC
Myrva Charles, COTR, FCC
William Reidway, Neustar

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Section 1
Description of Neustar Pooling and P-ANI Administration

1.1. Background

In 1997, the Illinois Commerce Commission selected Neustar, Inc. [then an autonomous business unit known as Communications Industry Services (CIS) within Lockheed Martin Corporation] to administer the trial of thousands-block number pooling in the Illinois 847 Numbering Plan Area (NPA). This trial, the first of its kind, was successfully implemented in June 1998 and was backed by the Federal Communications Commission (FCC) in its *Memorandum Opinion and Order and Order on Reconsideration, CC 96-98, FCC 98-224*, known as "the *Pennsylvania Order*." In the *Pennsylvania Order*, the FCC granted limited authority to continue the Illinois pooling trial and encouraged other states to seek delegated authority to implement pooling trials. Shortly thereafter, Neustar began administering the trial in New York's 212 NPA.

On November 30, 1999, Neustar, Inc. (Neustar) was divested from Lockheed Martin as a separate, privately-held company. As more states requested and received delegated authority to implement thousands-block pooling trials, Neustar was chosen as administrator in all but six states where trials were ordered. By the beginning of national pooling, in March 2002, Neustar was managing twenty-two state pooling trials in eighty-three NPAs. We transitioned over five thousand blocks to our then-newly-designed Pooling Administration System (PAS).

Neustar competitively bid for and was awarded the first federal contract to administer the national rollout and ongoing administration of thousands-block pooling on June 15, 2001, for a total of five years, renewable annually. Contract number CON01000016 expired on June 14, 2006. By the end of that contract Neustar was managing nearly 14,000 rate area pools in all fifty states, the District of Columbia and Puerto Rico. The FCC issued eight contract modifications between June 15, 2006 and July 12, 2007 to extend Neustar's pooling administration contract through August 14, 2007.

Neustar again competitively bid for and was awarded the second national pooling contract on July 31, 2007, for a possible total of five years, with a base period of two years renewable annually for the remaining three. This second contract became effective on August 15, 2007, with the base period ending on August 14, 2009. The FCC issued six contract modifications between August 15, 2009 and June 13, 2013 to extend Neustar's pooling administration contract through July 14, 2013.

In June, 2013, Neustar successfully bid for its third and current national pooling contract which was awarded on July 12, 2013. This contract is for a base period of one year that began on July 15, 2013, with three possible one year extensions, ending in July 2017. The one-year base period expired on July 14, 2014. The FCC exercised all three options, and the contract was scheduled to expire on July 14, 2017. On July 7, 2017, the FCC issued a contract modification to extend the contract for six months, ending on January 14, 2018.

1.2 Neutrality

Neustar Pooling Administration (PA) is an independent, neutral third party, as defined in Section H.3.3, *Neutrality Requirements*, of the pooling contract. As such, the PA is responsible for the fair and efficient overall administration of pooled numbering resources. The PA is a non-governmental entity that is

impartial and not aligned with any particular telecommunication industry segment, and complies with 47 C.F.R. § 52.12.

Neustar was acquired by Golden Gate Capital in August 2017, and became a private company. As a result of the acquisition, the Neustar Neutrality Compliance Procedures were revised. The new Neustar Code of Conduct (Code) pertains only to the core numbering administration functions performed by Neustar.

The new Code is virtually the same as the previous one as it relates to affected employee responsibilities. However, Neustar moved from quarterly certifications and audits to semi-annual neutrality audits. The first semi-annual audit under the new procedures will take place in 2018 and cover the August 8, 2017 to December 31, 2017 time period.

1.3 Description of National Pooling Administration (PA)

The PA performs the day-to-day number resource assignment and administrative activities with a long-term focus, which includes maintaining a system to support all day-to-day and long-term pooling functions.

As such, the PA:

- Provides a standardized application of all administrative pooling guidelines,
- Develops tools and has implemented a system containing both hardware and software to facilitate the assignment, tracking, and data reporting requirements,
- Maintains interfaces with the NANPA, the NPAC, service providers, industry forums, (e.g., INC, CIGRR, etc.), and regulatory agencies, and
- Maintains and plans for adequate pool inventory numbering resources.

The PA also interacts with the NANPA and the NPAC vendor, while impartially administering thousands-block number pools by assigning, managing, forecasting, reporting, and processing data that allows service providers in rate centers designated for thousands-block number pooling to receive telephone numbers in blocks of 1,000. In addition, we maintain accurate rate center designations.

For further information on the PA requirements, see Attachment A of FCC Contract No. FCC13C0007.

1.4 Description of Routing Number Administration (RNA)

In addition to pooling administration, the PA was the Interim Routing Number Administrator (IRNA) from 2006 to March 18, 2012. By letter dated September 8, 2006, the FCC directed the PA to begin assigning Emergency Service Query Keys (ESQKs) under certain limited circumstances as the Interim Routing Number Administrator (IRNA). When the FCC awarded the new PA contract in August 2007, it included the provision that the new national PA would act as the permanent Pseudo-Automatic Number Identification (p-ANI) Administrator (a/k/a Routing Number Administrator or RNA) once the FCC determined the permanent process.

On June 17, 2011, the FCC approved Neustar's Change Order Proposal #19 addressing implementation of the permanent Routing Number Administrator (RNA) function and we assumed the responsibility as of

March 19, 2012. As the RNA, we are responsible for managing and assigning non-dialable p-ANIs, which are used to support the routing of wireless and VoIP 9-1-1 calls. The p-ANIs are assigned out of the 211 NXX and 511 NXX on a national basis, as well as in Puerto Rico and the Virgin Islands.

Upon approval of the Change Order in 2011, the RNA established a nine-month transition period, during which the new Routing Number Administration System (RNAS) and website www.nationalpani.com were developed, tested, and implemented. During the transition period, the RNAS inventory was populated with non-dialable p-ANI assignment data received from the p-ANI assignors and p-ANI users. At the end of transition, assignment of non-dialable 211/511 p–ANIs in all states, the District of Columbia, and Puerto Rico transitioned to Neustar as the permanent RNA with no other entity administering or self-assigning 211/511 non-dialable p-ANIs. On September 24, 2012, the Virgin Islands were added to the RNAS. The RNA functions are included in the current Pooling Administration Services contract, FCC13C0007.

In compliance with the current contract, the RNA:

- Provides processes for a standardized application of all administrative p-ANI guidelines;
- Maintains a system containing both hardware and software to facilitate the assignment, tracking, and data reporting requirements; and,
- Maintains and plans for adequate p-ANI inventory.

For further information on the RNA requirements, see Change Order 19 on our website, www.nationalpooling.com, under Documents.

1.5 Neutrality Audits

In April 2011, the PA began participating in the quarterly neutrality audits conducted by Ernst & Young (E&Y). These audits ensure that the PA is not treating one service provider or group of service providers unfairly by delaying action on their applications.

After the end of each quarter, the PA provides to E&Y a list of all assignments (initial, growth, and CO Code) that occurred within the previous quarter, as well as a list of all assignments that had a Part 4 due within the previous quarter. The auditors review the data and select 25 random assignments and 25 entries from the reclamation list for further review. For those selected, the PA provides the following documentation:

Assignments:
- Initial - the Part 1A and the Part 3
- Growth – the Part 1A, MTE and the Part 3
- CO Code – the Part 1, Part 1A, PA MTE, SP MTE, PA suspended Part 3 and Part 3 with an assignment

Reclamation:
- Part 4 form, reminder notice and 2nd overdue notice if applicable.
- Reminder notice(s), if applicable, and Part 3 if the block was returned.

E&Y then examines the documentation to ensure that the PA:
- Adhered to the seven-calendar-day processing window for block and CO Code applications,

- Has proper documentation on file for the applications,
- Followed reclamation notice procedures, and
- Took effective corrective actions when necessary.

The PA participated in this audit process until August 2017, when the acquisition of Neustar by Golden State Capital was completed, as described in Section 1.2. During that time auditors found no issues with PA processing of block or code applications or reclamation activities. The PA will be advised whether and how audit procedures will continue in the future.

1.6 Neustar Pooling Administration Organization Chart – Fig. 1

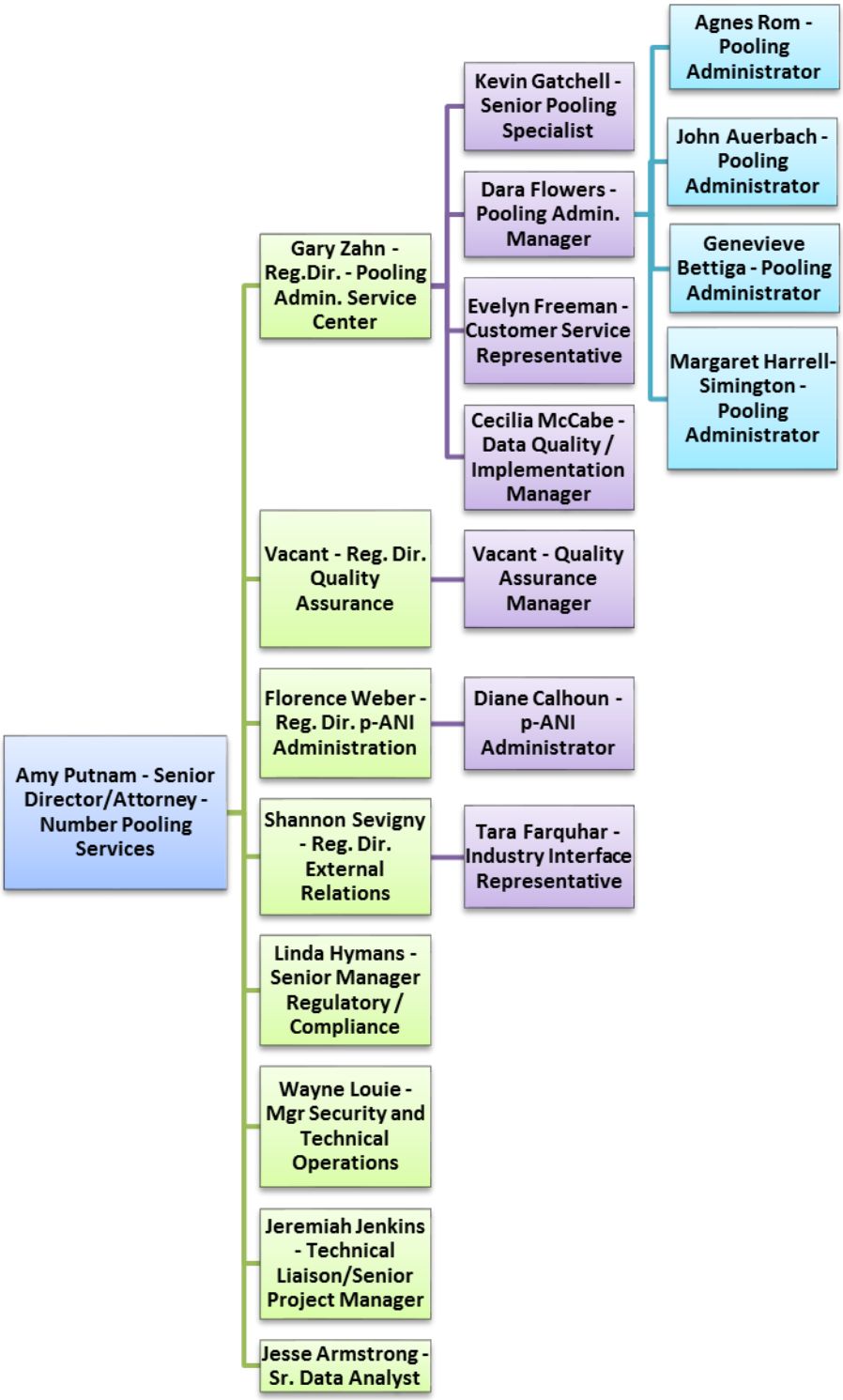

Figure 1 – 2017 Org Chart

Section 2
2017 Neustar Pooling and P-ANI Administration Highlights and Significant Milestones

The following are Neustar Pooling Administration (PA) and Routing Number/P-ANI Administration (RNA/P-ANI) highlights and significant milestones for 2017:

★ **Pooling Contract:**

- On July 7, 2017, the FCC extended the pooling administration contract with Neustar for 6-months, and provided a new expiration date of January 14, 2018.

★ **Pooling Administration (PA) Highlights for 2017:**

- The PA staff processed:
  - 134,389 Part 3s.
    - This total represents 8.7% increase from 2016.
      - 99,197 approvals.
      - 25,402 suspensions.
      - 1,186 withdrawals.
      - 8,604 block or code request denials.
        - 132 were Red Light Rule denials.
    - 100% of those applications were processed within 7 calendar days.
  - 46,799 requests for new resources (containing both multiple block and code requests).
    - Assigned 39,791 blocks.
    - Opened 2,694 NXX codes.
  - 43,595 change requests.
  - 40,082 disconnect requests.
    - 15,143 actual block disconnects.
- The PA staff was authorized to reclaim 12 blocks.
- The PA staff answered and responded to 100% of the 1,593 received calls within 1 business day of which 698 were Help Desk calls

★ **Pooling Administration System (PAS):**

- PAS was available for use 100% of the time, which exceeds the contract performance metric of 99.9%.
- PAS had no unscheduled down time.
- We conducted maintenance on PAS nine times and used only five minutes of the FCC-approved down time in conjunction with the maintenance activities.
- We submitted and were approved for two new PAS change orders; *Change Order 3B Revised* related to the NPAC transition API and *Change Order 4* related to changing the wording of email subjects.
- We continue implementation of *Change Order 3B Revised* and completed implementation of *Change Order 4*.
- We opened and closed 5 trouble tickets.

★ **Reporting:**

- We produced a total of 576 reports for the FCC, states, the North American Numbering Council (NANC), North American Numbering Plan Administration (NANPA), service providers and other, of which 50 were *ad hoc* reports.
- We produced all 50 requested *ad hoc* reports in less than one business day, although we are allowed up to three business days.
- We submitted all 109 required Contract Data Requirements List (CDRL) reports on time and posted them to the website.
- We submitted all 49 additional contract-required reports on time and posted them to the website.

★ **Industry Support:**

- We participated in 97 industry meetings either in-person or by conference call.
- We submitted 8 new issues and 12 new contributions at the Industry Numbering Committee (INC).
- We provided 25 pooling status reports to the NANPA for its meetings.
- We attended 14 NANPA meetings relating to NPA relief and jeopardy, providing an up-to-date pooling status for the affected NPAs.
- We answered a total of 1,662 phone calls within one business day.
- We made 283 changes to rate center information, of which 40% changed the pooling status designation from Excluded to Optional.
- The PA staff met monthly with the Numbering Oversight Working Group (NOWG) through August, providing updates on various PA activities and providing responses to questions. Monthly meetings were suspended from September through December due to the expiration and re-issuance of the NANC Charter. We also participated in the annual performance review, and worked cooperatively with the NOWG to meet suggested improvements while also meeting our contractual requirements.

★ **Customer Focus:**

- We continued sending Tips-of-the-Quarter.
- We noted 146 significant PA customer focus items.
- We had no formal complaints.

★ **Training:**

- We facilitated five state regulatory commission educational sessions on pooling issues.
- The pooling training videos were accessed or downloaded 253 times.

★ **Special Projects:**

- We completed two *MSA-designations review* projects.
- We continued *Seeking Donations*.
- We continued seeking resolution for *Abandoned Codes/Blocks*.
- We completed an *overdue Part 4* project.

★ **P-ANI Administration Highlights for 2017:**

- 25,086 applications processed (Part 3s issued).
- 100% of those applications processed on time.
- 16,318 new p-ANI range assignments made.
- 745 modifications made to existing p-ANI ranges.
- 7,831 p-ANI range returns processed.
- 24 requests to cancel p-ANI returns processed.
- 2 requests denied.
- 166 requests withdrawn.
- 0 requests suspended.

★ **Other P-ANI Activities in 2017:**

- Worked with carriers to resolve data discrepancies.
- Processed carriers' annual reports and semi-annual forecasts.
- Participated in the Emergency Services Interconnection Forum (ESIF).
- Completed and posted the *P-ANI Activity and Projected Exhaust* Report.
- Worked with carriers on supporting documentation issues.
- Continued publishing the P-ANI *Tip of the Quarter.*
- The RNA staff answered and responded to 100% of the 69 received calls within 1 business day.
- There were 32 views for the nine instructional videos.
- We noted 61 significant RNA customer focus items.

★ **Routing Number Administration System (RNAS)**:

- RNAS was available for use 100% of the time, which exceeded the contract performance metric of 99.9%.
- We submitted RNAS Change Order #5 relating to submitting mass new p-ANI requests via Excel.
- RNAS had no unscheduled down time.
- We conducted maintenance on RNAS two times with no downtime.
- RNAS had three trouble tickets opened and two closed.

Following is a synopsis of our major accomplishments during the 2017 reporting period. Details for these activities are found throughout the report.

2.1 Pooling Administration

2.1.1 Contract

In June 2016, the FCC exercised its third and final one-year option for Neustar's contract FCC13C0007, for the period July 15, 2016 to July 14, 2017, which ended the contract. On July 7, 2017, the FCC granted a six-month extension to the contract which expires on January 14, 2018.

2.1.2. Personnel

There were two personnel changes in 2017. In July 2017, we hired a Pooling Administrator, Margaret Harrell-Simington, to fill a vacant position.

In September 2017, Regional Director, Quality Assurance, Bruce Armstrong, retired. Although the position remains vacant because of the proximity of contact completion, his duties were assumed by other members of the pooling team, primarily by the Sr. Data Analyst and the Regional Director of the Concord office. There were no other changes in PA personnel for this time period.

2.2 Pooling Administration

This section describes PA activity in 2017, including information about applications processed, blocks assigned, and NXX codes opened. Productivity statistics for the past five years can be found in Section 10, *Trends in Pooling Since 2013*.

2.2.1 Pooling Administration Productivity for 2017

In 2017, the PA continued its exceptional level of performance. Table 2-1 identifies areas of activity:

Table 2-1
PA Productivity at a Glance

ACTIVITIES	2017 TOTALS
Applications processed (Part 3s):	134,389
Applications not processed in 7 calendar days:	0
Blocks assigned:	39,791
Change requests to existing blocks or codes:	43,595
Disconnects processed (Part 3s):	15,290
Withdrawals:	1,186
Block or code requests denied:	8,604
Central office codes opened:	2,694
Red Light Rule denials:	132
Total blocks reclaimed:	12

Table 2-2 shows a breakdown of applications (Part 3s) by disposition type, including approvals, denials, suspensions, and withdrawals.

Table 2-2
Applications (Part 3s) Processed

Approvals	99,197
Denials	8,604
Suspensions	25,402
Withdrawals	1,186
TOTAL	**134,389**

Table 2-3 and Figure 2 contain the total number of applications processed by activity type.

Table 2-3
2017 Applications Processed by Type

	Approved	Denied	Suspended	Withdrawn	Total
Block Modifications	41,500	644	-	328	42,472
Block Disconnects	15,143	3,328	18,405	62	39,938
Block Cancel Disconnect	18	-	-	-	18
Individual Blocks	31,935	2,690	-	379	35,004
Block Reservations	55	4	-	3	62
Process/Cancel Block Reservations	41	-	-	-	41
Code Modifications	2,080	148	2,101	129	4,458
Code Disconnects	147	913	2,069	15	3,144
LRN Blocks	682	334	467	60	1,543
Dedicated Customer Blocks	920	66	94	4	1,084
Pool Replenishment Blocks	6,213	465	2,266	183	9,127
ISP Disconnects	277	-	-	-	277
ISP Modifications	15	1	-	9	25
ISP Blocks	171	911	-	14	196
TOTALS	**99,197**	**8,604**	**25,402**	**1,186**	**134,389**

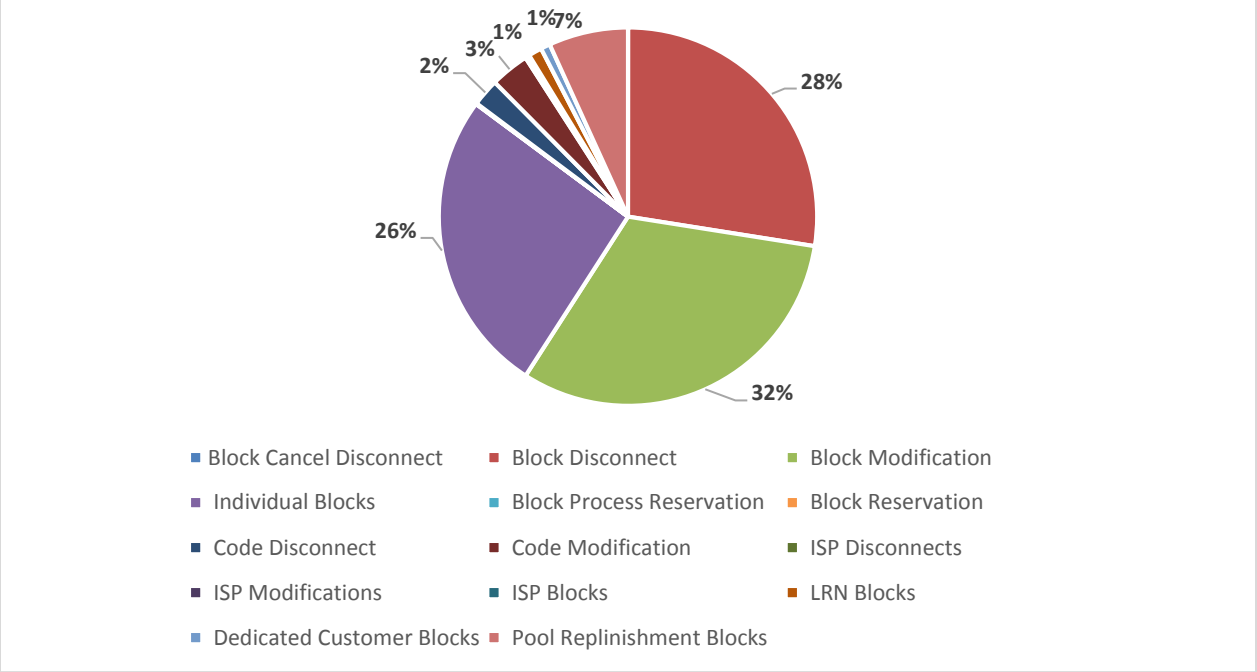

Figure 2: 2017 Pooling Applications by Type

Table 2-4 shows the number of NXX codes opened by the PA in 2017 and for what purpose.

Table 2-4
NXXs Opened by Purpose

PURPOSE	TOTAL	PERCENT OF TOTAL
LRN	434	16%
Dedicated Customer	91	3%
Pool Replenishment	2,169	81%
TOTAL	2,694	100%

The PA also issued 15,623 Part 5s for block disconnects, reclamations, and exchanges during 2017, of which 15,143 were actual block disconnects. This is an increase of 33% from the 2016 total of 11,726.

The PA processed 100% of the 134,389 applications (Part 3s) within seven calendar days, which exceeds the performance metric of 99%.

There were 566,591 assigned blocks in PAS at the end of 2017, as compared with 540,560 at the end of 2016, an increase of 26,031 assigned blocks. This represents a 4.8% increase in the number of assigned blocks in PAS at the end of 2017 as compared to 2016.

Figure 3 below shows the monthly cumulative number of assigned thousand-blocks in PAS for 2017.

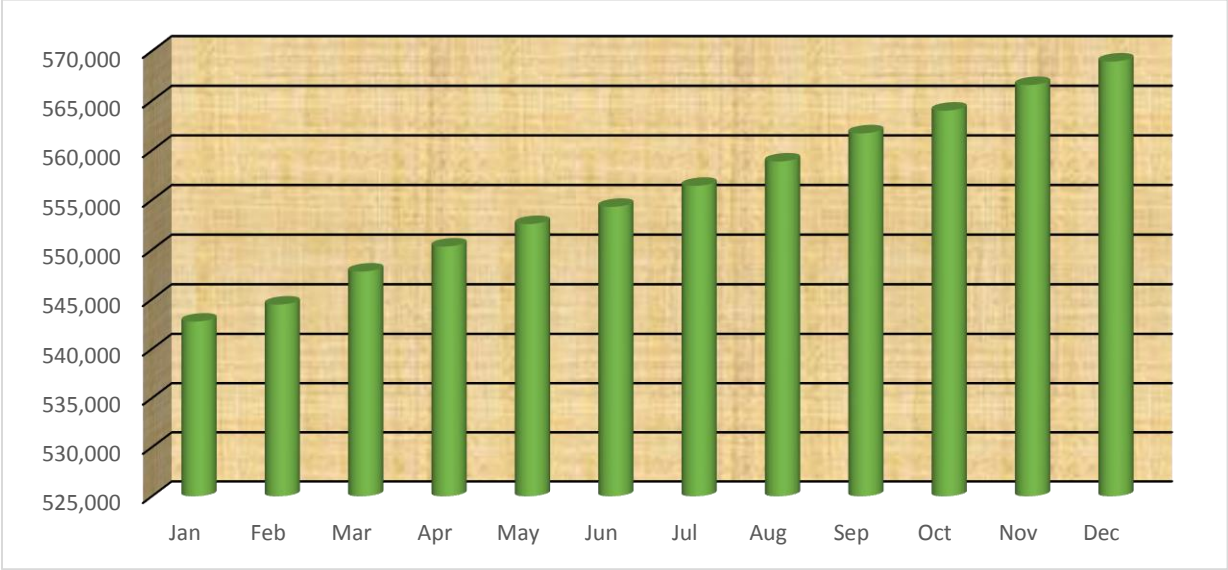

Figure 3: Monthly Cumulative Blocks Assigned in PAS in 2017

Figure 4 below depicts the monthly block assignments made by the PA during each month in 2017.

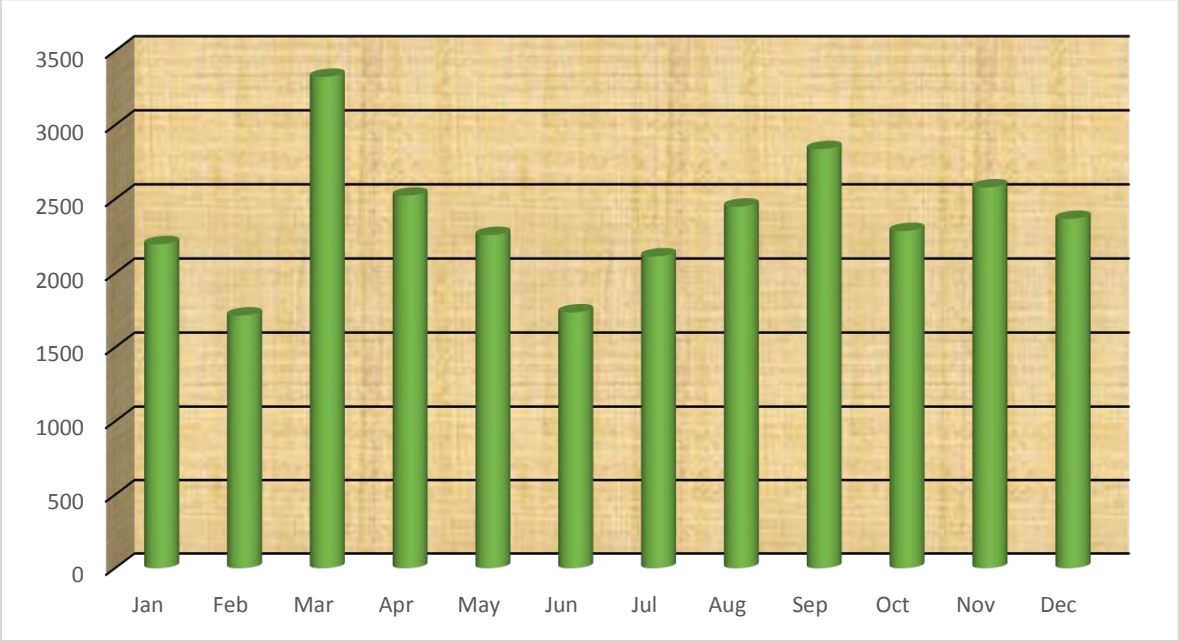

Figure 4: Blocks Assigned by the PA in Each Month in 2017

The total number of applications (Part 3s) processed is a measure of the actual processing work performed by the pooling administrators, because not every application results in the immediate assignment of a thousands-block. Although a large majority of applications for numbering resources are processed and approved immediately, some are suspended for future action, and some are denied or withdrawn entirely. Each of these actions requires work on the part of the pooling administrators and generates a Part 3.

In addition to processing, as a routine part of their job performance, the pooling administrators also:

- Respond to questions and requests for assistance from service providers,
- Review documentation to assure entitlement to initial requests,
- Interact with state commission staff about certification issues and answer questions about the pooling process,
- Assist service providers with questions relating to PAS,
- Educate new users on the pooling processes,
- Search for new block holders for blocks being returned with greater than 10% contamination,
- Search for new code holders for pooled codes being returned with blocks assigned,

- Assist with answering Help Desk calls,
- Work closely with the NPAC Pooling Coordinators to ensure that block requests are handled in accordance with industry guidelines, and
- Work closely with the NANPA Code Administrators to ensure that NXX requests are handled in accordance with INC guidelines.

Figure 5 below provides a complete overview of all applications processed in PAS for 2017, including approvals, denials, withdrawals, and suspended applications.

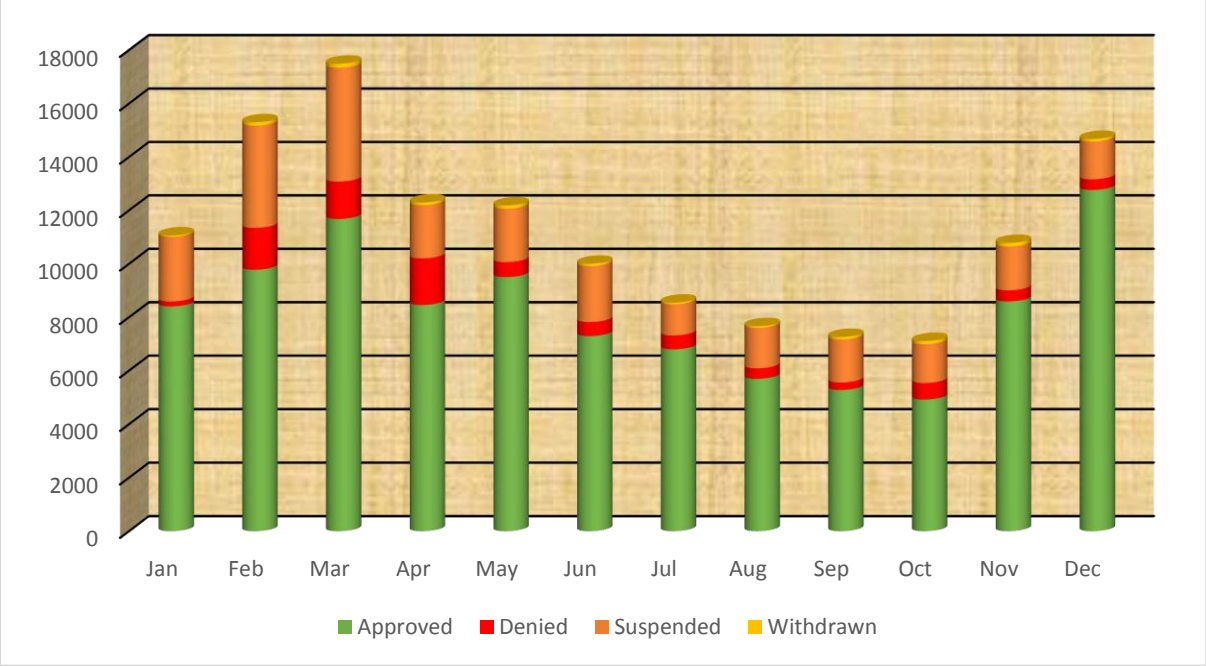

Figure 5: Overview of All 2017 Applications Processed by Status

Tables 2-5 and 2-6 list the ten states and Numbering Plan Areas (NPAs) for which the highest number of applications (Part 3s) occurred in 2017:

Table 2-5
Ten States with Highest Number of Applications (Part 3s)

State	Total Part 3s
CA	25,111
NY	9,123
TX	8,076
FL	6,550
GA	5,913
PA	5,568
IL	4,274
NC	4,161
VA	4,120
OH	3,775

Table 2-6
Ten NPAs with Highest Number of Applications (Part 3s)

NPA	State	Total Part 3s
530	CA	2,137
209	CA	1,607
470	GA	1,451
347	NY	1,422
443	MD	1,393
661	CA	1,391
559	CA	1,243
805	CA	1,199
951	CA	1,191
323	CA	1,157

2.2.2 Pool Replenishment

During 2017, the PA continued to make pool replenishment options available to service providers when required to keep inventories adequate to meet forecasted demand.

The PA has no authority to actually replenish the inventory pools, because it is not authorized to obtain resources directly. However, we manage the process by determining when a pooling rate center inventory will either be equal to or fall below the aggregated six-month service provider forecasts, which then allows service providers to replenish the pool. For replenishment, the PA has to rely on the service providers that can meet both the MTE (Months-to-Exhaust) and utilization requirements to open an NXX code and then have them provide blocks from that NXX code to the pool.

There was an 11% decrease in the number of applications for blocks for pool replenishment in 2017, with 2,810 applications, as compared to 3,165 applications in 2016. The number of codes opened for pool replenishments from those applications decreased by 23% in 2017, with 2,169 NXX codes opened compared to 2,827 NXX codes opened in 2016.

Table 2-7 is an overview of pool replenishment statistics in 2017.

Table 2-7
2017 Pool Replenishment Overview

Average number of rate centers per month that had less than a six-month inventory	1,220
Percentage of total number of rate centers per month that had less than a six-month inventory	6.6%
Average number of rate centers per month that had no blocks available with forecast	448
Number of CO code requests for pool replenishment	2,810
Number of CO codes opened for pool replenishment	2,169

Tables 2-8 and 2-9 show the ten states and NPAs which had the most pool replenishment activity in 2017.

Table 2-8
Ten States with the Most Pool Replenishment Activity

State	Codes Opened
CA	216
TX	192
NY	139
GA	125

State	Codes Opened
FL	100
TN	76
IL	75
OH	75
NC	74
PA	66

Table 2-9
Ten NPAs with the Most Pool Replenishment

NPA	State	Codes Opened
470	GA	47
539	OK	32
929	NY	27
281	TX	26
678	GA	21
806	TX	21
385	UT	20
803	SC	20
843	SC	20
205	AL	18

2.2.3. Interconnected VoIP Direct Access Order

On June 22, 2015, the Federal Communications Commission (FCC) released the VoIP Direct Access order establishing a process to authorize interconnected VoIP (iVoIP) providers to obtain telephone numbers directly from the Numbering Administrators. We have been providing additional support for iVoIP providers and state regulators since the order became effective and the FCC began accepting applications for authorization in February, 2016.

Once an iVoIP provider's numbering authorization application is granted, the applicant can immediately provide states from which it intends to request numbers the required 30-days' notice. The first numbering resources were assigned to an iVoIP entity in May 2016.

By the end of 2017, a total of 39 applications had been submitted to the FCC for direct access authorization, with a total of 20 approved.

We continue to support and educate iVoIP providers on application processing requirements, proper supporting documentation, and the information needed in 30-day notification letters. We created a **"***Getting started for interconnected VOIP providers***"** quick sheet that provides guidance on the rules and industry guidelines related to iVoIP direct access to numbering resources. In addition, we have a "*New Service Provider Checklist*" to assist with process questions.

We also continue to maintain and update the "*VoIP Provider 30-day Notification State Regulatory Contact Sheet*" which is posted to our website. We developed the file with information obtained from state regulatory authorities about state-specific 30-day notification requirements, as well as contact information for each state. It is intended to save iVoIP providers time when submitting a 30-day notifications to a state.

To save time and prevent the need to resubmit documentation or applications, we also work one-on-one with the iVoIP applicants to explain the rules and guidelines so the applications for numbering resources can be processed as quickly as possible. We have spent a tremendous amount of time with individual iVoIP providers' personnel going over what documentation they need and how to submit applications through PAS.

In addition, we continue sending regular updates to the state commissions whenever new applications or filings are made and when applications are submitted in their states. We continue to work with the FCC on some more complex regulatory issues surrounding whether the iVoIP entities have to follow individual state regulations for new carriers.

We also continue to work through INC to update the applicable guidelines.

Table 2-10 details the total number of applications processed for iVoIP providers in 2017:

Table 2-10
iVoIP Applications (Part 3s) Processed

Approvals	3,006
Denials	447
Suspensions	476
Withdrawals	84
TOTAL	**4,013**

2.2.4 Reclamation in 2017

The PA initiates reclamation according to the *Thousands-Block Number (NXX-X) Pooling Administration Guidelines* (TPBAG), which directs that, "[a] thousands-block assigned to a service provider should be placed into service by the applicable activation deadline, that is, six-months after the original effective date returned on the Part 3 and entered on the BCD/BCR screen in BIRRDS." Each thousands-block assignment has an associated "Part 3 effective date," which is the date the individual numbers in the thousands-block become available to be assigned to customers. The block holder confirms that the thousands-block is in service by submitting a Part 4 to the PA. If the PA does not receive the Part 4 during the first five months following the original effective date identified on the Part 3, the PA sends a reminder notice to the block holder. The PA also sends a second reminder to the SP on the day after the Part 4 was due.

If the Part 4 is not received within six months of the original Part 3 effective date, the Part 4 is considered delinquent and the thousands-block is eligible to be reclaimed. By the 10th calendar day of each month, the PA sends a list of delinquent Part 4s for the thousands-blocks from the previous month to the appropriate state commission or FCC.[1] The PA had to address 3,703 blocks on the overdue Part 4 reports in 2017. This represents a 30% increase from the 2016 total of 2,840. Of those, 1,117 blocks were new in 2017, which is only a slight increase from the 2016 total of 1,081.

The PA website provides detailed information about the reclamation process, as well as contact information for the participating state commissions and FCC.

The PA cannot reclaim a block without authorization from the appropriate regulatory body, which may authorize the PA to initiate block reclamation, but then may halt the reclamation process if, for example, it is determined that numbers in the blocks are actually in service. In 2017, regulators authorized the PA to initiate reclamation on 34 blocks. Of those, 12 thousands-blocks were actually reclaimed; one each in Colorado, Alabama, Mississippi and Oregon, two in Washington, and six in Georgia.

Following is a table of all reclamation activity in 2017:

Table 2-11
Reclamation Activity in 2017

Month	Total Number of Blocks with Overdue Part 4s	Total Number of NEW blocks with Overdue Part 4s	Total Number of Blocks for which Reclamation was Initiated[2]	Total Number of Blocks Reclaimed
January	261	68	4	0
February	299	109	1	1
March	475	284	1	2
April	484	93	0	1
May	459	65	0	0
June	294	53	1	0
July	226	68	24	0
August	183	27	0	0
September	224	89	0	8

[1] The FCC Report and Order and Further Notice of Proposed Rulemaking released March 31, 2000 (1st NRO Order) delegated authority to the state commissions to determine whether a thousands-block should be reclaimed or not. The FCC makes reclamation decisions for those states that have opted not to exercise their reclamation authority.

[2] While a state may authorize the PA to initiate block reclamation, not all blocks in this category have actually been reclaimed. In some cases the reclamation process is halted if it is determined that the blocks are actually in service.

October	266	126	0	0
November	278	63	1	0
December	254	72	0	0
TOTAL	**3,703**	**1,117**	**32**	**12**

2.2.5 Pooling Administration Customer Support / Help Desk

The Pooling Customer Support Representative (CSR or Help Desk) responds to both internal and external questions and requests for technical support, and attempts to promptly confirm the cause of a problem. In 2017, the CSR handled approximately 698 calls from customers, which is a slight decrease from the 2016 total of 875 and the lowest total in five years. For more details on Pooling Administration Customer Support / Help Desk see Section 8.6.1.

2.3 Pooling Administration System (PAS)

2.3.1 PAS Performance

PAS was available 100% of the time in 2017, with no unscheduled down time, once again notably exceeding the contract requirement of 99.9% availability. PAS was unavailable for only one instance of scheduled down time for a total of 5 minutes on March 8.

We conducted builds and maintenance on PAS nine times; on January 13, January 20, February 24, March 24, May 15, June 2, August 4, September 29, and December 14. There was no down time associated with these maintenance activities. We also completed disaster recovery testing.

We opened and closed five PAS Trouble Tickets in 2017.

For more details on PAS performance and trouble tickets for PAS see Section 6.

2.3.2 PAS Change Orders

Changes and improvements to PAS are generally driven by changes to FCC rules, industry guidelines, or specific service provider or regulatory requests. If changes or suggested improvements require a change to PAS, we submit a change order proposal to the FCC to modify the contract. The PA must provide a written assessment regarding the impact of scope of work, time and costs to the INC, the NANC and the FCC within 30 days of initial closure of any changes to the INC Guidelines that have such an impact.[3]

[3] FCC Contract No. FCC13C0007, Section 2.5.4 of Attachment A dated May 15, 2013

The NOWG reviewed PA change order proposals and provides recommendations to the FCC. To facilitate the review process, the Regional Director, External Relations served as the liaison with the NOWG, and was available to address any questions that may arise from their review of any change order proposal.

There were two PAS changes submitted, and approved in 2017 and one was fully implemented; *Change Order 3B Revised* related to the development and support of the PAS NPAC API, and *Change Order 4* related to changes to PAS-generated emails based on INC Issue 830, *NAS and PAS Email/Report Enhancements*. *Change Order 3B Revised* is in process and *Change Order 4* was implemented.

Further details about the PAS change orders submitted in 2017 can be found in Section 6.1.3.2.

2.3.3 PAS Training Videos

Our training videos were first made available on our website for PAS on September 29, 2010, and were so popular that we subsequently assisted NANPA with development of its own training video program.

In 2017, there were 253 total views of the 14 PAS training videos which represents a 16% increase from 2016. While we did not add any new videos in 2017, we continue to see robust viewing of the existing videos. By far, the most popular video remains "New to Pooling Quick Start," which accounted for 32% of the views.

Table 2-12 contains the training video names and the number of times each video was accessed. These totals do not include downloaded or shared videos as there is no method for tracking those.

Table 2-12
2017 PAS Training Video Views

	Training Video	Number of Times Viewed
1	New to Pooling Quick Start	80
2	Mass Modifications	5
3	Change Order 20	3
4	How to Complete the MTE Worksheet	19
5	PAS Effective Date Scenarios for Block Requests and Donations	18
6	PAS Password Reset	5
7	Change Orders 9 and 10	1
8	Change Order 11	1
9	Redesigned Nationalpooling.com Website Training video	13
10	Overview of PAS and the Pooling Website for Service Provider and Service Provider Consultant Users	35
11	Overview of PAS and the Pooling Website for Regulatory Users	28

	Training Video	Number of Times Viewed
12	Release of Enhancements to the PAS Training Session for Service Provider and Service Provider Consultant Users	37
13	Release of Enhancements to the PAS Training Session for Regulatory Users	8
14	Chrome Browser Release How it Affects PAS Drop Down Menus (temporary video)	0
	TOTAL VIEWS	**253**

2.4 Data Quality and Pooling Implementation Management

The Data Quality and Implementation Manager (DQIM) manages the quality control and maintenance of the rate center data located on the website, completes the semi-annual forecasting reports, updates PAS in the event of area code relief, and provides status updates for the industry at NANPA meetings. The DQIM also managed quarterly neutrality audits conducted by Ernst & Young (E&Y) through August to ensure that the PA is not treating one service provider or group of service providers unfairly by delaying action on their applications.[4] In 2017, the DQIM attended 14 NANPA meetings, and provided 25 pooling status reports to the NANPA for its meetings.

2.4.1 Rate Center Data Quality Control and Maintenance

The NPA/Rate Center Reports identify the pooling participation level status designation of all rate centers in each NPA, including where service providers are either required to participate in pooling (Mandatory), are required to participate when a second service provider enters the rate center (Mandatory Single Service Provider), where pooling is not required, but either the state or a carrier has requested that the rate center be opened in PAS (Optional), or where no carrier has chosen to pool (Excluded).

The six current status designations of rate centers as defined in the *NPA/Rate Center Reports* are: Mandatory (M), Mandatory State (M), Mandatory Single Service Provider (M*), Mandatory State Single Service Provider (M*), Optional (O) and Excluded (X). For status designation definitions see Section 3.

[4] For more about the quarterly audits, see Section 1.5.

Table 2-13 shows the total number of distinct pooling rate centers in PAS that were maintained by the DQIM from 2013 through 2017.

Table 2-13
Total Number of Distinct Pooling Rate Centers in PAS – 2013 through 2017

STATUS DESIGNATION	2013	2014	2015	2016	2017
M*	408	359	330	321	279
M	5,044	5,086	5,101	5,110	5,143
O	6,089	6,098	6,284	6,369	6,495
M	3,505	3,729	3,775	3,788	3,840
M*	773	804	758	743	690
X	2,719	2,452	2,267	2,176	2,043
Total	**18,538**	**18,528**	**18,515**	**18,507**	**18,490**
Total Pooling Rate Centers	**15,819**	**16,076**	**16,248**	**16,331**	**16,447**
Total Mandatory Pooling Rate Centers	**8,549**	**8,815**	**8,876**	**8,898**	**8,983**

2.4.2 Rate Center Information Changes

The DQIM is responsible for the accurate recording of all pooling information associated with every NPA, including the status designation for each rate center. In addition, the DQIM monitors and makes all of the changes related to pooling rate centers that occur as a result of FCC and state orders and Office of Management and Budget (OMB) directives.

Changes to rate center file information have been available in real-time through the website since September 2008. In 2017, the PA made 283 rate center information changes. Of those, 127 were rate center status designation changes, of which 49% were from Excluded to Optional.

Table 2-14 shows the type of information change and how many rate centers were changed during each month in 2017.

Table 2-14
Summary of Rate Center File Changes for 2017

REASON	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
Changes in Status:													
M* to M		11	3	11	1	1	1	2	27	23	1		81
M* to M			13	5			3	8	11	22	7	6	75
M to M*													0
M to M*													0
M to M													0
M* to M*													0
O to M													0
O to M*													0
O to M													0
O to M*													0
O to M*													0
X to M													0
X to M*													0
X to M*													0
X to O	4	8	15	25	7	8	5	4		12	27	12	127
New Rate Centers													0
													0
Rate Center Name Change													0
													0
MSA Changes													0
TOTALS	**4**	**19**	**31**	**41**	**8**	**9**	**9**	**14**	**38**	**57**	**35**	**18**	**283**

2.4.3 NRUF/Semi-Annual Forecast Report

The NRUF (Numbering Resource Utilization/Forecasting) report (Form 502) is used by the NANPA to monitor and project exhaust in individual area codes as well as in the NANP overall. Service providers participating in pooling are required by Section 6.0 of the TBPAG to submit their respective NRUFs to the NANPA on a semi-annual basis on or before February 1 for the period ending on December 31, and on or before August 1 for the period ending on June 30 of each year. Service providers also submit their *Thousands-Block Forecast Report* (Appendix 1 in the TBPAG) to the PA for each of their separate Operating Company Numbers (OCNs) at the thousands-block level, per rate center, for every NPA in which they have resources, as of June 30 and December 31, each year. This semi-annual report includes a five-year forecast of demand for blocks by year. The data provided by the service providers in these forecasts is treated as confidential by the PA. The PA then uses this data to fulfil two Contract Data Requirements List (CDRL) report requirements:

- the Semi-Annual Pooling Forecast referenced in Section 4.6.2.1, and
- the Rate Area Inventory Pool Status Report referenced in Section 4.6.2.2**.**

During 2017, the PA aggregated the data provided by the service providers at the rate center level for all NPAs in pooling. We used this data to provide a rate center level NRUF to NANPA and to determine if a critical industry inventory insufficiency existed within any rate center. The PA forwarded its aggregated NRUF data to the NANPA, and provided a separate consolidated forecast report to the FCC according to the required deadlines, on February 15 and August 10.

In addition, we had to do a complete update of the February 15 reports because six days after submitting the reports we became aware that a carrier had filed its latest forecasts after the deadline, and it significantly impacted the forecasts. Thus, to be consistent with previously filed reports, we ran the reports again to include those late-filed forecasts. We submitted those reports on Feb 22.

Table 2-15 contains the PA NRUF/forecast results for both semi-annual reporting periods in 2017.

Table 2-15
NRUF/Forecast Results for 2017

Date	NPAs	Jurisdictions	Blocks Forecasted	Blocks Available	Codes Forecasted
February	309	52	49,870	141,579	3,805
August	311	52	42,674	142,943	2,881

2.5 Regulatory and Compliance

2.5.1 Regulatory Update Conference Calls

In 2017, the PA participated in five regulatory update conference calls: on February 23, April 27, July 27, October 5, and December 14. Topics included updates on pooling and p-ANI administration activities, the FCC VoIP order, updates to PAS and RNAS, and relevant INC issues.

2.5.2 Regulatory Educational Sessions

The PA conducted five educational sessions about pooling for state regulatory personnel in 2017. Our goal in conducting training sessions for regulators is to make it easier for them to respond to thousands-block pooling issues in their states. During the pooling educational sessions, we reviewed various pooling processes and procedures such as reclamation, forecasting, and applications processing, in addition to the information and reports available through the website.

Table 2-16 summarizes the regulatory educational sessions facilitated by the PA in 2017.

Table 2-16
Regulatory Training Sessions in 2017

Date	State	Type	Description
January 26	Maryland	Conference call	Pooling overview
February 23	Oklahoma	Conference call	Pooling overview
May 10	Nevada	Conference call	Pooling overview
September 19	Wyoming	Conference call	Pooling overview
November 2	Utah	Conference call	Pooling overview

2.5.3 Regulatory Support

The PA supports state regulators throughout the year by providing education on pooling processes and website navigation. We responded to hundreds of emails and telephone inquiries from state regulators regarding issues such as application processing, state waiver rules, certification, VoIP Direct Access order, and reclamation. We also continued to provide support for state regulators as they addressed number conservation and NPA relief planning issues by attending NANPA meetings relating to NPA relief and jeopardy procedures.

2.5.4 Debt Collection Improvement Act of 1996 (Red Light Rule)

The "Red Light Rule"[5] provides that anyone filing an application or seeking a benefit from the FCC or one of its components (including the Universal Service Administrative Corporation, the Telecommunications Relay Service, or the North American Numbering Plan Administrator) who is delinquent in debts owed to the FCC will be barred from receiving a license or other benefit until the delinquency has been resolved. The FCC determined that numbering resources constitute a benefit, and has directed the PA to withhold assignment of numbering resources to any entity identified by the FCC as delinquent in its payments to them.

The PA processed 132 denials as a result of the Red Light Rule in 2017, which is a 17.5% decrease from the 160 in 2016.

[5] Based upon the *Debt Collection Improvement Act of 1996*, FCC 04-72, MD Docket 02-339, adopted March 25, 2004.

2.5.5 Reporting Compliance

The PA contract directs that certain Contract Data Requirements List (CDRL) reports be submitted each year.

2.5.5.1 Contract Data Requirements List (CDRL) – Recurring Reports

The following CDRL reports are submitted annually, semi-annually, quarterly, or monthly. Table 2-17 contains the CDRL recurring reports that were submitted by the PA during the 2017 calendar year according to the established deadlines. In 2017, the PA submitted 109 CDRL reports, which are all available on the PA website[6].

Table 2-17
Recurring CDRL Reports Submitted in 2017

Report Name	Total Reports
Staffing Report	12
Thousands–Block Pooling Report	12
PAS Performance Report	12
Ad Hoc Reports	12
Pooling Matrices Report	4
Forecasted Demand	3
Rate Area Inventory Pool Status	3
Annual	1
By Request *(Ad Hoc)*	50
TOTAL	**109**

2.5.5.2 Other Required Reports

Table 2-18 lists the 49 other reports required by the contract that the PA submitted in 2017.

Table 2-18
Other Required Reports Submitted in 2017

Report Name	Total Reports
Staffing Report (SOC)	12
Monthly Pooling Metrics	12
P-ANI Monthly Report	12
RNAS Performance	12
Inventory	1
TOTAL	**49**

[6] The By Request (Ad Hoc) reports total is an aggregate of individual reports requested by and provided to customers, so they are therefore not posted the website.

2.6 Special Projects in 2017

2.6.1. Changes to Metropolitan Statistical Area (MSA) Rank and Name

If there are changes to Metropolitan Statistical Area (MSA) information, the United States Office of Management and Budget (OMB) releases a bulletin. The PA monitors the website so that we know when bulletins are issued, and then investigates the impact on the status designations of rate centers in the pools. The OMB usually releases any updates to the definitions and/or composition (*i.e.,* counties or other political divisions) of Metropolitan Statistical Areas once per year. These bulletins can contain any or all of the following:

- Changes to the composition of a specific MSA
- Creation of new MSAs
- Deletion of an MSA where its political divisions have been reassigned to another MSA or a or newly-created MSA
- Renaming of MSAs based on city populations (each MSA name contains up to three principal cities in decreasing order of population). This usually amounts to reordering of city names or the removal or addition of principal city names.

In addition, we monitor the Census Bureau website to determine when new census estimates are available. When we find something new, we review the population estimates and make all of the appropriate updates to the ranking of the top-100 MSAs.

The PA completed two MSA projects in 2017, one based on changes to census estimates and the other based on changes contained in an OMB bulletin.

In June, upon determining that the 2016 census estimates were available, we reviewed the population estimates and made the appropriate updates to determine how it affected our MSA list. Based on this data we made two changes to the top 100; the Chattanooga, TN-GA MSA was moved into the top 100, and the Deltona-Daytona Beach-Ormond Beach, FL MSA dropped to number 104. These changes had no effect on mandatory pooling requirements. Additionally there were many rearrangements in placement on the list due to adjustments in populations.

On August 15, 2017, the OMB issued bulletin number 17-01. We investigated the impact on the status designations of rate centers in the pools and determined that the Twin Falls, ID was moving from a Micropolitan Statistical Area status to become an MSA. Despite the change, the MSA did not move into the top 100 MSAs so there was no effect to the Top-100 MSA list.

2.6.2 Seeking Voluntary Disconnects (formerly Donations)

In a proactive effort to prevent the unnecessary opening of NXX codes, we developed a process beginning in May 2010 that could conserve numbers in rate centers when an incoming service provider (SP) requests that the rate center designation be changed from “Excluded” to “Optional”. In this circumstance, we seek voluntary block disconnects (formerly donations) from existing SP(s) in that rate center so that the incoming SP can request blocks instead of opening a new code. The process of requesting blocks involves verifying which SPs presently operate in the rate center, getting the contact information for them, and then sending each of them emails, which takes the PA a lot of extra time.

In 2017, the PA attempted to secure voluntary block disconnects (formerly donations) for 106 rate centers being changed from Excluded to Optional. We were able to obtain disconnects (formerly donations) for 17 of those rate centers, thereby potentially saving the opening of 17 NXX codes.

At times a carrier will also contact us to request that we seek donations in a pooling rate center it is entering that has no blocks available because it is either a single-service provider rate center, or, although it is already available for pooling, to prevent the opening of an NXX code. This is especially useful in low population areas where blocks added to the pool from opening an NXX code may never be utilized. In 2017, we were asked to request voluntary block disconnects (formerly donations) in 91 optional pooling rate centers that did not have any available blocks. We requested disconnects (formerly donations) and received disconnects for 29 of the rate centers. This process saved 29 NXX codes from being opened.

2.6.3 Abandoned Codes/Blocks:

When we are made aware that a company has abandoned pooled codes and blocks, we work with state regulators to obtain permission to reclaim the numbering resources as abandoned. We also work with NANPA for pooled code reclamation and the NPAC to disconnect any LRNs or ported TNs from the NPAC for these companies. If there are customers on the codes or blocks, we seek new resource holders so that customers are not put out of service.

The following is a summary of abandoned code/block activity for this period:

- Five companies in six states abandoned pooled codes and/or blocks.
- 30 emails were sent out looking for new code or block holders.
- 15 pooled codes were transferred to new code holders.
- One pooled code still needs a new code holder.
- One pooled block was transferred to a new block holder.
- 65 blocks were disconnected and put back into the available pools.

2.6.4 Old Overdue Part 4 Project

During 2017, we undertook another project to reduce the number of old overdue Part 4s on the cumulative reclamation lists. We contacted the regulatory staff at four state commissions in an attempt to resolve and remove 119 blocks from the cumulative list, some of which dated back to 2011. By the end of the year we had only 38 overdue Part 4s on the lists in three of the states, for a reduction of 68%, while one state was able to eliminate its list entirely.

2.7 Routing Number Administration (a/k/a P-ANI)

2.7.1 Background

The PA assumed the responsibility of assigning Emergency Service Query Keys (ESQKs) under certain limited circumstances as the Interim Routing Number Administrator (IRNA) on September 8, 2006. When the FCC awarded the second PA contract in August, 2007, it included the provision that the PA would act as the permanent p-ANI Administrator (a/k/a Routing Number Administrator or RNA) at such time as the FCC would direct the permanent process.

The PA began the development process for the first national Routing Number Administration System (RNAS), the P-ANI Administration website, and p-ANI administration processes when the FCC approved the permanent process in Change Order 19 on June 17, 2011. RNAS went live on March 19, 2012, and is accessible from the dedicated p-ANI website. The website is not only the gateway to the RNAS but contains public information such as reports and documents. The P-ANI Administrator also trains users to understand what types of documentation are required to assure that applicants are eligible in the areas in which they are requesting p-ANIs, and responds to requests for ad hoc reports and inquiries.

2.7.2 2017 P-ANI Administration Highlights:

2.7.2.1 Productivity for 2017:

In 2017, the P-ANI Administrator processed not only applications but also carriers' annual reports and forecasts. The forecasts are used to develop the *P-ANI Activity and Projected Exhaust Report* found in Section 2.7.4. We processed annual report files for 77 unique NENA ID/OCN combinations and 5 forecast files.

Table 2-19 addresses the count of p-ANIs requested, assigned, returned, or modified on a monthly basis. This is not to be confused with the number of applications processed, which can be found in Table 2-20.

Table 2-19
Total Number of p-ANIs by Activity Type

	REQUESTED	ASSIGNED	RETURNED	MODIFIED
Jan	2,222	2,168	11,258	0
Feb	7,545	2,458	2,110	0
Mar	56,860	31,215	1,382	609
Apr	10,033	9,982	2,479	5
May	34,600	34,303	8,092	1,251
Jun	12,309	12,364	5,253	193
Jul	8,077	8,175	3,177	2,281
Aug	9,969	9,977	4,689	1,107
Sep	30,134	31,543	891	11
Oct	13,340	14,016	5,031	0
Nov	18,686	19,221	3,163	1
Dec	12,388	12,327	558	1
TOTAL	**216,163**	**187,749**	**48,083**	**5,459**

Table 2-20
Applications Processed by Request Type

	Approved	Denied	Suspended	Withdrawn	Total
Cancel p-ANI Return Request	24	0	0	0	**24**
P-ANI Modification Request	745	0	0	3	**748**
New p-ANI Request	16,318	2	0	163	**16,483**
P-ANI Return Request	7,831	0	0	0	**7,831**
TOTAL	**24,918**	**2**	**0**	**166**	**25,086**

The following table is a summary of p-ANI inventory as of December 31, 2017.

Table 2-21
P-ANI Inventory as of December 31, 2017

STATUS	TOTAL p-ANIs	211	511
ASSIGNED	870,652	406,740	463,912
AGING	576	203	373
AVAILABLE	5,469,262	2,756,469	2,712,793
UNAVAILABLE	19,510	16,588	2,922
TOTALS	6,360,000	3,180,000	3,180,000

2.7.3 Other 2017 P-ANI Administration Activities

In addition to processing requests for p-ANI ranges, the P-ANI Administrator performed many other functions during 2017.

2.7.3.1 Annual Report

P-ANI assignees are required to report to the P-ANI Administrator on all of their assigned p-ANI ranges via the *P-ANI Annual Report* (Appendix 2) on an annual basis. For 2017, there were **77** unique NENA ID and OCN combinations that filed an annual report. During this process, we were able to identify p-ANI ranges that had not been previously reported and show those p-ANI ranges as assigned. We also worked with the carriers to identify p-ANI ranges that were not in use and could be returned to the available inventory as a result of this filing.

2.7.3.2 Duplicate Assignment Issues

In 2017, we were notified of 461 p-ANI ranges that had been assigned by the p-ANI Administrator, but appeared to be already in use by another carrier. We worked with the affected carriers to determine if

the range was actually in use or not. If the range was not being used, then it was removed from the applicable routing databases by the old carrier so that the new carrier could use the range. If the range was in use, we replaced the assignment with a new range, and updated the RNAS to reflect that the original range had been assigned. We also advised the carrier that reported the p-ANI range as being available to update its records so that the range would be properly reflected in its next annual report. The original assignment would have occurred prior to our assumption of assignment responsibility.

2.7.3.3 Customer Support:

For all new p-ANI requests, a carrier must demonstrate that its company is permitted under applicable law to access p-ANI resources in the area for which the p-ANI resources are sought. If the carrier fails to provide the correct documentation with its request for p-ANIs, we send a courtesy email. We also assist carriers who are having difficulties locating the correct documentation to find the documents, to help alleviate any delays in obtaining these critical resources.

In 2017, we sent courtesy emails for 1,306 requests, which is a 483% increase from the total of courtesy emails for 224 requests sent in 2016. In addition, we researched and provided applicants with the missing documents for 365 requests, which is a 421% increase from the total number of documents provided for 70 requests in 2016. These totals can be attributed to having a record number of assignments, as well as new customers submitting requests for the first time.

The P-ANI Administrator also functions as a customer support desk, which processes new user registrations and user profile updates, and responds to p-ANI-related questions, as well as questions regarding RNAS user accounts and passwords. For further details on Routing Number Administration (RNA) Customer Support /Help Desk, see Section 8.6.2.

2.7.4 P-ANI Activity and Projected Exhaust Report

The ATIS Industry Numbering Committee developed the *P-ANI Administration Guidelines*, which contain the following language:

"The RNA shall:

a) prepare and publish a "p-ANI Activity and Projected Exhaust Report" that includes the following information:

1. national p-ANI utilization information;
2. p-ANI utilization by NPA;
3. the number of p-ANIs requested on a monthly basis;
4. the number of p-ANIs assigned on a monthly basis;
5. the number of p-ANIs returned on a monthly basis;
6. the number of p-ANIs modified on a monthly basis;
7. the number of p-ANI requests processed and the disposition of each; and
8. forecast reports for projected future p-ANI resource usage."

This report contains the required information for January 1 – December 31, 2017, and contains the following tables: Table 1-1 addresses the number of p-ANIs requested, assigned, returned, or modified

on a monthly basis; Table 1-2 addresses requests processed and the disposition of each; and Table 1-3 addresses national p-ANI utilization, p-ANI utilization by NPA, and forecast reports for projected future p-ANI resource usage.

The RNA administrator posted this report as shown in Table 2-22 to the website www.nationalpani.com, notified the INC and RNAS users that the information was available, and included it in the subsequent annual report required by the FCC contract.

Table 2-22
Projected Exhaust of 211/511 p-ANIs

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
201	NJ	9,172	526	2037	3
202	DC	512	448	2060	3
203	CT	7684	404	2046	2
205	AL	3906	454	2051	2
206	WA	843	400	2064	4
207	ME	8,378	300	2055	3
208	ID	4,733	269	2073	4
209	CA	5,713	630	2039	3
210	TX	6,748	524	2041	2
212	NY	5,686	654	2038	4
213	CA	3,039	530	2048	1
214	TX	8,159	524	2039	3
215	PA	4,338	454	2050	2
216	OH	1,440	560	2049	1
217	IL	4,518	630	2041	3
218	MN	3,282	690	2040	1
219	IN	4,004	380	2058	1
220	OH	50	400	2066	4
223	PA	50	0	N/A	N/A
224	IL	7,858	684	2034	4
225	LA	1,092	259	2089	1
228	MS	1,761	429	2059	3
229	GA	1,809	434	2058	4
231	MI	4,261	615	2042	3
234	OH	305	400	2065	1
239	FL	878	454	2058	1
240	MD	409	448	2060	3
248	MI	6,079	843	2033	3
251	AL	1,345	414	2061	1

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
252	NC	3,257	370	2061	2
253	WA	1,363	415	2061	4
254	TX	7,667	536	2039	1
256	AL	2,360	379	2063	3
260	IN	2,154	304	2075	3
262	WI	487	375	2068	1
267	PA	50	400	2066	4
269	MI	2,034	443	2057	3
270	KY	2,764	294	2075	3
272	PA	180	400	2066	3
276	VA	1,637	464	2056	3
281	TX	14,472	668	2024	2
301	MD	1,557	454	2057	3
302	DE	1,547	354	2068	1
303	CO	7,265	494	2042	4
304	WV	8,504	464	2041	4
305	FL	4,094	584	2043	1
307	WY	3,097	454	2053	1
308	NE	1,982	405	2060	2
309	IL	4,093	479	2049	1
310	CA	3,169	470	2052	4
312	IL	3,350	500	2049	2
313	MI	866	415	2062	1
314	MO	8,712	510	2038	1
315	NY	7,618	892	2030	4
316	KS	4,291	224	2086	1
317	IN	3,782	355	2062	3
318	LA	2,676	234	2090	1
319	IA	1,477	300	2078	3
320	MN	1,621	454	2056	2
321	FL	1,401	644	2045	4
323	CA	4,135	480	2049	1
325	TX	7,813	530	2039	4
330	OH	5,732	490	2045	1
331	IL	80	400	2066	4
332	NY	50	0	N/A	N/A
334	AL	4,219	405	2055	4
336	NC	2,334	305	2074	4

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
337	LA	1,526	215	2102	4
339	MA	360	240	2098	4
340	VI	380	0	N/A	N/A
346	TX	50	400	2066	4
347	NY	50	600	2049	2
351	MA	370	240	2098	4
352	FL	1,479	695	2043	3
360	WA	2,542	410	2059	3
361	TX	6,405	494	2044	3
364	KY	110	300	2082	2
380	OH	50	400	2066	4
385	UT	50	400	2066	4
386	FL	1,199	405	2062	2
401	RI	1,225	348	2070	4
402	NE	6,761	480	2044	3
404	GA	2,110	419	2059	3
405	OK	10,860	384	2040	4
406	MT	4,221	499	2048	3
407	FL	1,360	454	2057	1
408	CA	2,797	470	2053	3
409	TX	3,787	510	2048	4
410	MD	3,718	454	2052	4
412	PA	1,693	454	2056	2
413	MA	4,179	460	2050	2
414	WI	6,217	470	2045	2
415	CA	1,940	454	2056	4
417	MO	3,467	434	2054	1
419	OH	4,808	490	2047	1
423	TN	3,302	414	2056	2
424	CA	50	400	2066	4
425	WA	818	454	2058	2
430	TX	1,140	454	2058	3
432	TX	3,311	454	2053	4
434	VA	3,211	474	2051	2
435	UT	2,123	444	2056	2
440	OH	2,360	454	2055	4
442	CA	90	400	2066	4
443	MD	100	400	2066	4

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
458	OR	50	400	2066	4
463	IN	50	250	2096	4
469	TX	3,916	454	2051	2
470	GA	158	400	2066	3
475	CT	1,747	400	2062	3
478	GA	1,064	444	2059	3
479	AR	2,595	329	2069	4
480	AZ	606	400	2064	2
484	PA	150	454	2060	3
501	AR	5,462	259	2072	1
502	KY	1,415	319	2074	2
503	OR	2,932	454	2054	3
504	LA	1,651	249	2090	3
505	NM	2,951	444	2054	2
507	MN	2,681	415	2058	3
508	MA	8,357	510	2039	4
509	WA	2,690	409	2058	2
510	CA	2,499	464	2054	3
512	TX	9,470	524	2036	1
513	OH	2,963	454	2054	3
515	IA	6,509	371	2052	2
516	NY	1,351	654	2045	3
517	MI	523	490	2056	3
518	NY	5,979	673	2037	4
520	AZ	2,671	454	2054	1
530	CA	7,627	530	2039	2
531	NE	50	300	2082	3
534	WI	50	400	2066	4
539	OK	50	400	2066	4
540	VA	6,085	464	2046	4
541	OR	5,247	364	2057	3
551	NJ	100	400	2066	4
559	CA	4,710	465	2049	4
561	FL	2,008	610	2045	2
562	CA	3,169	454	2053	1
563	IA	1,142	295	2080	4
564	WA	50	0	N/A	N/A
567	OH	245	400	2065	2

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
570	PA	5,891	414	2050	1
571	VA	50	400	2066	4
573	MO	2,549	424	2057	1
574	IN	2,006	299	2076	1
575	NM	1,921	405	2061	3
580	OK	994	454	2058	4
585	NY	2,222	660	2043	4
586	MI	260	415	2064	3
601	MS	4,611	369	2058	3
602	AZ	1,707	474	2055	3
603	NH	1,364	654	2044	2
605	SD	2,116	454	2055	2
606	KY	1,998	314	2073	2
607	NY	2,892	670	2042	3
608	WI	3,398	495	2050	3
609	NJ	8,888	425	2042	1
610	PA	3,168	454	2053	1
612	MN	3,698	504	2048	2
614	OH	1,792	484	2054	3
615	TN	3,728	450	2052	1
616	MI	4,612	567	2043	1
617	MA	1,264	404	2062	2
618	IL	9,949	780	2029	4
619	CA	3,076	454	2053	2
620	KS	2,593	169	2119	1
623	AZ	226	400	2065	2
626	CA	3,278	480	2051	4
628	CA	60	400	2066	4
629	TN	50	400	2066	4
630	IL	4,181	679	2039	2
631	NY	1,877	654	2044	3
636	MO	1,628	529	2051	3
641	IA	1,682	300	2077	1
646	NY	90	600	2049	1
650	CA	3,219	464	2052	1
651	MN	518	459	2058	2
657	CA	70	400	2066	4
660	MO	1,761	445	2057	4

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
661	CA	2,310	454	2055	4
662	MS	6,476	399	2050	4
667	MD	85	400	2066	4
669	CA	50	400	2066	4
678	GA	702	454	2059	3
680	NY	50	600	2049	2
681	WV	195	400	2066	3
682	TX	7,773	406	2046	1
701	ND	1,794	444	2057	1
702	NV	3,897	454	2051	2
703	VA	1,738	454	2056	1
704	NC	1,712	319	2073	2
706	GA	3,303	429	2055	4
707	CA	6,427	454	2046	4
708	IL	7,656	645	2035	1
712	IA	1,439	295	2079	4
713	TX	2,489	400	2060	4
714	CA	4,492	464	2049	2
715	WI	3,466	429	2055	3
716	NY	2,381	669	2042	2
717	PA	1,935	464	2055	4
718	NY	3,711	600	2043	1
719	CO	3,978	554	2045	4
720	CO	744	600	2048	1
724	PA	2,188	439	2057	3
725	NV	50	400	2066	4
726	TX	50	0	N/A	N/A
727	FL	758	654	2045	2
731	TN	1,788	434	2058	4
732	NJ	9,012	454	2040	1
734	MI	9,806	509	2036	1
737	TX	50	400	2066	4
740	OH	5,140	625	2040	4
743	NC	50	300	2082	3
747	CA	60	400	2066	4
754	FL	123	600	2049	1
757	VA	3,176	464	2052	2
760	CA	6,150	512	2043	1

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
762	GA	50	400	2066	4
763	MN	726	449	2059	4
765	IN	6,430	305	2060	2
769	MS	1,092	400	2063	2
770	GA	2,209	379	2063	4
772	FL	513	634	2047	3
773	IL	50	400	2066	4
774	MA	745	240	2096	1
775	NV	1,986	454	2056	3
779	IL	200	400	2066	3
781	MA	2,739	310	2072	3
785	KS	5,707	255	2072	1
786	FL	202	654	2046	2
787	PR	350	0	N/A	N/A
801	UT	1,969	424	2059	3
802	VT	1,760	260	2086	1
803	SC	2,637	334	2068	4
804	VA	4,501	474	2049	3
805	CA	4,300	454	2051	3
806	TX	9,242	460	2039	2
808	HI	1,559	370	2066	4
810	MI	520	474	2057	1
812	IN	4,754	325	2063	4
813	FL	902	434	2060	1
814	PA	3,430	434	2054	1
815	IL	3,915	430	2053	2
816	MO	5,069	489	2047	3
817	TX	4,251	460	2050	1
818	CA	1,157	454	2058	3
828	NC	2,615	299	2074	1
830	TX	5,400	454	2048	1
831	CA	2,577	490	2052	3
832	TX	5,787	482	2045	2
838	NY	50	0	N/A	N/A
843	SC	2,449	334	2069	3
845	NY	2,908	613	2044	4
847	IL	5,796	465	2047	3
848	NJ	55	400	2066	4

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
850	FL	1,924	404	2061	3
854	SC	50	300	2082	3
856	NJ	4,766	429	2052	3
857	MA	50	240	2099	1
858	CA	3,572	490	2050	3
859	KY	2,978	329	2068	3
860	CT	12,940	420	2033	4
862	NJ	330	400	2065	1
863	FL	1,004	429	2060	2
864	SC	1,911	329	2071	4
865	TN	1,603	404	2062	3
870	AR	4,652	324	2063	2
872	IL	50	400	2066	4
878	PA	50	400	2066	4
901	TN	2,499	449	2055	4
903	TX	10,037	480	2037	4
904	FL	1,084	440	2059	4
906	MI	1,312	470	2056	4
907	AK	1,880	490	2053	4
908	NJ	7,670	460	2043	4
909	CA	4,167	470	2050	3
910	NC	2,638	300	2074	4
912	GA	1,996	415	2059	2
913	KS	2,327	160	2126	2
914	NY	2,390	630	2044	4
915	TX	1,066	460	2057	1
916	CA	3,381	450	2053	4
917	NY	50	600	2049	2
918	OK	5,760	436	2049	3
919	NC	2,277	335	2069	4
920	WI	3,270	445	2054	3
925	CA	2,725	470	2053	4
928	AZ	2,812	356	2064	2
929	NY	50	600	2049	2
930	IN	50	300	2082	3
931	TN	3,113	415	2057	3
934	NY	50	600	2049	2
936	TX	334	412	2064	3

NPA	STATE_ABBR	Total p-ANI	Forecasted p-ANI	Exhaust Year	Exhaust Qtr.
937	OH	3,354	454	2053	3
938	AL	50	400	2066	4
939	PR	50	0	N/A	N/A
940	TX	4,792	470	2048	2
941	FL	667	444	2060	3
947	MI	1,712	479	2054	1
949	CA	1,508	454	2057	3
951	CA	3,077	454	2053	2
952	MN	380	459	2059	3
954	FL	1,491	424	2060	3
956	TX	5,700	464	2047	4
959	CT	50	400	2066	4
970	CO	3,850	579	2044	4
971	OR	50	400	2066	4
972	TX	4,192	449	2051	1
973	NJ	12,378	460	2033	3
978	MA	3,969	310	2068	3
979	TX	3,500	501	2049	4
980	NC	130	300	2082	1
984	NC	60	300	2082	2
985	LA	1,278	230	2097	2
986	ID	50	0	N/A	N/A
989	MI	3,543	760	2038	3

Table 2-23 below contains the Projected Exhaust of 211/511/p-ANIs in the 5 NPAs that are projected to exhaust first, as of December 31, 2017.

Table 2-23
Projected Exhaust of 211/511/p-ANIs Top 5 NPAs as of December 31, 2017

NPA	State	Total p-ANIs	Forecasted P-ANIs	Exhaust Date
281	TX	14,472	668	2Q2024
618	IL	9,949	780	4Q2029
315	NY	7,618	892	4Q2030
248	MI	6,079	843	3Q2033
973	NJ	12,378	460	3Q2033

2.7.5 Routing Number Administration System (RNAS)

RNAS is the first national p-ANI database and is vitally important to our customers for obtaining e9-1-1 resources. Because RNAS stores all of the information relating to p-ANI administration and provides many essential reporting features that generally contain real-time data, its reliability is essential.

RNAS was available 100% of the time in 2017, which means the RNA once again notably exceeded the contract requirement of 99.9% availability.

The RNA opened three trouble tickets for RNAS in 2017. For more details on trouble tickets for RNAS see Section 6.2.4.

We conducted maintenance on RNAS twice; on February 15 and July 10. For these maintenance activities, customers experienced no downtime.

As with PAS, we completed disaster recovery testing on October 27 with no down time. For more detailed information on the RNAS performance, see Section 6.2.

2.7.6 RNAS Training Videos

In 2016, the RNA developed nine training videos for service providers and service provider consultants about requesting new p-ANIs and managing existing p-ANI assignments.

In all, there were 32 views of RNAS training videos in 2017, a 30% decrease from the 46 views in 2016. The most popular video is "Create/Modify P-ANI Forecasts," which accounted for 28% of the views.

Table 2-24 shows the RNAS training video names and the number of times each video was accessed. These totals do not include downloaded or shared videos, as there is no method for tracking those.

Table 2-24
2017 RNAS Training Videos

	Training Video	Number of Times Viewed
1	Create/Modify P-ANI Forecasts	9
2	New P-ANI Requests	7
3	P-ANI Modification Requests	1
4	P-ANI Return Requests	0
5	FCC License Search	7
6	Helpful Tools in RNAS	2
7	Types of Reports in RNAS	0
8	Filing P-ANI Annual Report in RNAS	2
9	Filing P-ANI Annual Report in Excel	4
	TOTAL VIEWS	**32**

2.8 PA and RNA Continued Focus on Outstanding Customer Satisfaction

The PA and RNA are constantly focused on customer satisfaction. We strive to respond affirmatively to our customers' questions and suggestions for improvement, while meeting or exceeding contract requirements. Since 2006, we have provided the Numbering Oversight Working Group (NOWG) with an ongoing list of noteworthy specific ways we have responded to the more significant requests of our customers. This list does not include all the day-to-day questions and requests that the pooling staff field as part of their daily workload but the more challenging and time-consuming issues that arise. In 2017, we had 207 of these customer focus items, of which 146 were related to pooling activities and 61 were related to p-ANI activities.

A strong indication of our firm commitment to customer satisfaction is that we did not receive any formal complaints in 2017. Others include:

★ Processing 100% of the Applications (Part 3s) on Time

According to Section 7.4.4 of the *Thousands-Block Pooling Administration Guidelines* we are required to process applications within seven calendar days. According to Section 5.0 of Clause C.1 of our requirements, we have met our contractual obligation as long as 99% of the applications are processed within the seven-day timeframe. In 2017 we processed all of the record number 145,828 Part 3s, on time and usually well before the deadline.

★ Issuing Pooling and P-ANI Tips-of-the-Quarter

We continued to send the pooling and P-ANI *Tip of the Quarter* to our PAS and RNAS email distribution each quarter to help our customers understand pooling and p-ANI administration processes.

★ PAS and RNAS Exceptional Availability

Another area that shows our focus on customer support relates to PAS and RNAS performance and availability despite the need for builds and maintenance. Our contract allows us to have up to nine hours of *unscheduled* down time each year. In 2017 both PAS and RNAS were available 100% of the time, with no unscheduled down time. Our contract also permits us to make the systems unavailable to our customers during maintenance but we work diligently to ensure that we complete the updates and builds with little-to-no down time. We used only five minutes of FCC-approved maintenance time in 2017 for a PAS update, and no scheduled maintenance for RNAS, once again exceeding the contract requirements with both systems.

★ Exceeding Reporting Requirements for Responding to Requests for Ad Hoc Reports

We responded to all requests for ad hoc reports within 24 hours of each request rather than taking the permitted three business days to respond.

★ Resolving p-ANI Range Discrepancies

We have continued to work with the stakeholders to resolve hundreds of conflicting data issues including assignments that have been incorrectly reported on SPs' annual reports, and retrieval of unused p-ANIs that were activated but never used.

★ PAS and RNAS Training Videos

Our PAS training videos were first made available on our website in 2010. RNAS training videos were first made available in 2016. This no-cost service makes it possible for every customer to access the training videos 24 hours a day, seven days a week, and replaces live training sessions to accommodate individual schedules. In 2017 there were 253 PAS training video views. Details can be found in Table 2-12. There were 32 RNAS training video views in 2017.See Table 2-24.

Section 3
Identification of Existing and Potential Pooling Areas

In this section, Pooling Administration (PA) discusses the number of existing pooling areas. As of December 31, 2017, there are 16,447 distinct pooling rate centers (i.e., pooling areas), which constitute 88.9% of the 18,490 total distinct rate centers. While we do not include a list of separate "potential" pooling areas, there are currently 2,043 rate centers in which no carrier is pooling, and which could therefore be considered "potential" pooling areas.

The PA designates each rate center according to one of the following definitions:

1. **Mandatory (M)** - This rate center is located in a top-100 MSA and service providers with numbering resources in this rate center that have not been granted a specific exemption must pool in this rate center.

2. **Mandatory State (M)** - Pooling was implemented in this rate center pursuant to a state commission order. This rate center is not in a top-100 MSA, but has one or more pooling-capable service providers, and is considered a mandatory pooling rate center.

3. **Mandatory Single Service Provider (M*)** - This rate center is located in a top-100 MSA, but has only one service provider that has numbering resources. This rate center will be considered optional under these conditions and designated as M*. When a second service provider receives numbering resources in this rate center, the designation will be changed to M for Mandatory.

4. **Mandatory State Single Service Provider (M*)** - Pooling has been implemented in this rate center pursuant to a state commission order. This rate center is not in a top-100 MSA and has only one service provider that has numbering resources. This rate center will be considered optional under these conditions and designated as M*. When a second service provider receives numbering resources in this rate center, the designation will be changed to M for Mandatory State.

5. **Optional (O)** - This rate center is not in a top-100 MSA, and any service provider with numbering resources in this rate center may elect to pool at its option. Service providers may voluntarily participate in thousands-block number pooling in an Optional rate center outside the top 100 MSAs.

6. **Excluded (X)** - This rate center is not in a top-100 MSA, and no service provider is currently participating in pooling. This rate center is not included in the Pooling Administration System (PAS).

3.1 Identification of Existing Pooling Areas

Table 3-1 below identifies the 16,447 distinct pooling rate centers (*i.e.*, pooling areas), and their status designations, by state, as of December 31, 2017. Pooling rate centers are identified as either "mandatory" or "optional." Rate centers with a designation of "excluded" are not considered pooling areas.

Table 3-1
Summary of all Rate Centers by Status Designation

State	Mandatory (M)	Mandatory State (M)	Optional	Mandatory Single SP (M*)	Mandatory State Single SP (M*)	Excluded	Total
AK		72			188		260
AL	56	74	125	2	12	30	299
AR	46		268	1		65	380
AZ	27		44	20		39	130
CA	439	83	178	15		24	739
CO	21	5	136	3		44	209
CT	74	15					89
DC	1						1
DE	8		22				30
FL	129	14	117			8	268
GA	77		230	3		50	360
HI	1		5				6
IA	66	68	447	21		209	811
ID	16	79		3	47		145
IL	234		636	19		96	985
IN	216	257	12	9	25	6	525
KS	74		348	19		133	574
KY	46	139	136	1	24	26	372
LA	58		209	3		7	277
MA	234	30				2	266
MD	112	53					165
ME	50	101	89			9	249
MI	222	106	285	7	7	7	634
MN	59		354	4		221	638
MO	138	428		20	135		721
MS	38	93	87	6	10	5	239
MT		149			111		260
NC	146	18	238	8		21	431
ND			99			200	299
NE	28	171	170	4	78		451
NH	32	92	25				149
NJ	188		21				209
NM	5		71	2		76	154
NV	23		48	2		23	96
NY	407	258	79		3		747

State	Mandatory (M)	Mandatory State (M)	Optional	Mandatory Single SP (M*)	Mandatory State Single SP (M*)	Excluded	Total
OH	379	163	162	4		31	739
OK	104	15	207	36		167	529
OR	36	103	76			40	255
PA	415	346	12		3		776
PR	47		36	1			84
RI	25						25
SC	107		119	5		9	240
SD			107			162	269
TN	121		183	7		30	341
TX	303	7	728	23		216	1277
UT	28		40	15	1	48	132
VA	121	182	66				369
VT		101	40				141
WA	54	149	1	3	16		223
WI	125	313	121	13	30		602
WV	7	156	59			6	228
WY			59			33	92
Grand Total	5143	3840	6495	279	690	2043	18490

3.2 Summarized Information about Existing and "Potential" Pooling Areas

3.2.1 Pooling Rate Center Facts:

Total Number of Distinct Rate Centers	18,490
Total Number of Distinct Rate Centers Available for Pooling	16,447
Percentage of Distinct Rate Centers Available for Pooling	88.95%
Total Number of Mandatory Distinct Rate Centers	8,983
Percentage of Distinct Rate Centers that are Mandatory	48.58%
Total Number of Distinct Mandatory Single-Service Provider Rate Centers	969
Percentage of Distinct Rate Centers that are Mandatory Single-Service Provider	5.24%
Total Number of Distinct Optional Rate Centers	6,495

Percentage of Distinct Rate Centers that are Optional	35.12%
Total Number of Distinct Rate Centers Excluded from Pooling	2,043
Percentage of Distinct Rate Centers that are Excluded from Pooling	11.04%
Total Number of Rate Center Designations Changed in 2017 (see Section 2.4.2 for detail)	283

3.2.2 Summary of State/Jurisdiction Pooling Status

There has been no change in the summary of state/jurisdiction pooling status provided below since 2015.

States or jurisdictions where number pooling has been implemented.	All states, the District of Columbia and Puerto Rico
States or jurisdictions that have only mandatory pooling rate centers.	Alaska, Connecticut, District of Columbia, Idaho, Maryland, Missouri, Montana, and Rhode Island
States that have no mandatory pooling rate centers.	North Dakota, South Dakota, and Wyoming
States or jurisdictions that have no excluded rate centers.	Alaska, Connecticut, Delaware, District of Columbia, Hawaii, Idaho, Maryland, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, Pennsylvania, Puerto Rico, Rhode Island, Vermont, Virginia, Washington, and Wisconsin
States or jurisdictions that implemented additional mandatory pooling prior to December 31, 2017, either under delegated authority for state pooling trials prior to the rollout of national pooling, or as a result of additional delegated authority after the national rollout.	Alabama, Alaska, Arizona, California, Colorado, Connecticut, Florida, Idaho, Illinois, Iowa, Indiana, Kentucky, Massachusetts, Maryland, Maine, Michigan, Missouri, Mississippi, Montana, North Carolina, Nebraska, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Utah, Virginia, Vermont, Washington, West Virginia, and Wisconsin

Section 4
Aggregated Total by Pool of the Service Providers Participating in the Pooled Areas

Following is a list of the aggregated total by pool of the service providers participating in the pooled areas in 2017. There are 1,104 distinct service providers[7] participating in 16,447 distinct pooled rate centers in 240 NPA and NPA complexes covering 52 jurisdictions -- 50 states, the District of Columbia, and Puerto Rico.

Table 4-1
Aggregated Total by Pool of the Service Providers Participating in the Pooled Areas

NPA/NPA COMPLEX	Pooling OCNs	Pooled RCs
201/551	52	22
202	47	1
203/475	36	32
205	48	66
206	45	5
207	55	240
208/986	53	145
209	43	56
210/726	41	1
212/332/646/917	62	1
213/323	53	15
214/469/972	70	43
215/267	53	36
216	38	4
217	42	230
218	42	113
219	35	45
220/740	48	187
223/717	53	107
224/847	41	41
225	35	34
228	28	11
229	32	73
231	39	93
234/330	43	116
239	32	11
240/301	66	63
248/947	43	20
251	40	32
252	35	89
253	35	10
254	44	105
256/938	42	91
260	29	76
262	32	60
269	43	76
270/364	54	170
272/570	56	180
276	41	78
281/346/713/832	61	45
302	35	30
303/720	47	14
304/681	41	222
305/786	56	5
307	27	59
308	30	170
309	42	147
310/424	50	16
312/872	44	1
313	39	6
314	34	7
315/680	51	149

[7] This count of distinct service providers consolidates all OCNs for a single company under one parent company.

NPA/NPA COMPLEX	Pooling OCNs	Pooled RCs
316	30	14
317/463	40	36
318	33	117
319	39	101
320	48	102
321	33	5
321/407	45	17
325	30	61
331/630	40	25
334	43	80
336/743	60	84
337	34	70
339/781	35	40
347/718/917/929	56	11
347/718/929	41	2
351/978	38	58
352	32	47
360/564	57	75
361	37	68
380/614	40	16
385/801	33	20
386	37	28
401	28	25
402/531	61	281
404/470/678	55	1
405	39	83
406	48	260
408/669	50	11
409	41	48
410/443/667	56	102
412/878	43	23
413	31	61
414	30	4
415/628	52	14
417	45	155
419/567	51	175
423	52	70
425	37	14
430/903	57	162

NPA/NPA COMPLEX	Pooling OCNs	Pooled RCs
432	24	43
434	34	66
435	32	64
440	41	62
442/760	56	83
458/541	45	153
470/678/770	57	41
478	40	38
479	27	60
480	32	1
484/610	54	90
501	31	59
502	39	35
503/971	55	62
504	34	5
505	38	20
507	47	176
508/774	39	85
509	55	119
510	44	13
512/737	49	35
513	35	25
515	43	72
516	50	11
517	51	77
518/838	59	135
520	36	27
530	52	116
534/715	76	253
539/918	50	142
540	52	117
559	41	57
561	47	7
562	45	9
563	33	85
571/703	52	19
573	45	216
574	37	53
575	34	58

NPA/NPA COMPLEX	Pooling OCNs	Pooled RCs
580	37	137
585	41	77
586	35	11
601/769	46	101
602	28	1
603	43	149
605	29	107
606	38	99
607	41	105
608	62	159
609	46	39
612	43	1
615/629	46	49
616	40	36
617/857	47	20
618	45	212
619	45	11
620	58	199
623	27	1
626	44	10
631/934	46	53
636	33	46
641	40	166
650	42	15
651	46	12
657/714	46	13
660	41	224
661	50	32
662	45	122
682/817	56	24
701	38	99
702/725	41	16
704/980	48	55
706/762	65	105
707	49	75
708	36	32
712	48	178
716	51	79
719	41	57

NPA/NPA COMPLEX	Pooling OCNs	Pooled RCs
724/878	48	162
727	40	5
731	37	63
732/848	46	36
734	47	33
747/818	43	16
754/954	45	5
757	32	34
763	51	10
765	50	138
772	38	8
773/872	41	10
775	35	57
779/815	57	191
785	48	194
787/939	14	84
802	29	141
803	57	79
804	38	55
805	55	40
806	32	110
808	18	6
810	37	47
812/930	56	171
813	49	8
814	50	178
816	46	73
828	39	73
830	45	80
831	40	24
843/854	48	89
845	63	96
850	38	62
856	46	32
858	36	8
859	41	42
860/959	29	57
862/973	60	42
863	45	22

NPA/NPA COMPLEX	Pooling OCNs	Pooled RCs
864	43	63
865	36	33
870	35	196
901	35	14
904	38	19
906	21	93
907	18	260
908	47	38
909	50	21
910	44	71
912	45	52
913	41	34
914	52	28
915	28	7
916	47	16
919/984	51	38

NPA/NPA COMPLEX	Pooling OCNs	Pooled RCs
920	56	126
925	39	17
928	37	61
931	43	82
936	41	66
937	44	123
940	54	76
941	43	11
949	46	7
951	45	20
952	44	3
956	37	34
970	42	94
979	46	52
985	34	44
989	43	135

Section 5
Forecast Results and a Review of Forecasts versus Actual Block Activation in 2017

This section identifies forecast-to-block-activation results by NPA, and contains a review of forecasts compared to actual block assignments for the current year and the previous years, as specifically required by the contract.

In 2017, 32.7% of the blocks forecasted were assigned. The relevant numbers are:

- 240 NPA and NPA complexes;
- 11,028 distinct rate areas with forecasts;
- 121,477 forecasted blocks; and
- 39,728 blocks assigned.

5.1 Forecasted versus Actual Block Assignments by NPA or NPA complex for 2017

Table 5-1 below shows that 121,477 blocks were forecasted and 39,728 blocks were assigned in 240 NPA and NPA complexes during the 2017 calendar year. This resulted in 32.7% of the forecasted blocks being assigned.

Carriers forecasted a need for blocks in 11,028 of the 16,331 pooling rate centers, or in 78% of them. In 3,657 pooling rate centers, no blocks were forecasted during 2017. When compared with 2016, the number of blocks assigned decreased by 28% while the number of blocks forecasted decreased by 9%. The Nebraska 308 NPA had the lowest percentage of blocks assigned compared to total forecast, at 5.8%, while the Alaska 907 NPA had the highest ratio at 81.4%.

Table 5-1
Forecasted versus Actual Block Assignments by NPA or NPA Complex for 2017

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
201/551	NJ	580	275	47.41%
202	DC	429	145	33.80%
203/475	CT	633	183	28.91%
205	AL	846	354	41.84%
206	WA	395	131	33.16%
207	ME	331	109	32.93%
208/986	ID	495	170	34.34%
209	CA	714	148	20.73%
210/726	TX	348	164	47.13%
212/332/646/917	NY	988	350	35.43%
213/323	CA	1141	418	36.63%
214/469/972	TX	1,308	557	42.58%
215/267/445	PA	1,301	361	27.75%
216	OH	300	84	28.00%
217	IL	586	196	33.45%
218	MN	561	174	31.02%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
219	IN	454	93	20.48%
220/740	OH	479	164	34.24%
223/717	PA	1189	256	21.53%
224/847	IL	799	206	25.78%
225	LA	298	69	23.15%
228	MS	295	128	43.39%
229	GA	496	125	25.20%
231	MI	308	74	24.03%
234/330	OH	589	195	33.11%
239	FL	295	92	31.19%
240/301	MD	1162	305	26.25%
248/947	MI	636	164	25.79%
251	AL	298	101	33.89%
252	NC	256	127	49.61%
253	WA	308	75	24.35%
254	TX	192	84	43.75%
256/938	AL	701	271	38.66%
260	IN	296	62	20.95%
262	WI	251	134	53.39%
269	MI	521	58	11.13%
270/364	KY	657	205	31.20%
272/570	PA	1028	329	32.00%
276	VA	429	105	24.48%
279/916	CA	403	152	37.72%
281/346/713/832	TX	1947	693	35.59%
302	DE	448	103	22.99%
303/720	CO	628	286	45.54%
304/681	WV	646	96	14.86%
305/786	FL	858	233	27.16%
307	WY	166	81	48.80%
308	NE	748	44	5.88%
309	IL	493	201	40.77%
310/424	CA	640	249	38.91%
312/872	IL	409	120	29.34%
313	MI	449	83	18.49%
314	MO	332	132	39.76%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
315/680	NY	611	185	30.28%
316	KS	937	105	11.21%
317/463	IN	689	183	26.56%
318	LA	416	93	22.36%
319	IA	288	112	38.89%
320	MN	447	152	34.00%
321	FL	177	77	43.50%
321/407	FL	749	249	33.24%
325	TX	96	66	68.75%
331/630	IL	546	186	34.07%
334	AL	621	276	44.44%
336/743	NC	538	198	36.80%
337	LA	169	99	58.58%
339/781	MA	729	275	37.72%
347/718/917/929	NY	1297	425	32.77%
347/718/929	NY	104	35	33.65%
351/978	MA	758	198	26.12%
352	FL	372	131	35.22%
360/564	WA	736	172	23.37%
361	TX	163	89	54.60%
380/614	OH	545	192	35.23%
385/801	UT	611	264	43.21%
386	FL	211	87	41.23%
401	RI	266	123	46.24%
402/531	NE	437	202	46.22%
404/470/678	GA	1061	376	35.44%
405	OK	475	136	28.63%
406	MT	349	176	50.43%
408/669	CA	395	164	41.52%
409	TX	166	80	48.19%
410/443/667	MD	1547	369	23.85%
412/878	PA	628	144	22.93%
413	MA	356	78	21.91%
414	WI	206	58	28.16%
415/628	CA	592	177	29.90%
417	MO	353	196	55.52%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
419/567	OH	421	179	42.52%
423	TN	681	196	28.78%
425	WA	434	131	30.18%
430/903	TX	341	124	36.36%
432	TX	140	86	61.43%
434	VA	466	133	28.54%
435	UT	254	92	36.22%
440	OH	409	188	45.97%
442/760	CA	492	230	46.75%
458/541	OR	636	168	26.42%
470/678/770	GA	2711	673	24.82%
478	GA	224	100	44.64%
479	AR	234	156	66.67%
480	AZ	540	181	33.52%
484/610	PA	974	268	27.52%
501	AR	349	91	26.07%
502	KY	387	158	40.83%
503/971	OR	668	193	28.89%
504	LA	534	138	25.84%
505	NM	360	77	21.39%
507	MN	786	289	36.77%
508/774	MA	1023	265	25.90%
509	WA	519	146	28.13%
510	CA	498	127	25.50%
512/737	TX	615	251	40.81%
513	OH	266	88	33.08%
515	IA	385	176	45.71%
516	NY	319	169	52.98%
517	MI	594	97	16.33%
518/838	NY	673	228	33.88%
520	AZ	329	110	33.43%
530	CA	640	229	35.78%
534/715	WI	224	126	56.25%
539/918	OK	645	293	45.43%
540	VA	973	294	30.22%
559	CA	538	152	28.25%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
561	FL	535	143	26.73%
562	CA	331	136	41.09%
563	IA	495	206	41.62%
571/703	VA	794	313	39.42%
573	MO	314	145	46.18%
574	IN	270	70	25.93%
575	NM	305	92	30.16%
580	OK	563	125	22.20%
585	NY	351	167	47.58%
586	MI	245	68	27.76%
601/769	MS	485	162	33.40%
602	AZ	481	78	16.22%
603	NH	858	142	16.55%
605	SD	420	176	41.90%
606	KY	217	89	41.01%
607	NY	211	108	51.18%
608	WI	258	141	54.65%
609	NJ	642	162	25.23%
612	MN	439	131	29.84%
615/629	TN	850	214	25.18%
616	MI	408	84	20.59%
617/857	MA	669	308	46.04%
618	IL	479	120	25.05%
619	CA	389	107	27.51%
620	KS	308	172	55.84%
623	AZ	595	78	13.11%
626	CA	461	172	37.31%
631/934	NY	571	138	24.17%
636	MO	185	75	40.54%
641	IA	326	189	57.98%
650	CA	396	115	29.04%
651	MN	230	58	25.22%
657/714	CA	900	288	32.00%
660	MO	274	118	43.07%
661	CA	414	192	46.38%
662	MS	427	109	25.53%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
682/817	TX	540	270	50.00%
701	ND	206	98	47.57%
702/725	NV	501	220	43.91%
704/980	NC	910	324	35.60%
706/762	GA	1252	318	25.40%
707	CA	663	179	27.00%
708	IL	478	122	25.52%
712	IA	180	68	37.78%
716	NY	464	202	43.53%
719	CO	355	115	32.39%
724/878	PA	1048	279	26.62%
727	FL	284	116	40.85%
731	TN	406	186	45.81%
732/848	NJ	755	264	34.97%
734	MI	615	92	14.96%
747/818	CA	376	149	39.63%
754/954	FL	445	137	30.79%
757	VA	530	221	41.70%
763	MN	209	68	32.54%
765	IN	597	92	15.41%
772	FL	156	45	28.85%
773/872	IL	420	95	22.62%
775	NV	287	147	51.22%
779/815	IL	731	130	17.78%
785	KS	234	154	65.81%
787/939	PR	724	209	28.87%
802	VT	580	71	12.24%
803	SC	647	261	40.34%
804	VA	671	205	30.55%
805	CA	491	187	38.09%
806	TX	324	170	52.47%
808	HI	194	99	51.03%
810	MI	326	59	18.10%
812/930	IN	676	249	36.83%
813	FL	510	258	50.59%
814	PA	922	163	17.68%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
816	MO	519	195	37.57%
828	NC	412	187	45.39%
830	TX	297	90	30.30%
831	CA	265	100	37.74%
843/854	SC	698	266	38.11%
845	NY	492	142	28.86%
850	FL	476	170	35.71%
856	NJ	525	115	21.90%
858	CA	166	85	51.20%
859	KY	336	124	36.90%
860/959	CT	634	191	30.13%
862/973	NJ	733	271	36.97%
863	FL	304	109	35.86%
864	SC	340	139	40.88%
865	TN	528	146	27.65%
870	AR	236	142	60.17%
901	TN	627	192	30.62%
904	FL	399	125	31.33%
906	MI	47	21	44.68%
907	AK	54	44	81.48%
908	NJ	416	112	26.92%
909	CA	518	205	39.58%
910	NC	512	249	48.63%
912	GA	499	170	34.07%
913	KS	328	133	40.55%
914	NY	326	122	37.42%
915	TX	141	71	50.35%
919/984	NC	635	272	42.83%
920	WI	288	129	44.79%
925	CA	426	123	28.87%
928	AZ	233	97	41.63%
931	TN	367	152	41.42%
936	TX	186	81	43.55%
937	OH	297	148	49.83%
940	TX	156	97	62.18%
941	FL	298	67	22.48%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
949	CA	339	184	54.28%
951	CA	449	138	30.73%
952	MN	336	49	14.58%
956	TX	442	209	47.29%
970	CO	586	161	27.47%
979	TX	184	86	46.74%
985	LA	238	65	27.31%
989	MI	403	97	24.07%
Totals		**121,477**	**39,728**	32.70%

5.2 NPAs/States with Forecasted-Versus-Actual Blocks Assigned Below 25%

Table 5-2 below shows that there were 39 NPAs/NPA complex areas where fewer than 25% of the blocks forecasted were assigned in 2017. This is up from the 13 NPAs/NPA complex areas in this category from 2016.

Table 5-2
NPAs/States with Forecasted versus Actual Blocks Assigned under 25%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
308	NE	748	44	5.88%
269	MI	521	58	11.13%
316	KS	937	105	11.21%
802	VT	580	71	12.24%
623	AZ	595	78	13.11%
952	MN	336	49	14.58%
304/681	WV	646	96	14.86%
734	MI	615	92	14.96%
765	IN	597	92	15.41%
602	AZ	481	78	16.22%
517	MI	594	97	16.33%
603	NH	858	142	16.55%
814	PA	922	163	17.68%
779/815	IL	731	130	17.78%
810	MI	326	59	18.10%
313	MI	449	83	18.49%
219	IN	454	93	20.48%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
616	MI	408	84	20.59%
209	CA	714	148	20.73%
260	IN	296	62	20.95%
505	NM	360	77	21.39%
223/717	PA	1189	256	21.53%
856	NJ	525	115	21.90%
413	MA	356	78	21.91%
580	OK	563	125	22.20%
318	LA	416	93	22.36%
941	FL	298	67	22.48%
773/872	IL	420	95	22.62%
412/878	PA	628	144	22.93%
302	DE	448	103	22.99%
225	LA	298	69	23.15%
360/564	WA	736	172	23.37%
410/443/667	MD	1547	369	23.85%
231	MI	308	74	24.03%
989	MI	403	97	24.07%
631/934	NY	571	138	24.17%
253	WA	308	75	24.35%
276	VA	429	105	24.48%
470/678/770	GA	2711	673	24.82%

5.3. NPA/States with Forecasted Versus Actual Blocks Assigned Above 50%

Table 5-3 below shows that there were 26 NPAs/NPA complex areas where the ratio between blocks forecasted and blocks assigned was above 50% in 2017. This is a 54% decrease from the 56 NPAs/NPA complex areas in this category from 2016.

In 2017 there was one area that had a percent assigned over 75%. In 2016, there were two areas over 75%.

Table 5-3
NPAs/States with forecasted versus actual blocks assigned above 50%
(Sorted from highest to lowest)

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
907	AK	54	44	81.48%
325	TX	96	66	68.75%
479	AR	234	156	66.67%
785	KS	234	154	65.81%
940	TX	156	97	62.18%
432	TX	140	86	61.43%
870	AR	236	142	60.17%
337	LA	169	99	58.58%
641	IA	326	189	57.98%
534/715	WI	224	126	56.25%
620	KS	308	172	55.84%
417	MO	353	196	55.52%
608	WI	258	141	54.65%
361	TX	163	89	54.60%
949	CA	339	184	54.28%
262	WI	251	134	53.39%
516	NY	319	169	52.98%
806	TX	324	170	52.47%
775	NV	287	147	51.22%
858	CA	166	85	51.20%
607	NY	211	108	51.18%
808	HI	194	99	51.03%
813	FL	510	258	50.59%
406	MT	349	176	50.43%
915	TX	141	71	50.35%
682/817	TX	540	270	50.00%

5.4. Analysis of Forecasted-versus-Actual-Blocks Assigned Percentages

5.4.1 Summary of Forecasts and Actual Assigned Blocks from 2013 through 2017

Table 5-5 below illustrates the ratio between forecasts and actual assigned blocks from 2013 through 2017, ranked from highest percentage to lowest. For the five years since 2013, the 2017 forecasted-versus-actual-blocks-assigned percentage of 32.7% ranks the lowest. The highest percentage was 45.7% in 2014.

Table 5-4
Summary of Forecasts and Actual Assigned Blocks from 2013 through 2017

Rank from Highest to Lowest	Year	Total Forecasted Blocks	Total Blocks Assigned	Percentage of Assigned/ Forecasted Blocks
1	2014	129,820	59,274	45.7%
2	2015	121,578	53,415	43.9%
3	2016	134,021	55,720	41.6%
4	2013	124,093	47,193	38%
5	2017	121,477	39,728	32.7%

5.4.2 Top Five Years of Assigned/Forecasted Blocks

Table 5-5 below shows the top five years of assigned/forecasted blocks pooling began. The highest historical percentage was 57.1 in 2011.

Table 5-5
Top Five Years of Assigned/ Forecasted Blocks since Pooling Began

Rank Since Pooling Began	Year	Percentage of Assigned/ Forecasted Blocks
1	2011	57.1
2	2010	48.6
3	2014	45.7
4	2015	43.9
5	2006	42.5

Section 6
Pooling Administration and Routing Number Administration Systems Performance

6.1. Pooling Administration System (PAS) Performance in 2017

6.1.1 Summary of PAS Performance in 2017

The Pooling Administration System (PAS) is the core of the thousands-block pooling operation and is vitally important to our customers. Because PAS stores all of the information relating to thousands-block administration and provides many essential reporting features that contain real-time data, reliability is critical.

Section 3.3 of FCC Contract Attachment A, Thousands-Block Pooling Administrator *Technical Requirements (Technical Requirements),* states that the pooling administration system shall, at a minimum, adhere to the following availability and reliability requirements:

1. Available 24 hours a day, 7 days a week.
2. Availability shall meet or exceed 99.9% of scheduled uptime.
3. Unscheduled maintenance downtime in any 12-month interval shall be less than nine (9) hours.
4. The mean time to repair (MTTR) for all unscheduled downtime in any 12-month interval shall be less than one hour during core business hours and four (4) hours for non-core business hours.
5. Scheduled maintenance downtime in any 12-month interval shall be less than 24 hours.

In 2017, we continued our practice of exceeding the PAS performance metric of 99.9% scheduled uptime. PAS was available for use **100%** of scheduled uptime during the 12-month period and PAS users experienced no *unscheduled* down time. This is the first time since 2009 that PAS has had no unscheduled down time. However, the PAS has exceeded the contract performance metric for every year since we began reporting in 2002.

Table 6-1 summarizes PAS system performance in 2017.

Table 6-1

Summary of Actual PAS Performance in 2017

MONTH	NUMBER OF POSSIBLE AVAILABLE HOURS	NUMBER OF HOURS AVAILABLE	TOTAL UNAVAILABILITY	SCHEDULED (S) OR UNSCHEDULED (U)
January	744	744	0	N/A
February	672	672	0	N/A

March	744	743 hours 55 minutes	5 minutes[8]	S
April	720	720	0	N/A
May	744	744	0	N/A
June	720	720	0	N/A
July	744	744	0	N/A
August	744	744	0	N/A
September	720	720	0	N/A
October	744	744	0	N/A
November	720	720	0	N/A
December	744	744	0	N/A

6.1.2 PAS Performance Metrics

In 2017, as outlined in Table 6-2, PAS consistently met or exceeded the required performance metrics set forth in Attachment A of the contract:

Table 6-2

PAS PERFORMANCE METRICS

REQUIRED SERVICE	PERFORMANCE STANDARD	ACCEPTABLE QUALITY LEVEL	ACCOMPLISHMENT
PAS Availability (See PWS 3.3)	Pooling Administration System is available	99.9%	**EXCEEDED** THE REQUIREMENT WITH A SCHEDULED AVAILABILITY LEVEL OF 100%
Maintenance (See PWS 3.3)	Unscheduled maintenance of the PAS is less than 9 hours in any 12 month period	100%	MET THE REQUIREMENT WITH NO INSTANCES OF UNSCHEDULED PAS AVAILABILITY IN 2017.
Maintenance (See PWS 3.3)	Scheduled maintenance of the PAS is less than 24 hours in any 12 month period	100%	MET THE REQUIREMENT WITH ONLY 5 MINUTES DOWNTIME RELATED TO SCHEDULED MAINTENANCE DURING 2017

[8] Note that the PAS is permitted to have 24 hours of scheduled downtime in any 12-month period.

6.1.3 PAS Maintenance and Change Orders in 2017

6.1.3.1 PAS Maintenance

We had a total of 10 PAS builds and maintenance updates in 2017; on January 13, January 20, February 24, March 24, May 15, June 2, July 10, August 4, September 29 and December 14. Although we requested and were approved for six hours and 30 minutes of scheduled downtime outside of normal business hours for some of these activities, we used only five minutes. In total [both unscheduled and scheduled for which we are permitted a total of 33 hours per year], PAS customers were only unable to access PAS for 5 minutes in 2017.

In our continuing focus on customer service, we provide detailed email notifications about upcoming PAS maintenance prior to the event to give our customers ample time to prepare for updates, and a second email notification the day of the scheduled maintenance.

6.1.3.2 PAS Change Orders

As noted in Section 2.3.2, changes and improvements to PAS are generally driven by changes to FCC rules, industry guidelines, or specific service provider or regulatory requests. The PA submitted and implemented two PAS change order proposals in 2017. One relates to the ongoing transition of the Number Portability Administration Center (the NPAC) from Neustar to iconectiv™, in accordance with FCC 15-35, due to the regular, real-time interaction between the PA and the NPAC that ensures that calls using numbers in pooled blocks are properly routed to their intended recipient. The other was the result of an INC issue. Table 6-3 provides details for the PAS change orders submitted in 2017.

Table 6-3
PAS Change Orders Submitted, Approved and Implemented in 2017

Number	Date Submitted	Type	Description	NOWG Recommendation	FCC Status	Implemented
3b	January 31	Regulatory Directive	Development and Support of the PAS NPAC API	Approved	Approved Contract Modification #009 on 3/22/17	11/15/17 and support is ongoing
4	June 16	Industry	Changes to PAS-generated emails based on Issue 830, NAS and PAS Email/Report Enhancements	Approved	Approved Contract Modification #012 on 9/29/17	12/14/17

6.1.4 Pooling Trouble Tickets Opened and Closed in 2017

We reported trouble ticket details each month to the NOWG and in the "Monthly Pooling Metrics Report" posted on the website.

There are six reasons for opening a trouble ticket, as specified in Section 2.22.4 of the Technical Requirements relating to issues with the PAS, website, facsimile, voicemail, email and contractor ISP. In 2014, we added a category of OTHER because the reason did not fall into any of the other categories.

The PA opened and closed 5 pooling trouble tickets in 2017, which is fewer than the 8 trouble tickets opened in 2016. We responded to each issue as quickly as possible to ensure timely access to PAS for customer requests, and found workarounds so that no customer was unable to complete its request. At no time was any user's information compromised.

All of the trouble tickets opened by the PA in 2017 were due to a PAS system issue. The overall average time that a trouble ticket was open until resolution was 39 days 7 hours 25 minutes. Table 6-4 shows the details on the total number of PAS trouble tickets opened and closed in 2017.

Table 6-4
Pooling Trouble Tickets in 2017

TROUBLE TICKET NUMBER	DATE OPENED	DATE CLOSED	ISSUE TYPE
1552	07/06/2017	08/04/2017	PAS System Error
1550	06/30/2017	08/04/2017	PAS System Error
1549	06/28/2017	08/04/2017	PAS System Error
1548	03/01/2017	06/02/2017	PAS System Error
1546	02/13/2017	02/15/2017	PAS System Error

Table 6-5 show the total number of trouble tickets opened, by year, for 5 years.

Table 6-5
Number of Pooling Trouble Tickets from 2013 through 2017

YEAR	NUMBER OF TROUBLE TICKETS
2013	2
2014	6
2015[9]	32
2016	8
2017	5

[9] The PAS re-write was completed in 2015, and the new system was rolled out that year.

6.2. Routing Number Administration System Performance in 2017

6.2.1 Summary of RNAS Performance in 2017

As with PAS, the Routing Number Administration System (RNAS) is essential to the routing number (p-ANI) administration operation because RNAS stores all of the information relating to p-ANI administration to facilitate routing of e9-1-1 calls. Because it provides essential reporting features that contain real-time data, reliability is critical. RNAS is subject to the same availability requirements as PAS.

In 2017, we continued to exceed the RNAS performance metric of 99.9% scheduled uptime. RNAS was available for use **100%** of the year. In 2017, RNAS users experienced no *unscheduled* or scheduled down time. The RNAS has exceeded its performance metric every year since implementation in March 2012.

As outlined in Table 6-6, in 2017 RNAS exceeded the performance metrics set forth in Attachment C of the contract:

Table 6-6
Summary of Actual RNAS Performance in 2017

MONTH	NUMBER OF POSSIBLE AVAILABLE HOURS	NUMBER OF HOURS AVAILABLE	TOTAL UNAVAILABILITY
January	744	744	0
February	672	672	0
March	744	744	0
April	720	720	0
May	744	744	0
June	720	720	0
July	744	744	0
August	744	744	0
September	720	720	0
October	744	744	0
November	720	720	0
December	744	744	0

6.2.2 RNAS Performance Metrics

Table 6-7 shows that RNAS met or exceeded the performance metrics as set forth in Section 3.3 of Attachment A of the contract for PA systems in 2017:

Table 6-7
RNAS PERFORMANCE METRICS

REQUIRED SERVICE	PERFORMANCE STANDARD	ACCEPTABLE QUALITY LEVEL	ACCOMPLISHMENT
RNAS Availability (See PWS 3.3)	Routing Number Administration System is available	99.9%	**EXCEEDED** THE REQUIREMENT WITH A SCHEDULED AVAILABILITY LEVEL OF 100%
Maintenance (See PWS 3.3)	Unscheduled maintenance of the RNAS is less than 9 hours in any 12 month period	100%	MET THE REQUIREMENT WITH NO UNSCHEDULED DOWNTIME RESULTING IN NO RNAS UNAVAILABILITY IN 2017.
Maintenance (See PWS 3.3)	Scheduled maintenance of the RNAS is less than 24 hours in any 12 month period	100%	MET THE REQUIREMENT BY USING NO APPROVED DOWNTIME AS A RESULT OF SCHEDULED MAINTENANCE DURING 2017.

6.2.3 RNAS Maintenance in 2017

6.2.3.1 RNAS Maintenance

We had two RNAS maintenance updates in 2017; on February 15 and July 10. We requested no scheduled downtime and RNAS customers experienced no downtime for these updates.

6.2.3.2 RNAS Change Orders

Changes and improvements to RNAS are generally driven by changes to FCC rules, industry guidelines, or specific service provider or regulatory requests. The RNA submitted *Change Order 5* in 2017, related to a request by users for a more efficient way to apply for large numbers of p-ANIs through the Routing Number Administration System (RNAS), comparable to the method we have in place for mass modifications and mass returns. Table 6-8 describes the RNAS change order submitted in 2017.

Table 6-8

RNAS Change Orders Submitted, and Approved in 2017

Number	Date Submitted	Type	Description	NOWG Recommendation	FCC Status
5	September 8	Industry	Proposed Enhancement to RNAS related to requesting large numbers of p-ANIs.	Approved	Approved Contract Modification #013 on 10/31/17

6.2.4 P-ANI Administration Trouble Tickets

The RNA opened three trouble tickets for RNAS in 2017. Two of the trouble tickets were due to an RNAS system issue and one was due to a website issue. The overall average time that a trouble ticket was open until resolution was 26 days, 13 hours, and 16 minutes. Table 6-9 shows the detail on the total number of RNA trouble tickets opened and closed in 2017.

Table 6-9
RNA Trouble Tickets in 2017

TROUBLE TICKET NUMBER	DATE OPENED	DATE CLOSED	ISSUE TYPE
1547	02/15/2017	02/16/2017	Website Issue
1551	07/12/2017	07/12/2017	RNA System Issue
1553	10/13/2017	[10]	RNA System Issue

Table 6-7 shows the total number of RNA trouble tickets opened, by year, since 2013.

Table 6-10
Number of RNA Trouble Tickets from 2013 through 2017

YEAR	NUMBER OF TROUBLE TICKETS
2013	0
2014	2
2015	0
2016	0
2017	3

[10] This trouble ticket remained open at the end of 2017.

6.3. PA and RNA Systems Disaster Recovery Testing

In 2017, we completed PA and RNA systems disaster recovery testing on October 27.

In addition to the system DRP testing, our Concord office also assesses evacuation procedures and the ability of personnel to access the system remotely during the year.

Section 7
Status of Required Transferable Property

Neustar Pooling Administration Services affirms that all equipment defined in the annual inventory report required by Section 3.21 of the contract is considered transferable property, and is available for transfer upon direction from the FCC. FCC asset tags are appropriately entered in the transferable property inventory report, which is updated, reviewed, and certified by the Manager of Security and Technical Operations (MSTO) as required by the FCC Property Management Division.

Section 8
Industry Issue Identification/Feedback

The PA worked with the industry through several channels during the year: providing status reports at the North American Numbering Council (NANC) meetings, interacting with the Numbering Oversight Working Group (NOWG), participating in NANC subgroup meetings, and participating in industry forums. This section contains information on the industry forums the PA participated in, including the number of issues and contributions that the PA submitted, as well as the feedback the PA received from the NOWG after the Operational Review, and quarterly *Tips*.

8.1 North American Numbering Council (NANC)

Neustar, as national PA, provided status reports in person at three of the four meetings of the North American Numbering Council (NANC) in 2017; in March, June, and September. The PA reports consisted of a 12-month rolling status of thousands-block pooling administration and routing number administration, as well as events affecting the performance of the PA and RNA.

The NANC charter expired on September 18 and the re-chartering was announced in November. While the PA report was not included in the meeting agenda for the December meeting, we did submit our regular report to the FCC on November 30.

The PA also attended the scheduled meetings for two NANC subgroups; the Future of Numbering (FoN) Working Group and the Internet Protocol (IP) Issue Management Group.

8.2 Industry Forums

As the national PA, our participation at industry forums includes:

- Working on issues that affect pooling administration;
- Answering questions relating to the thousands-block pooling process and the P-ANI administration process;
- Actively participating in discussions; and
- Developing and submitting new issues based on input we received from the industry, regulators, and internal sources.

The PA participated in the following industry forums in 2017:

- **Industry Numbering Committee (INC)** – the PA participated in all 6 face-to-face meetings and 25 virtual meetings. The PA submitted 8 new issues and 12 new contributions in 2017 that were all pooling-related. There were no p-ANI related issues or contributions.

- **Common Interest Group on Rating and Routing (CIGRR)** – the PA participated in the 4 CIGRR meetings and 9 conference calls. We continued to review the BCRnoNXD and 3H validation reports monthly prior to the reports being sent to the Administrative Operating Company Numbers

(AOCNs). We also reviewed the BCRnoNXD 3E report as needed. When requested we also researched other data comparison requests sent by iconectiv TRA. We continue to address issues and concerns in the committee from participants (some resulting in INC issues).

- **Local Number Portability Working Group (LNPA WG)** – the PA participated in five LNPA WG meetings and seven conference calls as a subject matter resource.

- **Emergency Services Interconnection Forum (ESIF)** – the PA, as the Routing Number Administrator, attended two ESIF meetings.

- **Testing Landscape Team (TLT)** – the PA participated in nine Testbed Landscape Team meetings.

The PA also participated in industry meetings regarding the FCC proceedings relating to Robocalling, CG Docket No. 17-59, and National Number Portability (NNP), WC Docket 17-244.

8.3 PA Interaction with the Numbering Oversight Working Group (NOWG)

The Numbering Oversight Working Group (NOWG) was a working group of the NANC that reviews our annual performance. The NOWG was made inactive during the NANC re-chartering process. The NOWG's activities with the PA prior to September 2017 included:

- Reviewing PA Change Orders and providing a recommendation to the FCC for the disposition of the proposed change order;
- Completing the annual performance review of the PA and providing it to the FCC;
- Conducting a monthly meeting with the PA to review the previous month's performance.

The Regional Director, External Relations acted as the liaison between the PA and the NOWG, responding to pooling-related questions as they arise, and providing input to the NOWG on any issues or questions as necessary during the year. The entire PA management team participated with the NOWG in the monthly conference calls and during the annual performance review process, including the operational review.

In 2017, the NOWG and PA met via conference call from January through August, to discuss the PA's performance during the previous month. The 2017 meeting dates were January 20, February 14, March 14, April 18, May 31, June 20, July 18, and August 9.

Prior to each monthly meeting, the PA provided a detailed agenda relating to PA performance and then reviewed the information with the NOWG during each monthly meeting. The standing agenda items were:

- Rate centers with less than 6 months inventory based on forecast,
- Number of rate centers with no blocks available with blocks forecasted within 6 months,
- Number of codes opened for pool replenishment,

- Rate centers with blocks with a pending status,
- Applications – number of applications processed monthly (running 12 month total),
- Number of Part 1s passed thru from PAS to NAS (running 12 month total),
- Percent of applications (Part 3s) not processed within 7 calendar days,
- Reasons that applications were not processed within 7 calendar days, when applicable,
- Percent of calls returned within one business day,
- Number of blocks on reclamation list (including the new blocks and the total number of blocks),
- Program Improvement Plan (PIP),
- Formal complaints and corrective action plans to resolve complaints, if any,
- FCC and/or NANC News,
- INC read out,
- P-ANI activity,
- Change orders,
- Pooling related activities,
- Regulatory update,
- Customer focus,
- Tracking log,
- Next meeting,
- Other items of importance that do not fall into any of the above categories,
- Open Discussion.

In addition to the reporting details for the agenda items above, the PA provided the following reports for the NOWG for the monthly meetings:

- NOWG Blocks Report Information Summary,
- NOWG Summary Data,
- Trouble Tickets,
- Performance Improvement Plan, and
- PA Monthly NANC Report.

We also provided the NOWG with Mid-Year Highlights that presented a summary of PA performance for the first six-months of the 2017 calendar year. In all, the PA provided 34 reports to the NOWG during meetings through August 2017.

Since 2006, as part of our monthly meetings, we have provided the NOWG with an ongoing list of noteworthy specific ways in which we responded to the more significant issues and requests from our customers during the year. This list includes only items that required extra time and effort on the part of the PA and p-ANI Administrator and does not include all the day-to-day questions and requests that the pooling staff members field as part of their daily workload.

While we did not meet monthly from September through December, we continued to track our customer focus items. We provided 131 customer focus items to the NOWG for the monthly meetings through August 2017 and tracked another 76 customer focus items for September through December.

As shown in Table 8-1, we had a total of 207 customer focus items in 2017.

Table 8-1
Total 2017 Customer Focus Items by Month

MONTH	POOLING	P-ANI	TOTAL
January	7	6	13
February	7	7	14
March	10	8	18
April	11	5	16
May	10	5	15
June	17	5	22
July	13	3	16
August	13	3	16
September	15	4	19
October	15	8	23
November	12	3	15
December	16	4	20
TOTAL	**146**	**61**	**207**

Also in 2017, the NOWG completed the annual review of 2016 PA and P-ANI Administrator performance and rated the performance as "Met" contractual requirements by using the following inputs:

- 2016 Performance Feedback Survey for PA and RNA
- Monthly Reports
- Annual Operational Review, and
- NOWG observations and monthly interactions with the PA.

As a result of the annual operational review of 2016 performance, which was held March 9 – March 10, 2017, via teleconference, the NOWG made four formal suggestions for continuous improvement of pooling administration that the PA took under consideration. (See Table 8-2) The PA worked, and continues to work, cooperatively with the NOWG to make desired industry improvements while also meeting our contractual requirements.

Table 8-2
NOWG Suggestions for PA improvements for 2017

NOWG Suggestion	PA improvement
Continue to have internal training sessions with the PA and RNA personnel to ensure consistency in understanding the processes when responding to service providers and regulators.	The PA and RNA continually had training with the staff. If there was an issue or a process change, the staff reviewed that issue and or process. During staff meetings, Methods and Procedures (M&Ps) are reviewed, as are any changes to guidelines or processes.

NOWG Suggestion	PA improvement
Provide details of the type of modifications being made to PAS and RNAS in the notices sent to users when events are scheduled to implement software builds or other improvements, particularly when changes may impact FTP users or users with automated processes.	The PA and RNA sent out notices to the users prior to each build with details of the build. PAS notices were sent in January, February, March, May, August, September and December.
Review the PA and RNA performance survey comments for any possible future enhancements to PAS or RNAS and consider adding them to the list of possible future enhancements; provide the comprehensive list to the NOWG for review.	The PA reviewed the survey comments and made contact with the two companies who provided comments that needed follow-up. We resolved the issues that were raised and added items to the service provider proposed enhancement list. We notified the NOWG of our conclusions.
Continue to proactively search for ways to improve processes, educate customers and enhance system functionality.	This is an ongoing effort and is addressed through our customer focus items, quarterly tips and change orders.

The NOWG also provides recommendations to the FCC on all PAS and RNAS change order proposals. In 2017, the NOWG provided three recommendations on our change orders. For details on PAS and RNAS change orders, see sections 6.1.3.2 and 6.2.3.2.

8.4 Formal Complaints

Pursuant to Section 2.9.4 of Clause C.1 of the *Contract for Pooling Administration Services for the Federal Communications Commission,* if a performance problem is identified by a telecommunications industry participant, the PA must notify the FCC of the problem within one business day. The PA must then investigate the problem and report back within a period of not more than 10 business days from the date of the complaint, to the FCC and to the telecommunications industry participant on the results of such investigation and any corrective action taken or recommended to be taken.

In 2017, the PA received no formal complaints.

8.5 Quarterly Tips

8.5.1 Pooling Tips of the Quarter

The PA has been offering *Pooling Tips* since 2004 and feedback from recipients continues to be positive. Topics for the *Pooling Tip* are generated from suggestions received from regulators and service providers, INC action items, and internal observations that processes need to be clarified. The *Pooling Tip* is sent via email to the PAS distribution list at the beginning of each quarter. The *Pooling Tip* provides helpful

information regarding the PAS and thousands-block pooling process, as well as serving as a useful reference for all PAS users. Archive files for *Pooling Tip* from previous years can be found on our website.

Table 8-3 lists all of the *Pooling Tip* topics that were covered by quarter in 2017.

Table 8-3
2017 Quarterly Pooling Tips

Month	Topic
January	Using the Back Arrow Button on your Internet Browser While in PAS
April	To Begin Pooling in an Excluded Rate Center
July	Common Mistakes on MONTHS TO EXHAUST and UTILIZATION CERTIFICATION WORK SHEET - TN Level (MTE) Form
October	Designated Point of Contact - Search for New Block Holder/New Code Holder

8.5.2 P-ANI Tips of the Quarter

Building on the success of the Pooling *Tips*, the RNA began sending *P-ANI Tips* in April of 2012. The *P-ANI Tip* is sent via email to the RNAS distribution list at the beginning of each quarter. The *P-ANI Tip* provides helpful information regarding RNAS and the p-ANI request process, and serves as a useful reference for all RNAS users. Archive files for all *Tips* can be found on our website.

Table 8-4 lists all of the *P-ANI Tip* topics that were covered by quarter in 2017.

Table 8-4
2017 Quarterly P-ANI Tips

Month	Topic
January	Supporting Documentation for New p-ANI Requests
April	p-ANI Forecast Report
July	Supporting Documentation for New p-ANI Requests
October	RNAS Passwords

8.6 Customer Support/Help Desk

8.6.1 Pooling Administration Customer Support/Help Desk

The Pooling Customer Support Representative (CSR or Help Desk) responds to both internal and external questions and requests for technical support, and attempts to promptly confirm the cause of a problem.

The CSR:

- Creates, deletes, and maintains user accounts and passwords;

- Answers a variety of inquiries from customers, including questions regarding use of forms and the PAS, and assists users with locating documentation.
- Works with carriers to troubleshoot problems and assist in resolving technical problems;

In 2017, the CSR handled approximately 698 calls from customers, which is a slight decrease from the 2016 total of 875, and the lowest total in five years. The drop in Help Desk calls can be attributed to reliable PAS performance and no complex changes to pooling processes. Table 8-5 shows the numbers of calls to the pooling Help Desk by year since 2013.

Table 8-5
Number of Pooling Customer Support/Help Desk Calls from 2013 through 2017

Year	Number of Help Desk Calls
2013	1,958
2014	1,118
2015	914
2016	875
2017	698

8.6.2 Routing Number Administration (RNA) Customer Support

The P-ANI Administration Help Desk:

- Creates, deletes, and maintains user accounts and passwords;
- Responds to a variety of p-ANI related questions regarding use of forms and the RNAS, and assists users with locating documentation; and
- Works with carriers to troubleshoot problems and assist in resolving technical problems.

In 2017, the P-ANI Administration staff processed 36 new user registration requests, of which 31 were approved and 5 were denied; 20 profile updates, of which 14 were approved and 6 were denied, and handled approximately 69 phone calls.

Table 8-6 shows the numbers of calls to the P-ANI Customer Support/Help Desk for the past five years.

Table 8-6
Number of Customer Support Calls for P-ANI Issues from 2013 through 2017

Year	Number of Calls
2013	143
2014	167
2015	81
2016	72
2017	69

Section 9

Volume of Reports Produced in 2017
Aggregated by Regulatory Agency, NANC, NANPA, Service Providers, and Metrics

This section identifies the volume of reports in 2017 related to pooling and p-ANI, aggregated by regulatory agency, NANC, NANPA, and service providers. The total in each section includes standard contract reports as well as non-standard (ad hoc) reports. These totals *do not* include reports that were obtained directly from the Pooling Administration website, the Pooling Administration System (PAS), or the Routing Number Administration System (RNAS). We produced 575 reports in 2017, which is an average of about 48 reports per month.

Table 9-1 shows the total number of reports produced during 2017 aggregated by regulatory agency, NANC, NANPA, service providers and monthly metrics. The total number of reports above includes:

FCC: Contract Data Requirements List (CDRL), *ad hoc*, and other reports required by the contract
STATES: pooling status, reclamation, educational sessions, and miscellaneous *ad hoc* reports.
NANC: the pooling status reports for the four NANC meetings and the monthly report we provide.
NANPA: pooling status reports for NANPA industry meetings, *ad hoc* reports, and two NRUF-cycle reports.
SERVICE PROVIDERS: rate center change reports, implementation meeting reports, monthly meeting reports to the NOWG, and miscellaneous *ad hoc* reports.
MONTHLY METRICS: required by Section 2.22.4.5 of the requirements document. This report includes information about trouble tickets, change orders, communications, and forecasting data on a per-state basis and summaries of application processing on a monthly basis by the PA and RNA. This report is posted to the website only.

Table 9-1
Total 2017 Reports

	Total number of reports
FCC	93
STATES	330
NANC	15
NANPA	28
SERVICE PROVIDER	98
MONTHLY METRICS	12
TOTAL	**576**

Section 10
Trends in Pooling Since 2013[11]

When Neustar began administering number pooling trials in 1998, nearly every NPA was experiencing acceleration of expected exhaust dates. Many required extraordinary jeopardy procedures[12] to maintain enough resources until relief was implemented.

There remain only 2 NPAs in a jeopardy status, compared to 73 in 1999, and 17 in 2010. Only one, Illinois 217, has been in jeopardy status since the rollout of pooling began in 2002.

This section contains pooling statistics that illustrate the impacts and activity trends in the pooling environment between 2013 and 2017, with the exception of Section 10.1, which includes NXXs saved since pooling began.

10.1 NXXs Saved by Pooling

The PA calculates that 80,646 NXXs have been saved by pooling, which is the equivalent of 90 NPAs. (*See Section 10.1.1 below for further details*)

Table 10-1 illustrates by NPA/NPA complex[13] the NXXs that have been saved in all NPA areas, in 50 states and the District of Columbia and Puerto Rico.

Table 10-1
NXXs Saved by Pooling

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
201/551	New Jersey	352
202	District of Columbia	26
203/475	Connecticut	322
205	Alabama	303
206	Washington	56
207	Maine	624
208/986	Idaho	305
209	California	464

[11] Except Section 10.1 and 10.2.3 which is since pooling began.
[12] NANPA declares "jeopardy" in area codes for which the supply of NXXs could exhaust before relief can be provided.
[13] An NPA complex is the combination of all NPAs tied to any specific geographic rate center, including overlay NPAs.

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
210/726	Texas	23
212/332/646/917	New York	33
213/323	California	243
214/469/972	Texas	508
215/267	Pennsylvania	507
216	Ohio	55
217	Illinois	502
218	Minnesota	352
219	Indiana	291
220/740	Ohio	901
223/717	Pennsylvania	661
224/847	Illinois	593
225	Louisiana	196
228	Mississippi	87
229	Georgia	140
231	Michigan	541
234/330	Ohio	667
239	Florida	117
240/301	Maryland	659
248/947	Michigan	324
251	Alabama	123
252	North Carolina	363
253	Washington	114
254	Texas	269
256/938	Alabama	343
260	Indiana	316
262	Wisconsin	347
269	Michigan	540
270/364	Kentucky	473
272/570	Pennsylvania	938
276	Virginia	298
281/346/713/832	Texas	517
302	Delaware	362
303/720	Colorado	105
304/681	West Virginia	796
305/786	Florida	108

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
307	Wyoming	162
308	Nebraska	127
309	Illinois	339
310/424	California	323
312/872	Illinois	22
313	Michigan	98
314	Missouri	82
315/680	New York	736
316	Kansas	114
317/463	Indiana	299
318	Louisiana	408
319	Iowa	206
320	Minnesota	300
321	Florida	65
321/407	Florida	207
325	Texas	138
331/630	Illinois	347
334	Alabama	320
336/743	North Carolina	331
337	Louisiana	327
339/781	Massachusetts	570
347/718/917/929	New York	238
347/718/929	New York	38
351/978	Massachusetts	759
352	Florida	346
360/564	Washington	369
361	Texas	307
380/614	Ohio	179
385/801	Utah	180
386	Florida	197
401	Rhode Island	253
402/531	Nebraska	398
404/470/678	Georgia	28
405	Oklahoma	408
406	Montana	347
408/669	California	173

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
409	Texas	180
410/443/667	Maryland	1036
412/878	Pennsylvania	331
413	Massachusetts	402
414	Wisconsin	49
415/628	California	218
417	Missouri	455
419/567	Ohio	835
423	Tennessee	334
425	Washington	132
430/903	Texas	526
432	Texas	112
434	Virginia	304
435	Utah	154
440	Ohio	415
442/760	California	741
458/541	Oregon	685
470/678/770	Georgia	410
478	Georgia	139
479	Arkansas	164
480	Arizona	16
484/610	Pennsylvania	1030
501	Arkansas	222
502	Kentucky	275
503/971	Oregon	306
504	Louisiana	52
505	New Mexico	112
507	Minnesota	393
508/774	Massachusetts	1113
509	Washington	429
510	California	216
512/737	Texas	289
513	Ohio	188
515	Iowa	226
516	New York	181
517	Michigan	418

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
518/838	New York	844
520	Arizona	105
530	California	660
534/715	Wisconsin	373
539/918	Oklahoma	516
540	Virginia	570
559	California	385
561	Florida	148
562	California	129
563	Iowa	154
571/703	Virginia	252
573	Missouri	851
574	Indiana	208
575	New Mexico	246
580	Oklahoma	451
585	New York	520
586	Michigan	159
601/769	Mississippi	490
602	Arizona	12
603	New Hampshire	661
605	South Dakota	145
606	Kentucky	304
607	New York	420
608	Wisconsin	339
609	New Jersey	577
612	Minnesota	24
615/629	Tennessee	329
616	Michigan	372
617/857	Massachusetts	317
618	Illinois	513
619	California	151
620	Kansas	556
623	Arizona	13
626	California	143
631/934	New York	691
636	Missouri	340

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
641	Iowa	250
650	California	230
651	Minnesota	97
657/714	California	224
660	Missouri	371
661	California	294
662	Mississippi	699
682/817	Texas	260
701	North Dakota	132
702/725	Nevada	70
704/980	North Carolina	456
706/762	Georgia	480
707	California	720
708	Illinois	422
712	Iowa	244
716	New York	517
719	Colorado	227
724/878	Pennsylvania	1132
727	Florida	81
731	Tennessee	332
732/848	New Jersey	563
734	Michigan	437
747/818	California	259
754/954	Florida	95
757	Virginia	299
763	Minnesota	47
765	Indiana	622
772	Florida	138
773/872	Illinois	154
775	Nevada	210
779/815	Illinois	774
785	Kansas	404
787/939	Puerto Rico	156
802	Vermont	363
803	South Carolina	394
804	Virginia	413

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
805	California	451
806	Texas	196
808	Hawaii	53
810	Michigan	459
812/930	Indiana	583
813	Florida	152
814	Pennsylvania	796
816	Missouri	357
828	North Carolina	363
830	Texas	367
831	California	222
843/854	South Carolina	344
845	New York	822
850	Florida	251
856	New Jersey	437
858	California	108
859	Kentucky	236
860/959	Connecticut	523
862/973	New Jersey	632
863	Florida	226
864	South Carolina	388
865	Tennessee	228
870	Arkansas	390
901	Tennessee	86
904	Florida	176
906	Michigan	175
907	Alaska	30
908	New Jersey	368
909	California	331
910	North Carolina	462
912	Georgia	197
913	Kansas	137
914	New York	384
915	Texas	45
916	California	187
919/984	North Carolina	326

NPA/NPA Complex	State	Quantity of NXXs Saved by Pooling
920	Wisconsin	492
925	California	264
928	Arizona	186
931	Tennessee	397
936	Texas	190
937	Ohio	613
940	Texas	195
941	Florida	160
949	California	116
951	California	310
952	Minnesota	28
956	Texas	228
970	Colorado	482
979	Texas	232
985	Louisiana	320
989	Michigan	718
Totals		**80,646**

10.2 Trends in Thousands-Block Number Pooling

The following sub-sections contain summaries of thousands-block number pooling statistics since 2013.

10.2.1 Pooling Charts

The following charts illustrate the trends in the thousands-block number pooling numbering environment between 2013 and 2017. Table 10-2 shows:

- NXXs opened for LRNs, dedicated customers, and pool replenishment,
- Blocks assigned by the PA during that year,
- Total assigned blocks in the PAS at year end, and
- Total applications processed at year end (Part 3s).

Table 10-2
Pooling Activity from 2013 through 2017 At-A-Glance

	2013 Statistics	2014 Statistics	2015 Statistics	2016 Statistics	2017 Statistics
NXXs Opened for LRNs	532	352	425	382	436
NXXs Opened for Dedicated Customers	57	79	103	169	91
NXXs Opened for Pool Replenishment	2,022	2,950	3,188	2,827	2,165
Blocks Assigned by PA During Year	47,326	59,440	53,416	55,723	39,728
Total Assigned Blocks in PAS at Year End	401,186	451,859	494,582	540,560	568,959
Applications Processed	137,375	139,181	145,828	123,629	134,389

Figures 7 through 12 are graphic representations of each individual category.

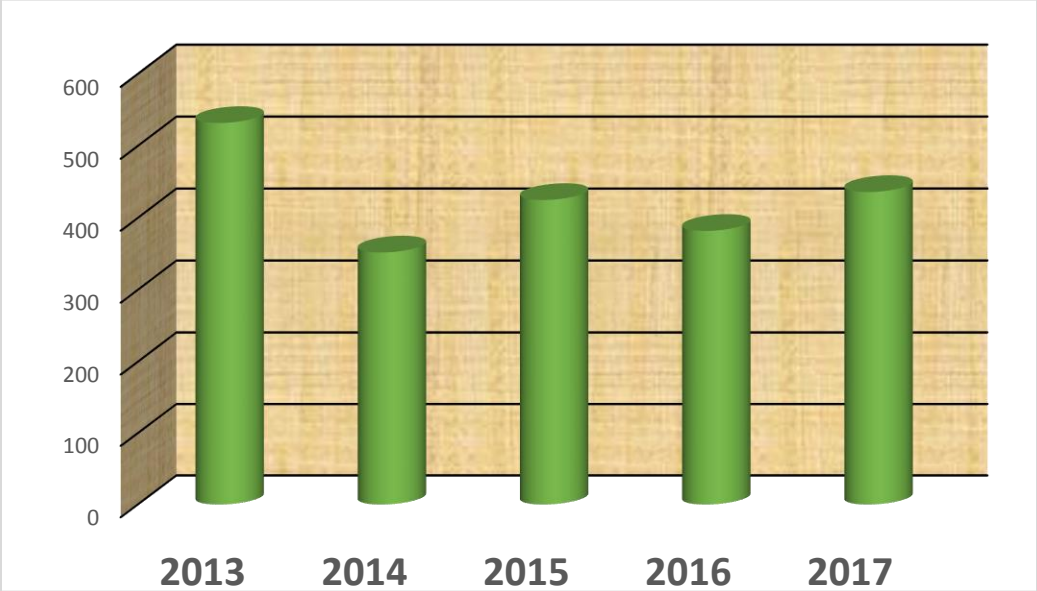

Figure 6 – CO Codes Opened for LRNs from 2013 through 2017

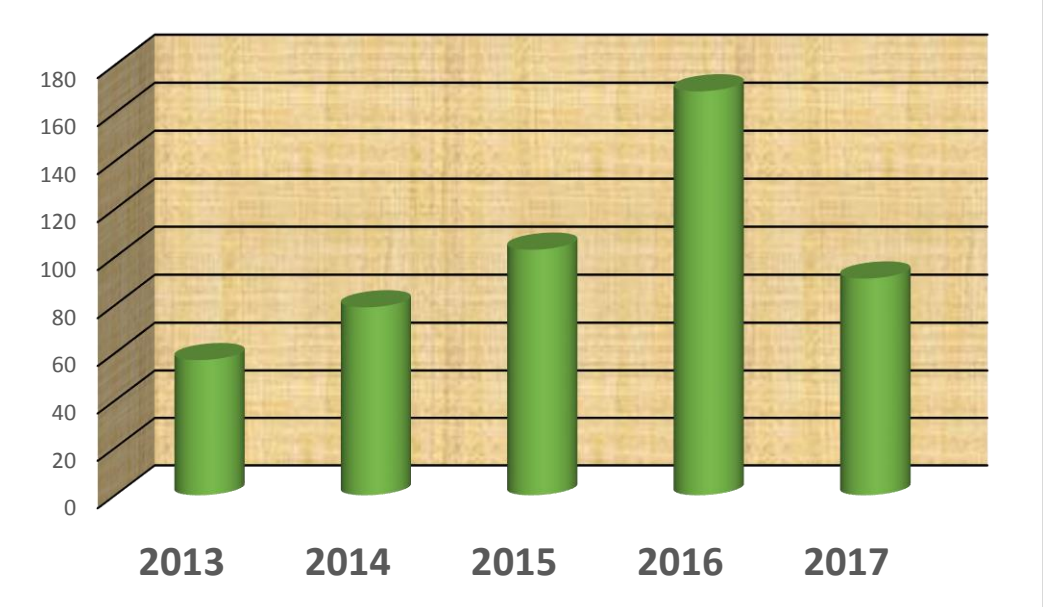

Figure 7 – CO Codes Opened for Dedicated Customers from 2013 through 2017

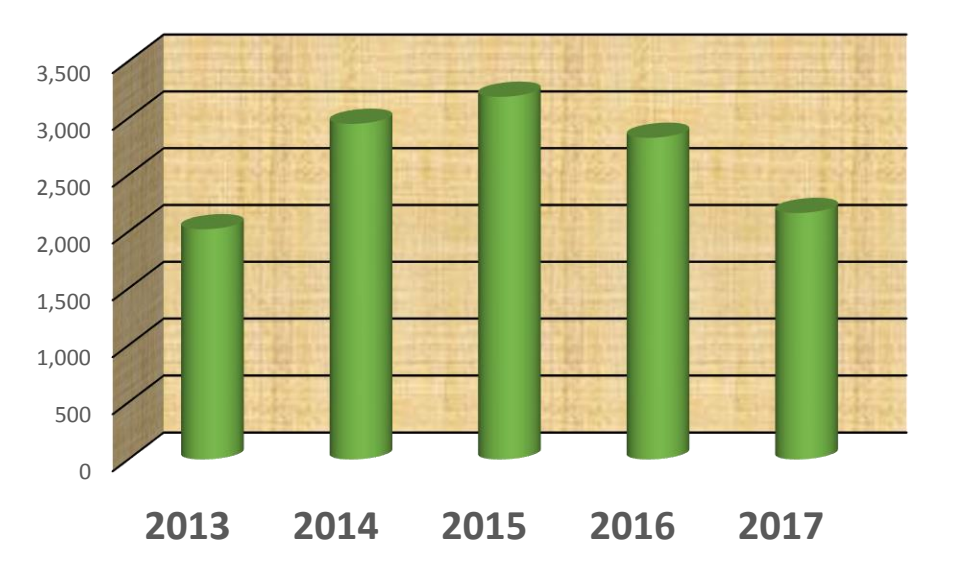

Figure 8 – CO Codes Opened for Pool Replenishment from 2013 through 2017

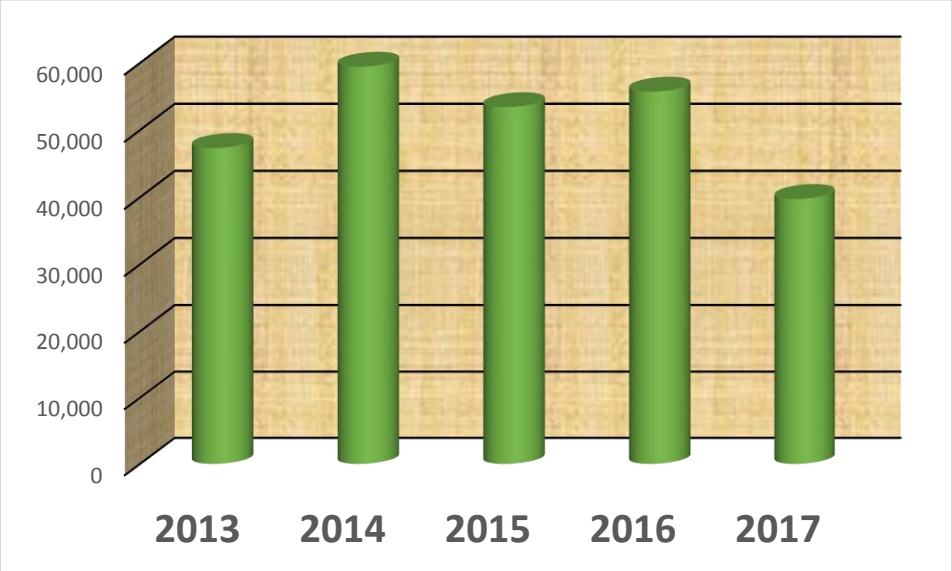

Figure 9 – Blocks Assigned During Years 2013 through 2017

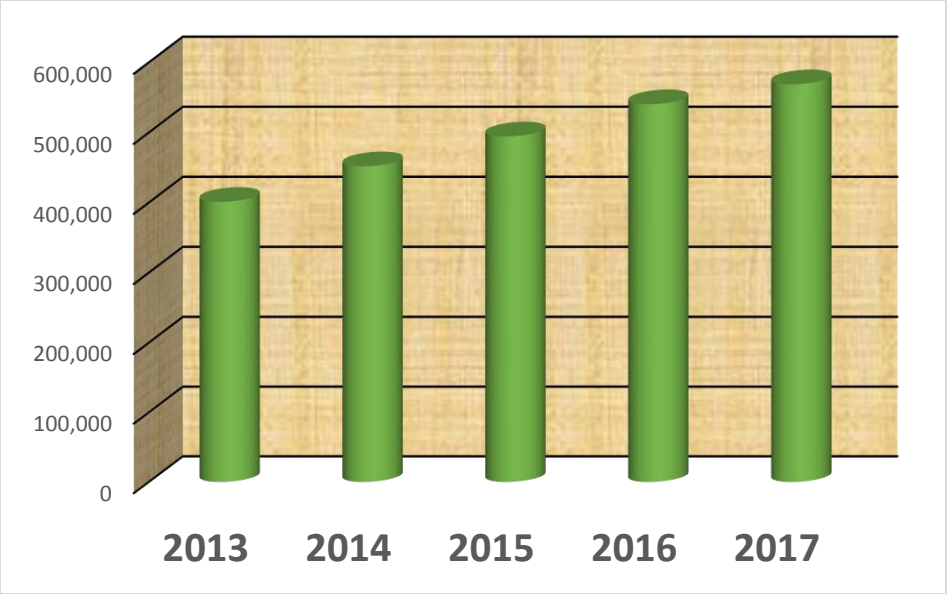

Figure 10 – Assigned Blocks at End of Year 2013 through 2017

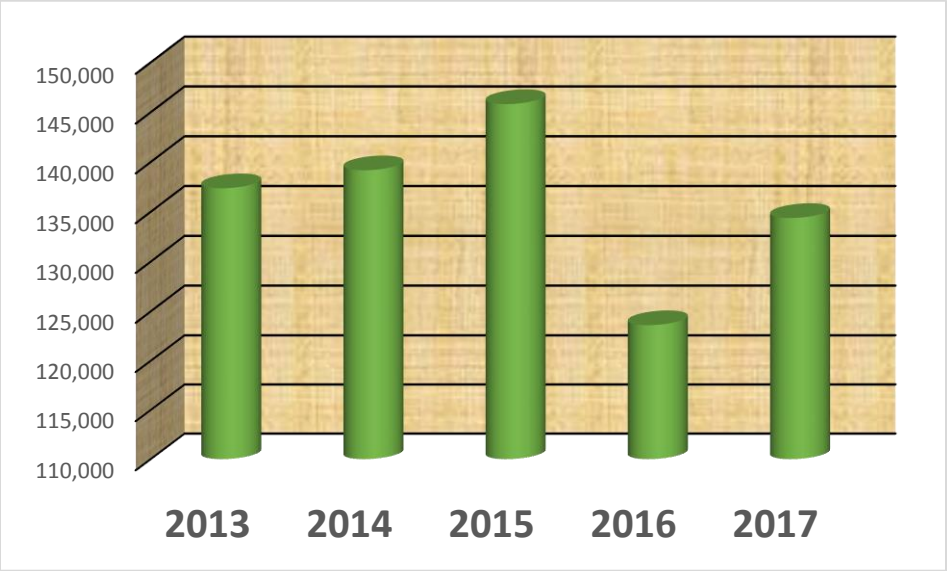

Figure 11 – Applications (Part 3s) Processed From Years 2013 through 2017

10.2.2 Total Applications Processed (Part 3s) from 2013 through 2017

The total number of applications (Part 3s) processed is the best measure of the actual processing work performed by the pooling administrators. Although a large majority of applications for numbering resources are processed and approved immediately, some are suspended for future action, and some are withdrawn or denied entirely. Each of these activities generates a Part 3.

Table 10-3 contains the total numbers of Part 3s processed by month from 2013 through 2017.

Table 10-3
Total Applications Processed (Part 3s) Since 2013

	2013	2014	2015	2016	2017
Jan	15,136	8,069	7,518	6,922	11,063
Feb	9,602	8,725	15,628	12,323	15,301
Mar	10,357	9,422	10.763	15,097	17,491
Apr	11,823	17,601	13,295	9,371	12,298
May	12,863	8,977	17,565	9,614	12,187
Jun	25,142	8,145	24,285	10,767	10,004
Jul	8,016	10,493	13,310	8,067	8,547
Aug	9,817	15,232	8,068	11,361	7,667
Sep	8,374	12,113	9,977	9,197	7,262
Oct	10,499	15,849	8,524	10,156	7,110
Nov	7,975	13,954	7,604	8,851	10,782
Dec	7,771	10,601	9,291	11,903	14,677
TOTAL	**137,375**	**139,181**	**145,828**	**123,629**	**134,389**

10.2.3 Cumulative Thousands Blocks Assigned Since 2002

The following graph illustrates the cumulative number of total blocks assigned since 2002.

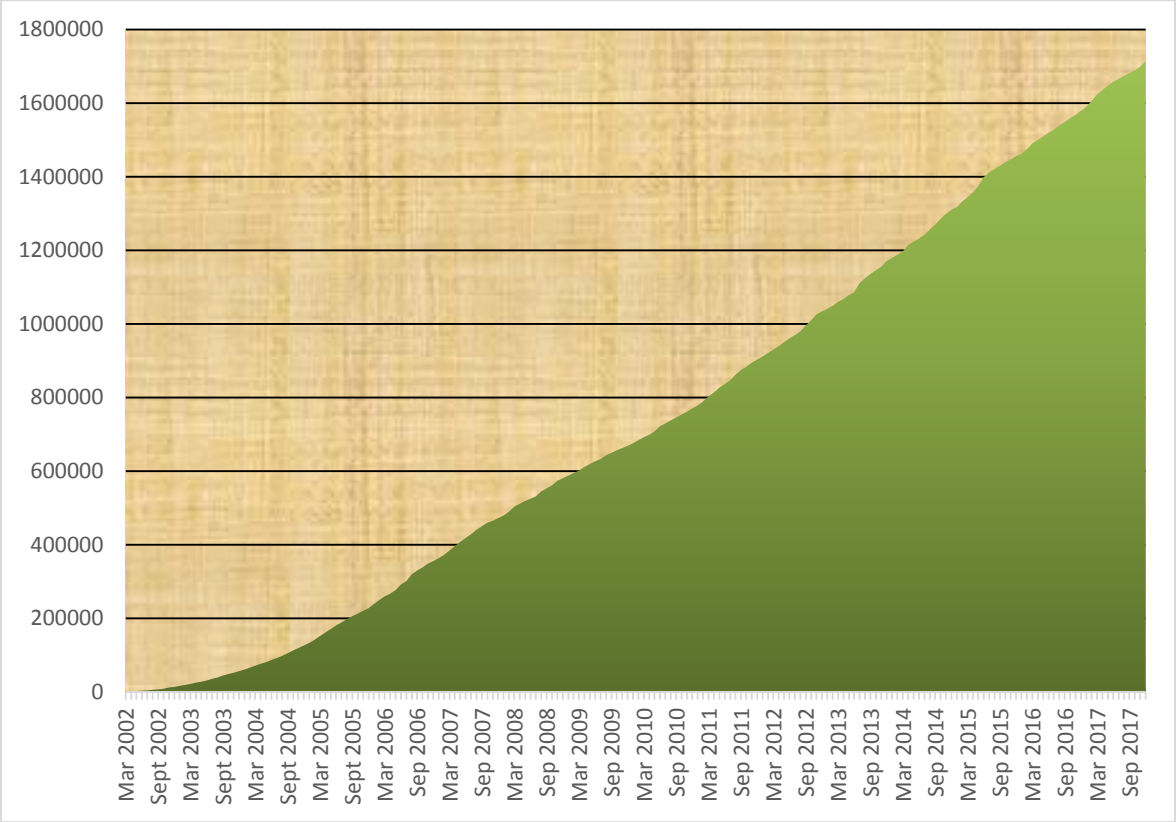

Figure 12 – Cumulative Pooling Administration Applications (Part 3s) from March 2002 through December 2017

10.3 – Reclamation 2013 through 2017

The PA has been authorized to reclaim 107 blocks since 2013. Table 10-4 shows the total number of blocks reclaimed by state since 2013, ranked from highest to lowest.

Table 10-4
Total Number of Blocks Reclaimed by State from 2013 through 2017

State	2013	2014	2015	2016	2017	Total
CALIFORNIA	3	15	1			19
COLORADO	17				1	18
NEW JERSEY	15					15
VIRGINIA	11			1		12
PENNSYLVANIA	9					9
WASHINGTON	4	1			2	7

State	2013	2014	2015	2016	2017	Total
GEORGIA					6	6
MICHIGAN		1	1	2		4
MASSACHUSETTS	3					3
OREGON	1	1			1	3
FLORIDA	1		1			2
ILLINOIS	2					2
MISSISSIPPI		1			1	2
DISTRICT OF COLUMBIA	1					1
ALABAMA					1	1
SOUTH CAROLINA		1				1
VERMONT				1		1
WEST VIRGINIA		1				1

Table 10-5 shows, by year since 2013, the cumulative number of blocks on the reclamation lists each month, the total number of those blocks that were new each month, as well as how many blocks were reclaimed by year. In 2017, we reclaimed 12 blocks, which is the highest total since 2014.

Table 10-5
Summary of Reclamation from 2013 through 2017

Year	Number of Cumulative Blocks on the List	Number of New Blocks on the List[14]	Number of Blocks for which Reclamation was Initiated[15]	Number of Blocks Reclaimed
2013	6,145	1,921	74	67
2014	5,407	1,577	235	21
2015	2,790	815	11	3
2016	2,840	1,081	44	4
2017	3,703	1,117	32	12

[14] We added new overdue Part 4s to the cumulative list in 2009.

[15] While a state may authorize the PA to initiate block reclamation, not all blocks in this category have actually been reclaimed. In some cases the reclamation process is halted if it is determined that the blocks are actually in service.

10.4. Summary of Pooled Areas since 2013

10.4.1 Aggregated Pooled Areas – 2013 through 2017

Table 10-6 shows the aggregated total of the number of pooling areas, those designated as mandatory or optional, as well as the number of distinct service providers participating in the pooled areas since 2013. In the past five years, the total number of rate centers in pooling has increased approximately 3.9%, from 15,819 to 16,447. The number of distinct service providers has increased approximately 8.2% from 1,020 at the end of 2013 to 1,104 at the end of 2017. These new service providers provide a consistent set of new PAS users to be educated and guided through the pooling processes every year.

Table 10-6
Aggregated Total Number of Service Providers and Pooling Areas
From 2013 through 2017

Year	Total Number of Distinct Pooling Service Providers	Pooled Areas
2013	1,020	15,819
2014	1,053	16,076
2015	1,073	16,248
2016	1,091	16,331
2017	1,104	16,447

10.4.2 Pooling versus Excluded Rate Centers – 2013 through 2017

The number of pooling rate centers continued to increase in 2017. This is primarily the result of carriers entering previously excluded rate centers. Of the 283 rate center designation changes we made in 2017, 49% were due to changes from excluded to optional status.

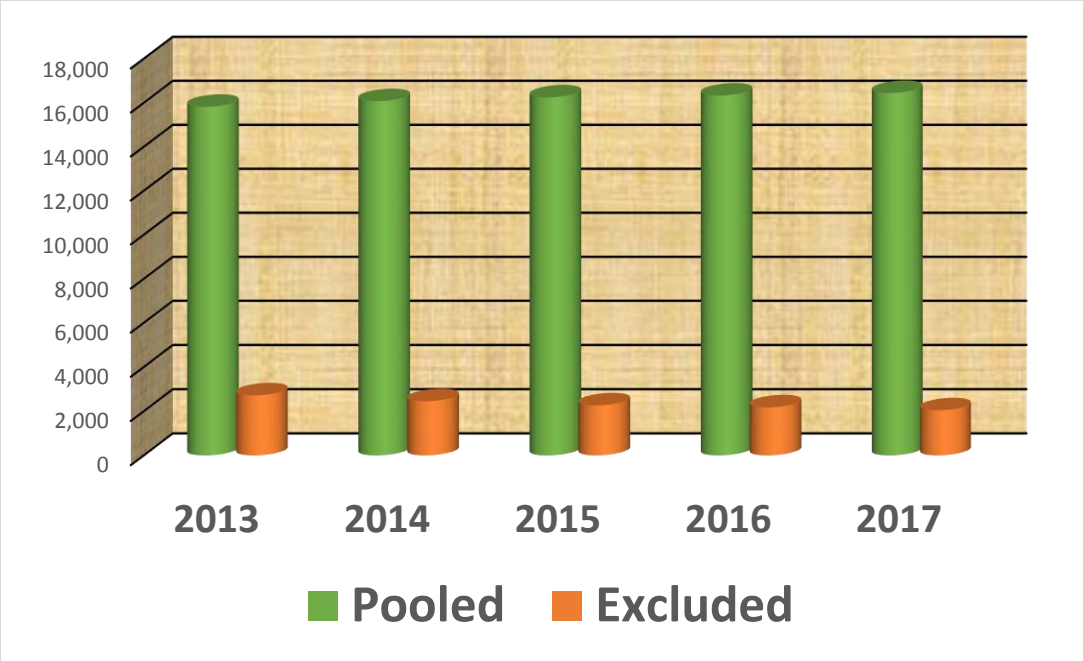

Figure 13 – Pooling versus Excluded Rate Centers – 2013 through 2017

10.4.3 Total Number of Distinct Pooling Service Providers – 2013 through 2017

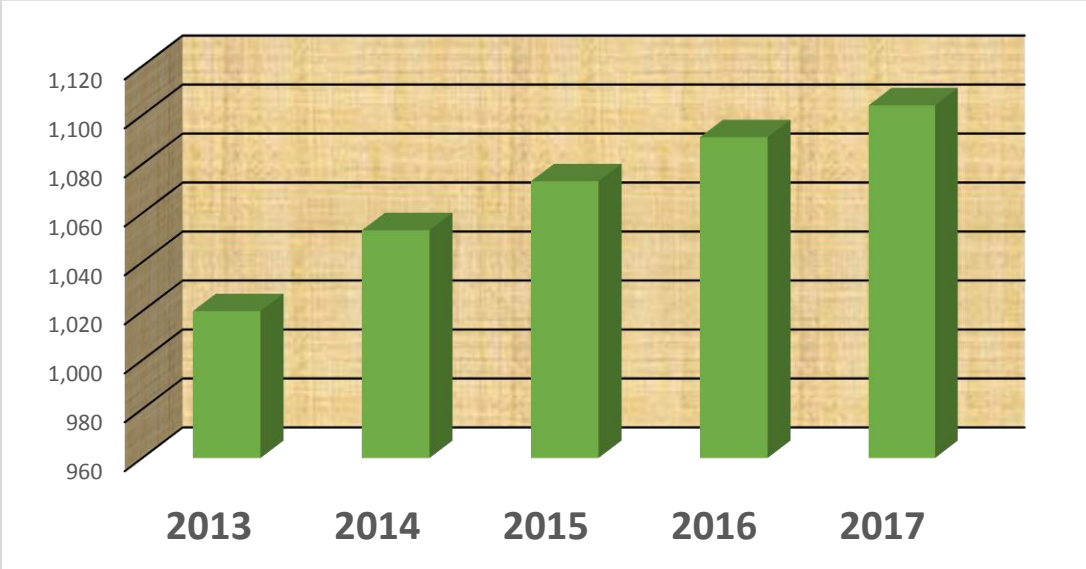

Figure 14 – Total Number of Distinct Pooling Service Providers

Table 10-7 depicts the trends in rate center status between 2013 through 2017.

Table 10-7
Pooling Rate Center Facts Comparison by Year - 2013 through 2017

	2013	2014	2015	2016	2017
Total Number of Distinct Rate Centers	18,538	18,528	18,515	18,507	18,490
Total Number of Distinct Rate Centers Available for Pooling	15,819	16,075	16,248	16,331	16,447
Percentage of Distinct Rate Centers that are Available for Pooling	85.30%	86.76%	87.75%	88.24%	88.95%
Total Number of Mandatory Distinct Rate Centers	8,549	8,815	8,876	8,898	8,983
Percentage of Distinct Rate Centers that are Mandatory	46.10%	47.58%	47.93%	48.08%	48.58%
Total Number of Distinct Mandatory Single-Service Provider Rate Centers	1,181	1,163	1,088	1,064	969
Percentage of Distinct Rate Centers that are Mandatory Single-Service Provider	6.40%	6.28%	5.87%	5.75%	5.24%
Total Number of Distinct Optional Rate Centers	6,089	6,098	6,284	6,369	6,495
Percentage of Distinct Rate Centers that are Optional	32.80%	32.91%	33.94%	34.41%	35.12%
Total Number of Distinct Rate Centers Excluded from Pooling	2,719	2,452	2,267	2,176	2,043
Percentage of Distinct Rate Centers that are Excluded from Pooling	14.70%	13,23%	12.24%	11.76%	11.04%
Total Number of Rate Center Designations Changed (see Section 2.4.2 for detail)	703	753	298	174	283