PA

National Pooling and Routing
NumberAdministrator

National Pooling and Routing Number Administrator

Annual Report 2018

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Background

In October of 2018, following a competitive bidding process, the Federal Communications Commission (FCC) awarded Somos, Inc. (Somos), the contract to perform the National Pooling Administration (PA) and Routing Number Administration (RNA) services, effective January 1, 2019. Pursuant to this award, the system and personnel transitioned from the incumbent to Somos. The PA is required to publish, within the first quarter of the year, an annual report covering the performance of the prior year. Somos did not serve as the PA during 2018, however, the same personnel who performed the PA services in 2018 are now employees of Somos. Somos therefore submits the following 2018 Annual Report in the interest of providing informational continuity to the FCC and the industry. By doing so Somos does not intend to speak for or represent the interests of the former incumbent.

Section 1- Description of the Pooling and P-ANI Administrator

1.1. History

Thousands-block number pooling was first implemented as a trial in the Illinois 847 Numbering Plan Area (NPA) 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 other pooling trials. Shortly thereafter, New York implemented a pooling trial in the 212 NPA.

There have been four (4) federal contracts to administer national pooling, all awarded after a competitive bidding process:

- Contract number CON01000016 was awarded on June 15, 2001 and expired on June 14, 2006. The FCC issued contract modifications to extend the pooling administrator's contract through August 14, 2007. During this contract the PA developed, tested and implemented the first Pooling Administration System (PAS) and website, www.nationalpooling.com. At the start of national pooling, in March 2002, there were 22 state pooling trials in 83 NPAs. The PA developed a national rollout schedule for implementation of pooling throughout the U.S. By letter dated September 8, 2006, the FCC directed the PA to act as the Interim Routing Number Administrator (IRNA) and to begin assigning Emergency Service Query Keys (ESQKs) under certain limited circumstances.

- Contract number CON07000005 was awarded on July 31, 2007, became effective on August 15, 2007 and expired on August 14, 2012. The FCC issued contract modifications to extend the contract through July 14, 2013. When the FCC awarded the PA contract in August 2007, it included the provision that the national PA would act as the Pseudo-Automatic Number Identification (p-ANI) Administrator (a/k/a Routing Number Administrator or RNA) once the FCC determined the permanent process. The PA developed, tested and implemented

the Routing Number Administration System (RNAS) for p-ANI administration and upgraded PAS.

- Contract number FCC13C0007 was awarded on July 12, 2013 and expired on July 14, 2017. The FCC issued contract modifications to extend the contract through December 31, 2018. During this contract the PA upgraded PAS and moved it and RNAS into the cloud utilizing Amazon Web Services (AWS).

- On October 10, 2018, the FCC awarded a one-year bridge contract for national pooling and p-ANI administration services to Somos, Inc. The transition of the PAS, RNAS and personnel from the former contractor to Somos was completed by January 1, 2019.

1.2 Neutrality

Section H.3.3, *Neutrality Requirements*, of the pooling contract requires that the PA be an independent, neutral third party. 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.

1.3 Description of the National Pooling Administrator (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:

- Manages thousands-blocks per industry defined guidelines, FCC rules, and per its contract.
- 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, the PA maintains accurate rate center designations.

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

1.4 Description of the Routing Number Administrator (RNA)

As the RNA, the PA is 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, which was added as part of the RNA responsibilities on September 24, 2012.

The RNA performs the day-to-day p-ANI assignment and administrative activities with a long-term focus, which includes maintaining a system to support all day-to-day and long-term p-ANI functions.

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 at, https://www.nationalpani.com under Documents.

Section 2 - 2018 Pooling and P-ANI Administrator Highlights and Significant Milestones

The following are the Pooling Administrator (PA) and Routing Number/P-ANI Administrator (RNA/P-ANI) highlights and significant milestones for 2018:

★ **Pooling Contract:**

- The pooling contract expired on January 14, 2018. Starting in January there were a total of four contract extensions, which ultimately extended the pooling administrator's contract with Neustar through December 31, 2018.
- On October 10, 2018, the FCC awarded a one-year bridge contract for national pooling and p-ANI administration services to Somos, Inc. The transition of the PAS, RNAS and personnel from the former contractor to Somos was completed by January 1, 2018.

★ **Pooling Administrator (PA) Highlights for 2018:**

- The PA staff processed:
  - 115,319 Part 3s.
    - 88,042 approvals.
    - 21,308 suspensions.
    - 1,030 withdrawals.
    - 4,939 block or code request denials.
      - 304 were Red Light Rule denials.
    - 100% of those applications were processed within 7 calendar days.
  - 53,764 requests for new resources (containing both multiple block and code requests).
    - Assigned 46,622 blocks.
    - Opened 2,797 NXX codes.
  - 27,569 change requests.
  - 14,803 disconnect requests.
    - 13,693 actual block disconnects.
- The PA staff reclaimed 3 blocks as authorized.
- The PA staff answered and responded to 100% of the 1,727 received calls within 1 business day.
- The Help Desk handled 674 calls.

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

- PAS was available for use 100% of the available scheduled uptime, which exceeds the contract performance metric of 99.9%.
- PAS had no attributable unscheduled down time.
- The PA conducted maintenance on PAS nine times and used one hour 14 minutes of the FCC-approved down time in conjunction with the maintenance activities.
- The PA successfully transitioned the PAS interface to the iconectiv® NPAC.

- The PA submitted three change order proposals.
- The PA opened and closed six trouble tickets.
- The PAS was successfully transitioned to Somos from the former contractor between December 13 through December 15. The PAS was unavailable to customers for 41 hours 19 minutes of FCC-approved down time.

★ **Reporting:**

- The PA produced a total of 506 reports for the FCC, states, the North American Numbering Council (NANC), North American Numbering Plan Administrator (NANPA), service providers and others.
- The PA produced all 49 requested by-request [ad hoc] reports in less than one business day, well within the allowable three business days.
- The PA submitted all 106 required Contract Data Requirements List (CDRL) reports on time and posted them to the website.
- The PA submitted all 52 additional contract-required reports on time and posted them to the website.

★ **Industry Support:**

- The PA participated in industry meetings for INC, CIGRR, ESIF, LNPAWG and NANC WGs either in-person or by conference call.
- The PA submitted 8 new issues and 12 new contributions at the Industry Numbering Committee (INC).
- The PA provided 26 pooling status reports to the NANPA for its meetings.
- The PA attended 12 NANPA meetings relating to NPA relief and jeopardy, providing an up-to-date pooling status for the affected NPAs.
- The PA responded to all 1,727 phone calls within one business day.
- The PA made 204 changes to rate center information, of which 81% changed the pooling status designation from Excluded to Optional.
- The PA staff met monthly with the Numbering Administration Oversight Working Group (NAOWG) Contract Oversight Subcommittee (COSC), providing updates on various PA activities and providing responses to questions. The PA also participated in the annual performance review.
- The PA continued sending Tips-of-the-Quarter.
- The PA had no formal complaints.

★ **Training:**

- The PA facilitated four state regulatory commission educational sessions on pooling issues.
- The pooling training videos were accessed or downloaded 1,076 times.

★ **Distinctive Projects:**

- The PA completed an MSA-designations review project.
- The PA continued Seeking Donations.

- The PA continued seeking resolution for Abandoned Codes/Blocks.
- The PA completed an update to the Safety Valve Matrix.

★ **P-ANI Administrator Highlights for 2018:**

- 12,878 applications processed (Part 3s issued)
- 100% of those applications processed on time
- 3,312 new p-ANI range assignments made
- 7,633 modifications made to existing p-ANI ranges
- 1,891 p-ANI range returns processed
- 5 requests to cancel p-ANI returns processed
- 8 requests denied
- 29 requests withdrawn
- 0 requests suspended

★ **Other P-ANI Activities in 2018:**

- Worked with carriers to resolve data discrepancies.
- Processed carriers' annual reports and semi-annual forecasts.
- Attended Emergency Services Interconnection Forum (ESIF) meetings.
- 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.
- There were 48 views for the nine instructional videos.

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

- RNAS was available for use 100% of the time, which exceeded the contract performance metric of 99.9%.
- RNAS had no unscheduled down time.
- The RNA implemented RNAS Change Order #5 relating to submitting mass new p-ANI requests via Excel.
- The RNA conducted maintenance on RNAS five times with no downtime.
- RNAS had no trouble tickets opened and one closed that was opened in the previous year.
- The RNAS was successful transitioned from the former contractor to Somos from December 6 to 7. The RNAS was taken off line for 18 hours 15 minutes of FCC-approved scheduled down time.

Following is a synopsis of the PA's major accomplishments during the 2018 reporting period. Details for these activities are found throughout the report.

2.1 Pooling Administrator Contract

The FCC's contract FCC13C0007 for PA services awarded to Neustar, expired on January 14, 2018. The FCC issued four contract extensions which ultimately extended the contract with Neustar to December 31, 2018.

On October 10, 2018, the FCC awarded Somos, Inc., the contract to serve as the PA (including the RNA). Transition meetings between Neustar and Somos began almost immediately to ensure a seamless transition. RNAS was moved in a two-day period from December 6-7 and PAS was moved in a three-day period from December 13-15. Both moves were successfully completed ahead of schedule. The transition to Somos of all PA and RNA services, including personnel, was completed on January 1, 2019.

2.2 Pooling Administrator Services

This section describes PA activity in 2018, 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 2014.

2.2.1 Pooling Administrator Productivity for 2018

In 2018, the PA continued its exceptional level of performance. Table 2-1 identifies areas of activity:

Table 2-1
PA Productivity at a Glance

ACTIVITIES	2018 TOTALS
Applications processed (Part 3s):	115,319
Applications not processed in 7 calendar days:	0
Blocks assigned:	46,622
Change requests to existing blocks or codes:	27,569
Disconnects processed (Part 3s):	13,693
Withdrawals:	1,030
Block or code requests denied:	4,939
Central office codes opened:	2,797
Red Light Rule denials:	304
Total blocks reclaimed:	3

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	88,042
Denials	4,939
Suspensions	21,308
Withdrawals	1,030
TOTAL	115,319

Table 2-3 and Figure 1 contain the total number of applications processed by activity type.

Table 2-3
2018 Applications Processed by Type

	Approved	Denied	Suspended	Withdrawn	Total
Block Modifications	24,636	176	-	138	24,950
Block Disconnects	13,542	483	14,068	48	28,141
Block Cancel Disconnect	10	5	-	-	15
Individual Blocks	39,051	2,861	-	427	42,339
Block Reservations	46	8	-	1	55
Process/Cancel Block Reservations	26	-	-	-	26
Code Modifications	2,930	144	2,952	111	6,137
Code Disconnects	151	566	1,366	13	2,096
LRN Blocks	606	319	519	48	1,492
Dedicated Customer Blocks	540	49	55	2	646
Pool Replenishment Blocks	6,399	300	2,348	214	9,261
ISP Disconnects	15	9	-	1	25
ISP Modifications	3	19	-	8	30
ISP Blocks	87	-	-	19	106
TOTALS	**88,042**	**4,939**	**21,308**	**1,030**	**115,319**

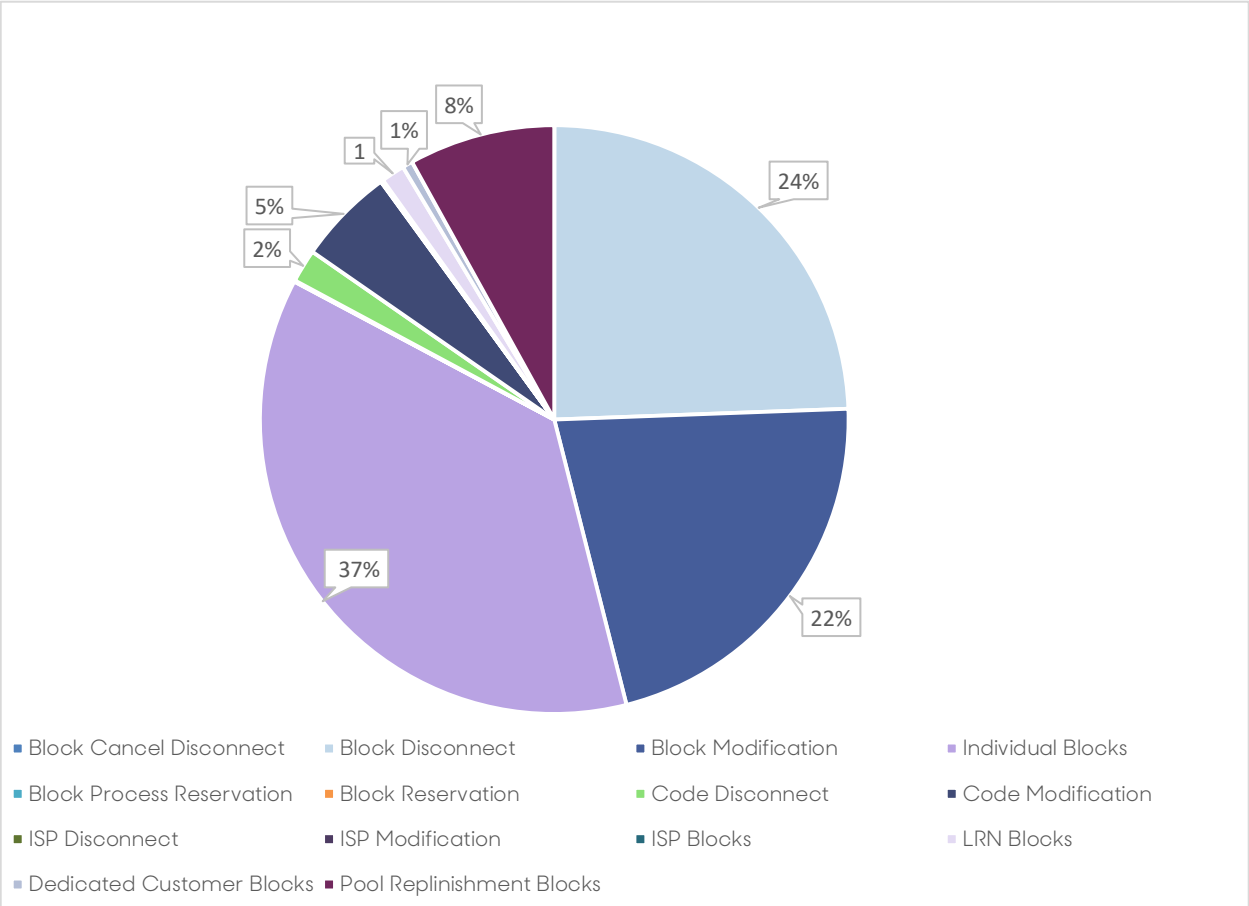

Figure 1: 2018 Pooling Applications by Type

The PA also issued 13,753 Part 5s for block disconnects, reclamations, and exchanges during 2018, of which 13,542 were actual block disconnects.

The PA processed 100% of the 115,319 applications (Part 3s) within seven calendar days, which exceeds the performance metric of 99%.

There were 605,561 assigned blocks in PAS at the end of 2018, an increase of 38,970 from 2017.

Figure 2 below depicts the monthly block assignments made by the PA during each month in 2018.

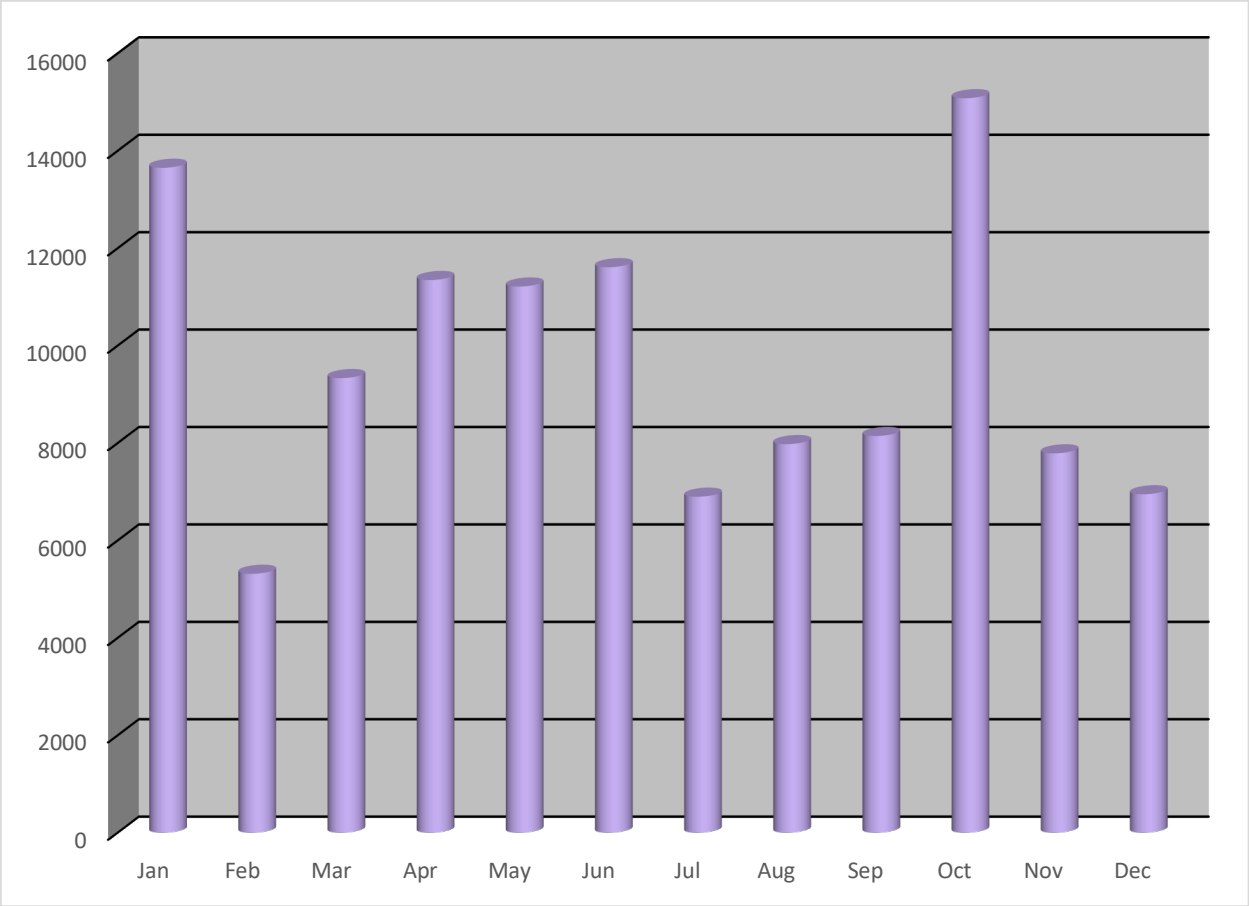

Figure 2: Blocks Assigned by the PA in Each Month in 2018

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 result 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.

Figure 3 below provides a complete overview of all applications processed in PAS for 2018, including approvals, denials, withdrawals, and suspended applications.

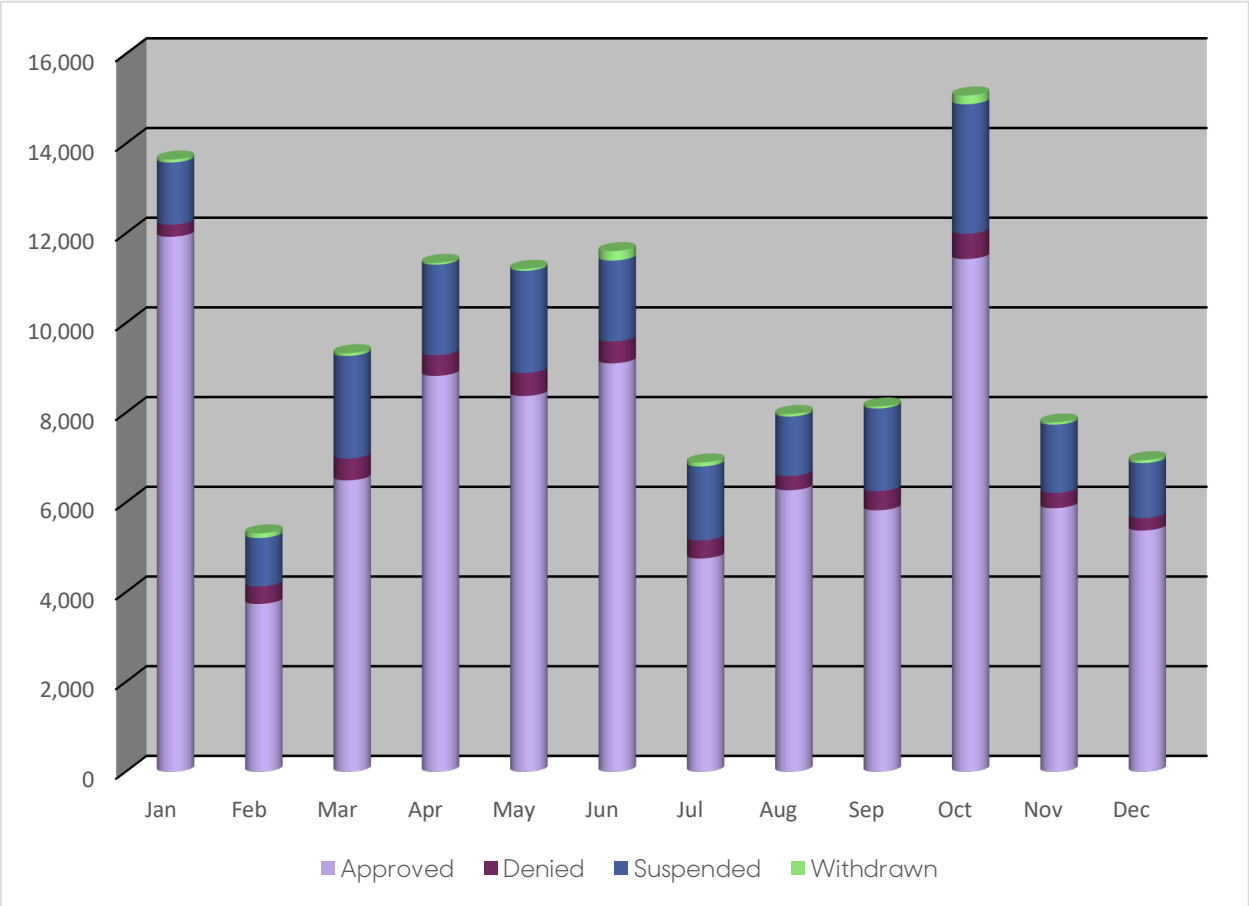

Figure 3: Overview of All 2018 Applications Processed by State

Tables 2-4 and 2-5 list the ten states and Numbering Plan Areas (NPAs) for which the highest number of applications (Part 3s) occurred in 2018:

Table 2-4
Ten States with Highest Number of Applications (Part 3s)

State	Total Part 3s
PA	10,078
CA	10,033
NY	8,790
TX	6,820
FL	4,731
VA	4,026
IL	3,501
NC	3,463
MD	3,075
GA	2,923

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

NPA	State	Total Part 3s
814	PA	1,713
570	PA	1,426
267	PA	1,078
484	PA	1,077
540	VA	1,069
724	PA	1,069
717	PA	1,028
939	PR	1,025
315	NY	1,021
970	CO	1,005

Pool replenishment allows service providers to open a code to add blocks to a pool when a pooling rate center inventory will either be equal to or falls below the aggregated six-month service provider forecasts. The PA manages the process by determining when a rate center inventory is not adequate to meet forecasted demand. PAS alerts a service provider about the need to replenish the pool and permits several options for the service provider. Because it is not authorized to obtain resources directly, the PA has no authority to actually replenish the inventory pools itself and therefore must rely on the service providers that can meet both the MTE (Months-to-Exhaust) and utilization requirements

to maintain adequate inventories by opening an NXX code, keeping the blocks they need and then returning the remaining blocks from that NXX code to the pool.

Table 2-6 below provides an overview of rate center inventories and pool replenishment.

Table 2-6
2018 Pool Replenishment Overview

Average number of rate centers per month that had less than a six-month inventory	920
Percentage of total number of rate centers per month that had less than a six-month inventory	5%
Average number of rate centers per month that had no blocks available with forecast	295
Number of CO codes opened for pool replenishment	2,262

Table 2-7 shows the number of NXX codes opened by the PA in 2018 and for what purpose. Pool replenishment accounts for 81% of the NXXs opened.

Table 2-7
NXXs Opened by Purpose

PURPOSE	TOTAL	PERCENT OF TOTAL
LRN	481	17%
Dedicated Customer	54	2%
Pool Replenishment	2,262	81%
TOTAL	2,797	100%

Tables 2-8 and 2-9 show the ten states and NPAs which had the most pool replenishment activity in 2018.

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

State	Codes Opened
TX	197
CA	194
FL	176
NY	157
VA	118
PA	94
GA	77
IA	75
MD	72
NJ	65

Table 2-9
Ten NPAs with the Most Pool Replenishment

NPA	State	Codes Opened
470	GA	35
540	VA	31
667	MD	31
850	FL	30
681	WV	29
929	NY	27
469	TX	25
804	VA	25
205	AL	24
281	TX	24

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 eligibility for requested blocks and pooled codes,
- 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.

2.2.2. Interconnected VoIP

On June 22, 2015, the 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. The PA has provided 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-day notice. The first numbering resources were assigned to an iVoIP entity in May 2016.

By the end of 2018, a total of 52 applications had been submitted to the FCC for direct access authorization, with a total of 36 approved.

The PA continue to support and educate iVoIP providers on application processing requirements, proper supporting documentation, and the information needed in 30-day notification letters. The PA 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, the PA has a "New Service Provider Checklist" to assist with process questions.

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

To save time and prevent the need to resubmit documentation or applications, the PA worked 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. The PA spent a great deal of time with individual iVoIP provider's personnel going over what documentation they need and how to submit applications through PAS.

In addition, the PA continued sending regular updates to the state commissions whenever new applications or filings were made and when applications were submitted in their states. The PA continue to work with the FCC on some more complex regulatory issues surrounding whether the iVoIP entities must follow individual state regulations for new carriers. The PA also continued to work through INC to update the applicable guidelines.

In 2018, there were 4,330 applications (Part 3s) processed for iVoIP providers, approximately 3% of the total number of Parts 3s processed. Table 2-10 details the total number of applications processed for iVoIP providers in 2018:

Table 2-10
2018 iVoIP Applications (Part 3s) Processed

Approvals	3,080
Denials	517
Suspensions	663
Withdrawals	70
TOTAL	**4,330**

2.2.3 Reclamation in 2018

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

The PA sent 287 monthly reports to regulatory staff to address a total of 2,403 blocks on the overdue Part 4 reports in 2018. Of those, 1,061 blocks were new in 2018.

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 2018, regulators authorized the PA to initiate reclamation on 34 blocks. Of those, 3 thousands-blocks were actually reclaimed; two in Georgia one in Washington.

[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.

Following is a table of all reclamation activity in 2018:

Table 2-11
Reclamation Activity in 2018

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	222	33	5	0
February	289	149	0	0
March	183	85	2	0
April	346	252	0	0
May	207	87	101	1
June	144	34	1	0
July	194	69	1	0
August	130	36	2	0
September	199	109	0	0
October	175	80	0	2
November	156	62	1	0
December	158	45	2	0
TOTAL	**2,403**	**1,061**	**115**	**3**

2.2.4 Pooling Administrator 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 2018, the CSR handled approximately 674 calls from customers. For more details on Pooling Administrator Customer Support / Help Desk see Section 8.6.1.

2.3 Pooling Administration System (PAS)

2.3.1 PAS Performance

PAS had no attributable unscheduled down time and again exceeded the contract requirement of 99.9% availability. The PA conducted builds and maintenance on PAS nine times and had a total of one hour 14 minutes of scheduled down time associated with

[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.

these maintenance activities. The PA also completed annual disaster recovery testing. The PA opened and closed six PAS Trouble Tickets in 2018.

In addition, the PAS was successfully transferred from Neustar to Somos from December 13 through December 15. In conjunction with the move, there was a moratorium on all PAS activity beginning on December 13 and ending with the cutover on December 15. The FCC authorized PAS to be unavailable through Monday, December 17 but the transition was completed nearly two days ahead of schedule. After the transition, the PAS processes, user names and passwords, website address and Help Desk number remained the same.

For 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, the PA submits 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] The NAOWG COSC reviews PA change order proposals and provides recommendations to the FCC.

The PA submitted three change orders in 2018. Further details about the PAS change orders can be found in Section 6.1.3.2.

2.3.3 PAS Training Videos

The PA training videos were first made available on the website for PAS on September 29, 2010 and have remained popular in 2018, with a record number of views.

In 2018, there were 1,076 total views of the 14 PAS training videos. While the PA did not add any new videos in 2018, the PA continued to see robust viewing of the existing videos. The most popular video was the "Release of Enhancements to the PAS Training Session for Service Provider and Service Provider Consultants" which accounted for 30% 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.

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

Table 2-12
2018 PAS Training Video Views

	Training Video	Number of Times Viewed
1	New to Pooling Quick Start	145
2	Mass Modifications	11
3	Change Order 20	6
4	How to Complete the MTE Worksheet	164
5	PAS Effective Date Scenarios for Block Requests and Donations	41
6	PAS Password Reset	22
7	Change Orders 9 and 10	13
8	Change Order 11	14
9	Redesigned Nationalpooling.com Website Training video	28
10	Overview of PAS and the Pooling Website for Service Provider and Service Provider Consultant Users	Part 1 – 99 Part 2- 56 Part 3- 16 Total - 171
11	Overview of PAS and the Pooling Website for Regulatory Users	Part 1 – 61 Part 2 – 16 Total - 77
12	Release of Enhancements to the PAS Training Session for Service Provider and Service Provider Consultant Users	319
13	Release of Enhancements to the PAS Training Session for Regulatory Users	65
14	Chrome Browser Release How it Affects PAS Drop Down Menus (temporary video)	0
	TOTAL VIEWS	**1,076**

2.4 Data Quality and Pooling Implementation Management

The PA 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 PA also managed quarterly neutrality audits. In 2018, the PA attended 12 NANPA meetings, and provided 26 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. For further detail on the total number of distinct rate centers by status designation from 2014 through 2018 see Section 10.5.

2.4.2 Rate Center Information Changes

The PA 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 PA 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. In 2018, the PA made 204 rate center information changes. Of those, 166 were rate center status designation changes, of which 81% were from Excluded (X) to Optional (O).

Table 2-13 shows the type of information change and how many rate centers were changed during each month in 2018.

Table 2-13
Summary of Rate Center File Changes for 2018

RATE CENTER CHANGES													
REASON	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
Changes in Status:													
M* to M			2	1	1		2			4			10
M* to M	6	7	1		2	2	1			1	5	3	28
X to O	7		3	12	6	66	44	3	5	12	8		166
New Rate Centers													0
Rate Center Name Change													0
MSA Changes													0
TOTALS	**13**	**7**	**6**	**13**	**9**	**68**	**47**	**3**	**5**	**17**	**13**	**3**	**204**

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 individual 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 2018, the PA aggregated the data provided by the service providers at the rate center level for all NPAs in pooling. The PA used this data to provide a rate center level PA 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 9.

Table 2-14 contains the PA NRUF/forecast results for both semi-annual reporting periods in 2018.

Table 2-14
NRUF/Forecast Results for 2018

Date	NPAs	Jurisdictions	Blocks Forecasted	Blocks Available	Codes Forecasted
February	316	52	58,610	140,735	4,680
August	319	52	35,941	139,863	2,761

2.5 Regulatory and Compliance

2.5.1 Regulatory Support

The PA supports state regulators throughout the year by providing education on pooling processes and website navigation. The PA 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. The PA 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.

In 2018, the PA participated in regulatory update conference calls: on February 22, April 12, May 30, August 9, and December 13. Topics included updates on pooling and P-ANI administrator processes and activity, iVoIP provider processes, updates to PAS and RNAS, relevant INC issues and contract transition updates.

The PA also conducted four educational sessions about pooling processes for state regulatory personnel in 2018. The 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, the PA reviewed various pooling procedures such as reclamation, forecasting, and applications processing, iVoIP requirements and activity, as well as information about reports available through the website.

2.5.2 Debt Collection Improvement Act of 1996, FCC 04-72, MD Docket 02-339, adopted March 25, 2004 (Red Light Rule)

The "Red Light Rule" 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 304 denials as a result of the Red Light Rule in 2018.

2.5.3 Reporting Compliance

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

2.5.3.1 Contract Data Requirements List (CDRL) – Recurring Reports

The following CDRL reports are submitted annually, semi-annually, quarterly, or monthly. Table 2-15 contains the CDRL recurring reports that were submitted by the PA during the 2018 calendar year according to the established deadlines. In 2018, the PA submitted 106 CDRL reports, which are all available on the PA website[4].

Table 2-15
Recurring CDRL Reports Submitted in 2018

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	2
Rate Area Inventory Pool Status	2
Annual	1
By Request *(Ad Hoc)*	49
TOTAL	**106**

2.5.3.2 Other Required Reports

Table 2-16 lists the 49 other reports required by the contract that the PA submitted in 2018.

[4] 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.

Table 2-16
Other Required Reports Submitted in 2018

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

2.6 Special Projects in 2018

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 the PA knows 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 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, the PA monitors the Census Bureau website to determine when new census estimates are available. The PA reviews the population estimates when new information is found and makes all of the appropriate updates to the ranking of the top-100 MSAs.

In May, upon determining that the 2017 census estimates were available, the PA reviewed the population estimates and made the appropriate updates to determine how it affected the MSA list. Based on this data the PA made two changes to the top 100; the Modesto, CA MSA was moved into the top 100, and the Youngstown-Warren-Boardman, OH-PA MSA dropped to number 103. These changes had no effect on mandatory pooling requirements. Additionally, there were many rearrangements in placement on the list due to adjustments in populations.

2.6.2 Seeking Voluntary Disconnects (formerly Donations)

In a proactive effort to prevent the unnecessary opening of NXX codes, the PA developed a process beginning in late 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, the PA seeks 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 2018, the PA attempted to secure voluntary block disconnects (formerly donations) for 135 rate centers being changed from Excluded to Optional. The PA was able to obtain disconnects (formerly donations) for 26 of those rate centers, thereby potentially saving the opening of 26 NXX codes.

At times a carrier will also contact the PA to request that it 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 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 2018, the PA was asked to request voluntary block disconnects (formerly donations) in 39 optional pooling rate centers that did not have any available blocks. The PA requested disconnects (formerly donations) and received disconnects for 14 of the rate centers. This process saved 14 NXX codes from being opened.

2.6.3 Abandoned Codes/Blocks:

When the PA is made aware that a company has abandoned pooled codes and blocks, so the PA works with state regulators to obtain permission to reclaim the numbering resources as abandoned. The PA 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, the PA seeks new code holders so that customers are not put out of service.

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

- 14 companies in nine states abandoned pooled codes and/or blocks.
- The PA sent 70 emails seeking new code or block holders.
- 32 pooled codes were transferred to new code holders.
- 64 pooled blocks were transferred to new block holders.
- 132 blocks were disconnected and put back into the available pools.

2.7 Routing Number Administrator (RNA)

2.7.1 RNA Productivity for 2018:

The RNA processes not only p-ANI 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. The RNA processed annual report files for 82 unique NENA ID/OCN combinations and 2 forecast files.

Table 2-17 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.

Table 2-17
Total Number of p-ANIs by Activity Type

	REQUESTED	ASSIGNED	RETURNED	MODIFIED
Jan	8,310	9,095	578	0
Feb	6,740	7,004	894	5
Mar	1,136	1,169	10,618	32,375
Apr	4,985	4,635	766	58,445
May	2,957	3,146	7,374	0
Jun	2,516	2,686	422	0
Jul	4,146	4,459	3,964	0
Aug	3,852	1,979	4,549	15
Sep	8,385	2,351	1,428	10
Oct	1,821	1,745	676	0
Nov	1,287	1,297	12,320	454
Dec	2,105	1,693	270	1
TOTAL	**48,240**	**41,259**	**43,879**	**91,304**

Table 2-18
Applications Processed by Request Type

	Approved	Denied	Suspended	Withdrawn	Total
Cancel p-ANI Return Request	5	0	0	0	5
P-ANI Modification Request	7,633	1	0	0	7,634
New p-ANI Request	3,312	7	0	29	3,348
P-ANI Return Request	1,891	0	0	0	1,891
Total	**12,841**	**8**	**0**	**29**	**12,878**

The following table is a summary of p-ANI inventory as of December 31, 2018:

Table 2-19
P-ANI Inventory as of December 31, 2018

STATUS	TOTAL p-ANIs	211	511
Assigned	869,647	413,628	456,019
Aging	447	289	158
Available	5,549,531	2,789,130	2,760,401
Unavailable	20,375	16,953	3,422
TOTALS	**6,440,000**	**3,220,000**	**3,220,000**

2.7.2 Other 2018 RNA Activities

In addition to processing requests for p-ANI ranges, the RNA performed many other functions during 2018.

2.7.3.1 Annual Report

P-ANI Assignees are required to report to the RNA on all of their assigned p-ANI ranges via the P-ANI Annual Report (Appendix 2) on an annual basis. For 2018, there were 82 unique NENA ID and OCN combinations that filed an Annual Report. During this process, the RNA was able to identify p-ANI ranges that were never reported during the initial reports filing and show those p-ANI ranges as assigned. The RNA 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 2018, the RNA was notified of 210 p-ANI ranges that had been assigned by the RNA but appeared to be already in use by another carrier. The RNA 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. The RNA also advised the carrier that reported it 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 the RNA 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, the RNA sends a courtesy email. The RNA also assists carriers who are having

difficulties locating the correct documentation to find the documents, to help alleviate any delays in obtaining these critical resources. In 2018, the RNA sent courtesy emails for 168 requests. In addition, the RNA provided documents for 26 requests.

2.7.3.4 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 through December 31, 2018 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, 1-4, and 1-5 addresses national p-ANI utilization, p-ANI utilization by NPA, location and exhaust year.

The *P-ANI Activity and Projected Exhaust Report* can be found on the website www.nationalpani.com under REPORTS. The RNA also 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 2-20 below contains the first five NPAs that are projected to exhaust 211/511/p-ANIs as of December 31, 2018.

Table 2-20
p-ANIs Top 5 NPAs as of December 31, 2018
Projected Exhaust of 211/511

NPA	State	Total p-ANIs	Forecasted P-ANIs	Exhaust Date
315	NY	7595	375	2049
281	TX	12210	198	2055
518	NY	5888	300	2063
508	MA	8348	230	2067
212	NY	5110	254	2075

2.7.4 Routing Number Administration System (RNAS)

RNAS is the first national p-ANI database and is vitally important to the users 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 2018, which means the RNA once again notably exceeded the contract requirement of 99.9% availability. The RNA closed one trouble ticket for RNAS in 2018. For more details on trouble tickets for RNAS see Section 6.2.4.

The RNA conducted maintenance on RNAS five times; on February 15, April 13, May 30, September 12 and October 18. For these maintenance activities, customers experienced no downtime.

In addition, the RNAS was successfully transitioned from Neustar to Somos on December 6 to December 7. In conjunction with the move, there was a moratorium on all RNAS activity beginning on December 6 and ending with the cutover. The PA obtained authorization for RNAS to be unavailable through Monday, December 10 at 8AM Eastern Time but completed the transition nearly three days ahead of schedule, on December 7. After the transition, the RNAS processes, user names and passwords, website address and Help Desk number remained the same.

As with PAS, the RNA completed disaster recovery testing for RNAS on November 2 with no down time. For more detailed information on the RNAS performance, see Section 6.2.

2.7.5 RNA Customer Support /Help Desk

The RNA is also the P-ANI Help 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. In 2018, the P-ANI Help Desk processed 30 new user registration requests, of which 26 were approved and 4 were denied; 14 profile update

requests, of which 11 were approved and 3 were denied, and handled approximately 65 phone calls. For further details on Routing Number Administrator (RNA) Customer Support /Help Desk, see Section 8.6.2.

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 48 views of RNAS training videos in 2018. The most popular video is "Create/Modify P-ANI Forecasts," which accounted for 21% of the views.

Table 2-21 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 2-21
2017 RNAS Training Videos

	Training Video	Number of Times Viewed
1	Create/Modify P-ANI Forecasts	10
2	New P-ANI Requests	7
3	P-ANI Modification Requests	3
4	P-ANI Return Requests	3
5	FCC License Search	6
6	Helpful Tools in RNAS	8
7	Types of Reports in RNAS	4
8	Filing P-ANI Annual Report in RNAS	3
9	Filing P-ANI Annual Report in Excel	4
	TOTAL VIEWS	**48**

2.8 PA and RNA Continued Focus on Outstanding Customer Satisfaction

The PA and RNA are constantly focused on customer satisfaction and strive to respond affirmatively to customers' questions and suggestions for improvement, while meeting or exceeding contract requirements. A strong indication of the PA and RNA firm commitment to customer satisfaction is that the PA and RNA did not receive any formal complaints in 2018. Others include:

- Processing 100% of the Applications (Part 3s) on Time
- Issuing Pooling and P-ANI Tips-of-the-Quarter
- PAS and RNAS Exceptional Availability
- Exceeding Reporting Requirements for Responding to Requests for Ad Hoc Reports

- Providing education through one-on-one support or website videos.
- Resolving p-ANI Range Discrepancies

The following survey comments exemplify customer's satisfaction with the PA and RNA performance:

"PA employees are always professional and courteous"

"The RNA representatives were very knowledgeable and helpful each time we had questions or needed assistance."

"The pooling team is exceptional. The PA Team is ALWAYS there to assist and is very helpful regarding regulations and support. The best team. The entire PA Team has exceptional knowledge of the Industry. The support and guidance they give each and every day cannot be measured. I have never had a negative experience in 20 years. They answer the phone and emails as we are the only Carrier calling with questions. Each and Support member of the PA will go above and beyond to support the Carriers with knowledge of Guidelines, process and next steps. They are invaluable."

"The RNAs have been extremely responsive and easy to work with often going above and beyond expectations."

"Staff is friendly, helpful and know their stuff."

Section 3 – Identification of Existing and Potential Pooling Areas

In this section, the PA discusses the number of existing pooling areas. As of December 31, 2018, there are 16,592 distinct pooling rate centers (i.e., pooling areas), which constitute 89.8% of the 18,845-total number of distinct rate centers. While pooling is available in all states, the District of Columbia and Puerto Rico, not all states have mandatory pooling, either by FCC rule or delegated authority. North Dakota, South Dakota and Wyoming have no mandatory pooling rate centers.

While the PA cannot speculate about "potential" pooling areas, there are currently 1,893 rate centers in which no carrier is pooling and 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 and Potential Pooling Areas

Table 3-1 below identifies the 16,592 distinct pooling rate centers (i.e., pooling areas), and their status designations, by state, as of December 31, 2018. 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	77	128	2	9	27	299
AR	46		274	1		59	380
AZ	27		46	20		37	130
CA	439	83	178	15		24	739
CO	20	5	136	3		44	208
CT	74	15					89
DC	1						1
DE	8		22				30
FL	129	14	120			5	268
GA	76		234	3		46	359
HI	1		5				6
IA	66	68	455	21		201	811
ID	16	79		3	47		145
IL	236		637	16		95	984
IN	216	257	12	9	25	6	525
KS	74		350	19		131	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	223	107	286	6	6	6	634
MN	61		422	2		153	638
MO	138	433		20	130		721
MS	38	93	87	6	10	5	239
MT		153			107		260
NC	146	18	240	8		19	431
ND			126			173	299

State	Mandatory (M)	Mandatory State (M)	Optional	Mandatory Single SP(M*)	Mandatory State Single SP (M*)	Excluded	Total
NE	28	172	170	4	77		451
NH	32	92	25				149
NJ	187		21				208
NM	5		79	2		68	154
NV	23		48	2		23	96
NY	407	259	79		2		747
OH	379	163	162	4		31	739
OK	104	15	208	36		166	529
OR	36	103	76			40	255
PA	415	347	12		2		776
PR	47		36	1			84
RI	25						25
SC	107		121	5		7	240
SD			109			160	269
TN	121		184	6		29	340
TX	303	7	736	23		208	1277
UT	32		40	11	1	48	132
VA	121	182	66				369
VT		101	40				141
WA	54	149	1	3	16		223
WI	125	314	121	13	29		602
WV	7	156	59			6	228
WY			60			32	92
Grand Total	**5,149**	**3,857**	**6,645**	**268**	**673**	**1,893**	**18,485**

3.2 Summarized Information about Existing and "Potential" Pooling Areas

Table 3-2 below is a breakdown of the total number and percentage of rate centers that are available for pooling, as well as by pooling status designation.

Table 3-2
Summarized Information about Existing and "Potential" Pooling Areas

Total Number of Distinct Rate Centers Available for Pooling	16,592
Percentage of Distinct Rate Centers Available for Pooling	89.8%
Total Number of Mandatory Distinct Rate Centers	9,006
Percentage of Distinct Rate Centers that are Mandatory	48.7%
Total Number of Distinct Mandatory Single-Service Provider Rate Centers	941

Percentage of Distinct Rate Centers that are Mandatory Single-Service Provider	5.0%
Total Number of Distinct Optional Rate Centers	6,645
Percentage of Distinct Rate Centers that are Optional	35.9%
Total Number of Distinct Rate Centers Excluded from Pooling	1,893
Percentage of Distinct Rate Centers that are Excluded from Pooling	10.2%
Total Number of Distinct Rate Centers	18,485

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

Table 4-1 contains the aggregated total by pool of the service providers participating in the pooled areas in 2018. There are 1,116 distinct service providers* participating in 16,592 distinct pooled rate centers (RCs) in 239 NPA and NPA complexes covering 52 jurisdictions -- 50 states, the District of Columbia, and Puerto Rico.

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

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

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
201/551	55	22
202	49	1
203/475	36	32
205	45	66
206	46	5
207	55	240
208/986	55	145
209	44	56
210/726	42	1
212/332/646/917	64	1
213/323	52	15
214/469/972	70	43
215/267/445	58	36
216	39	4
217	42	230
218	47	135
219	35	45
220/740	48	187
223/717	54	107
224/847	42	41
225	36	34
228	30	11
229	33	75
231	39	94
234/330	47	116
239	32	11
240/301	66	63

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
248/947	42	20
251	42	35
252	37	89
253	35	10
254	43	105
256/938	43	91
260	30	76
262	34	60
269	45	76
270/364	54	170
272/570	58	180
276	40	78
279/916	47	16
281/346/713/832	63	45
302	36	30
303/720	50	13
304/681	44	222
305/786	58	5
307	28	60
308	30	170
309	42	148
310/424	47	16
312/872	44	1
313	38	6
314	34	7
315/680	53	149
316	30	14

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
317/463	41	36
318	34	117
319	42	103
320	50	139
321	33	5
321/407	48	17
325	32	61
331/630	40	25
334	45	80
336/743	60	85
337	34	70
339/781	35	40
347/718/917/929	55	11
347/718/929	41	2
351/978	38	58
352	32	47
360/564	60	75
361	36	68
380/614	40	16
385/801	34	20
386	37	30
401	30	25
402/531	62	281
404/470/678	54	1
405	40	83
406	47	260
408/669	51	11
409	40	48
410/443/667	61	102
412/878	46	23
413	32	61
414	30	4
415/628	53	14
417	47	155
419/567	50	175
423	52	70
425	38	14
430/903	57	166
432	26	44
434	34	66
435	33	64

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
440	42	62
442/760	55	83
458/541	47	153
470/678/770	60	41
478	40	39
479	29	62
480	32	1
484/610	56	90
501	30	59
502	38	35
503/971	57	62
504	36	5
505	39	25
507	48	185
508/774	39	85
509	56	119
510	42	13
512/737	53	35
513	39	25
515	44	73
516	50	11
517	52	77
518/838	61	135
520	36	27
530	54	116
534/715	79	253
539/918	51	142
540	54	117
559	41	57
561	48	7
562	44	9
563	38	85
571/703	54	19
573	48	216
574	38	53
575	33	61
580	37	138
585	42	77
586	35	11
601/769	46	101
602	31	1

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
603	42	149
605	34	109
606	38	99
607	45	105
608	63	159
609/640	47	39
612	43	1
615/629	46	49
616	39	36
617/857	50	20
618	46	212
619/858	46	19
620	59	200
623	28	1
626	44	10
631/934	45	53
636	35	46
641	40	170
650	41	15
651	45	12
657/714	45	13
660	40	224
661	51	32
662	44	122
682/817	55	24
701	42	126
702/725	41	16
704/980	47	55
706/762	65	105
707	48	75
708	37	31
712	53	179
716	53	79
719	42	57
724/878	49	162
727	41	5
731	38	63
732/848	49	36
734	48	33
747/818	41	16
754/954	45	5

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
757	32	34
763	50	10
765	51	138
772	38	8
773/872	42	10
775	38	57
779/815	56	191
785	50	195
787/939	15	84
802	31	141
803	57	79
804	39	55
805/820	57	40
806	33	112
808	19	6
810	36	47
812/930	60	171
813	51	8
814	52	178
816	47	73
828	40	73
830	45	80
831	40	24
843/854	48	90
845	65	96
850	41	63
856	46	32
859	42	42
860/959	32	57
862/973	63	41
863	45	22
864	43	64
865	37	33
870	38	200
901	37	14
904	38	19
906	24	93
907	20	260
908	50	38
909	49	21
910	42	72

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
912	45	52
913	42	34
914	51	28
915	28	7
919/984	50	38
920	57	126
925	39	17
928	38	63
931	43	82
936	40	66
937	45	123

NPA/NPA COMPLEX	POOLED OCNs	POOLED RCs
940	56	78
941	43	11
949	45	7
951	42	20
952	44	3
956	37	34
970	42	94
979	45	52
985	32	44
989	45	135

Section 5 – 2018 Forecast Results and a Review of Forecasts versus Actual Block Assignments

This section identifies forecast 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.

HIGHLIGHTS OF 2018 FORECAST DATA
There were forecasts in 239 NPA and NPA complexes;
11,895 distinct rate areas with forecasts;
116,958 forecasted blocks;
46,588 blocks assigned; and
39.83% of the blocks forecasted were assigned.

In 2018, 116,958 blocks were forecasted, and 46,588 blocks were assigned in 239 NPA and NPA complexes during the 2018 calendar year. This resulted in 39.83% of the forecasted blocks being assigned.

Carriers forecasted a need for blocks in 11,895 of the 16,592 pooling rate centers, or in 72% of them. In 4,697 pooling rate centers, no blocks were forecasted during 2018. Table 5-1 below depicts the percentage of blocks forecasted versus actual block assignment by NPA or NPA Complex.

Table 5-1
Forecasted versus Actual Block Assignments by NPA or NPA Complex for 2018

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
201/551	NJ	771	425	55.12%
202	DC	456	159	34.87%
203/475	CT	530	191	36.04%
205	AL	584	293	50.17%
206	WA	353	114	32.29%
207	ME	479	248	51.77%
208/986	ID	404	220	54.46%
209	CA	358	152	42.46%
210/726	TX	269	137	50.93%
212/332/646/917	NY	1,359	332	24.43%
213/323	CA	725	260	35.86%
214/469/972	TX	1,456	627	43.06%
215/267/445	PA	1,478	694	46.96%
216	OH	173	52	30.06%
217	IL	512	237	46.29%
218	MN	254	107	42.13%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
219	IN	334	122	36.53%
220/740	OH	257	139	54.09%
223/717	PA	1,456	699	48.01%
224/847	IL	635	211	33.23%
225	LA	335	82	24.48%
228	MS	271	65	23.99%
229	GA	379	138	36.41%
231	MI	155	78	50.32%
234/330	OH	498	222	44.58%
239	FL	394	142	36.04%
240/301	MD	1,270	574	45.20%
248/947	MI	534	169	31.65%
251	AL	242	97	40.08%
252	NC	283	170	60.07%
253	WA	164	58	35.37%
254	TX	115	62	53.91%
256/938	AL	407	225	55.28%
260	IN	159	95	59.75%
262	WI	349	137	39.26%
269	MI	225	91	40.44%
270/364	KY	324	82	25.31%
272/570	PA	1,806	941	52.10%
276	VA	358	155	43.30%
279/916	CA	328	164	50.00%
281/346/713/832	TX	1,522	619	40.67%
302	DE	500	242	48.40%
303/720	CO	854	273	31.97%
304/681	WV	1,617	445	27.52%
305/786	FL	869	346	39.82%
307	WY	138	85	61.59%
308	NE	634	52	8.20%
309	IL	495	221	44.65%
310/424	CA	353	138	39.09%
312/872	IL	551	98	17.79%
313	MI	397	140	35.26%
314	MO	348	145	41.67%
315/680	NY	615	428	69.59%
316	KS	830	88	10.60%
317/463	IN	545	237	43.49%
318	LA	549	135	24.59%
319	IA	384	208	54.17%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
320	MN	179	95	53.07%
321	FL	153	50	32.68%
321/407	FL	859	375	43.66%
325	TX	288	77	26.74%
331/630	IL	364	147	40.38%
334	AL	258	167	64.73%
336/743	NC	475	233	49.05%
337	LA	345	84	24.35%
339/781	MA	416	192	46.15%
347/718/917/929	NY	1,496	502	33.56%
347/718/929	NY	115	43	37.39%
351/978	MA	375	123	32.80%
352	FL	435	156	35.86%
360/564	WA	319	110	34.48%
361	TX	160	89	55.63%
380/614	OH	437	163	37.30%
385/801	UT	529	267	50.47%
386	FL	314	127	40.45%
401	RI	171	77	45.03%
402/531	NE	465	269	57.85%
404/470/678	GA	591	258	43.65%
405	OK	593	178	30.02%
406	MT	2,679	153	5.71%
408/669	CA	301	146	48.50%
409	TX	151	65	43.05%
410/443/667	MD	1,696	872	51.42%
412/878	PA	758	371	48.94%
413	MA	206	90	43.69%
414	WI	192	50	26.04%
415/628	CA	348	177	50.86%
417	MO	789	293	37.14%
419/567	OH	372	155	41.67%
423	TN	706	222	31.44%
425	WA	253	119	47.04%
430/903	TX	374	173	46.26%
432	TX	282	124	43.97%
434	VA	450	196	43.56%
435	UT	225	126	56.00%
440	OH	213	97	45.54%
442/760	CA	390	217	55.64%
458/541	OR	581	292	50.26%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
470/678/770	GA	1,620	580	35.80%
478	GA	243	79	32.51%
479	AR	295	202	68.47%
480	AZ	555	205	36.94%
484/610	PA	1,750	962	54.97%
501	AR	398	170	42.71%
502	KY	448	153	34.15%
503/971	OR	602	220	36.54%
504	LA	456	126	27.63%
505	NM	207	80	38.65%
507	MN	184	89	48.37%
508/774	MA	560	197	35.18%
509	WA	303	117	38.61%
510	CA	416	163	39.18%
512/737	TX	511	318	62.23%
513	OH	352	145	41.19%
515	IA	519	232	44.70%
516	NY	339	149	43.95%
517	MI	338	80	23.67%
518/838	NY	2,695	304	11.28%
520	AZ	221	78	35.29%
530	CA	297	139	46.80%
534/715	WI	814	260	31.94%
539/918	OK	701	216	30.81%
540	VA	990	468	47.27%
559	CA	289	93	32.18%
561	FL	485	223	45.98%
562	CA	234	93	39.74%
563	IA	493	160	32.45%
571/703	VA	791	351	44.37%
573	MO	319	201	63.01%
574	IN	188	87	46.28%
575	NM	127	73	57.48%
580	OK	484	124	25.62%
585	NY	338	208	61.54%
586	MI	166	50	30.12%
601/769	MS	297	163	54.88%
602	AZ	490	100	20.41%
603	NH	310	132	42.58%
605	SD	864	137	15.86%
606	KY	376	74	19.68%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
607	NY	230	164	71.30%
608	WI	349	138	39.54%
609/640	NJ	375	143	38.13%
612	MN	447	155	34.68%
615/629	TN	690	258	37.39%
616	MI	258	99	38.37%
617/857	MA	520	236	45.38%
618	IL	502	292	58.17%
619/858	CA	542	226	41.70%
620	KS	320	194	60.63%
623	AZ	580	74	12.76%
626	CA	394	82	20.81%
631/934	NY	334	108	32.34%
636	MO	180	102	56.67%
641	IA	482	305	63.28%
650	CA	225	126	56.00%
651	MN	184	83	45.11%
657/714	CA	540	211	39.07%
660	MO	256	83	32.42%
661	CA	284	121	42.61%
662	MS	230	143	62.17%
682/817	TX	424	213	50.24%
701	ND	201	93	46.27%
702/725	NV	518	201	38.80%
704/980	NC	800	316	39.50%
706/762	GA	633	220	34.76%
707	CA	402	199	49.50%
708	IL	216	58	26.85%
712	IA	450	225	50.00%
716	NY	511	198	38.75%
719	CO	269	114	42.38%
724/878	PA	1,447	730	50.45%
727	FL	296	132	44.59%
731	TN	279	80	28.67%
732/848	NJ	585	207	35.38%
734	MI	459	121	26.36%
747/818	CA	256	141	55.08%
754/954	FL	425	164	38.59%
757	VA	679	404	59.50%
763	MN	171	74	43.27%
765	IN	354	160	45.20%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
772	FL	144	46	31.94%
773/872	IL	257	99	38.52%
775	NV	234	94	40.17%
779/815	IL	487	252	51.75%
785	KS	385	222	57.66%
787/939	PR	814	362	44.47%
802	VT	726	209	28.79%
803	SC	591	213	36.04%
804	VA	693	343	49.49%
805/820	CA	381	161	42.26%
806	TX	261	123	47.13%
808	HI	221	69	31.22%
810	MI	196	71	36.22%
812/930	IN	674	266	39.47%
813	FL	574	248	43.21%
814	PA	1,791	973	54.33%
816	MO	445	221	49.66%
828	NC	492	131	26.63%
830	TX	230	87	37.83%
831	CA	118	62	52.54%
843/854	SC	975	337	34.56%
845	NY	459	198	43.14%
850	FL	1,178	514	43.63%
856	NJ	315	99	31.43%
859	KY	388	89	22.94%
860/959	CT	392	176	44.90%
862/973	NJ	537	235	43.76%
863	FL	272	96	35.29%
864	SC	624	255	40.87%
865	TN	443	115	25.96%
870	AR	433	274	63.28%
901	TN	298	140	46.98%
904	FL	382	166	43.46%
906	MI	293	176	60.07%
907	AK	86	51	59.30%
908	NJ	285	134	47.02%
909	CA	344	107	31.10%
910	NC	417	164	39.33%
912	GA	348	99	28.45%
913	KS	388	180	46.39%
914	NY	354	153	43.22%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
915	TX	149	73	48.99%
919/984	NC	671	265	39.49%
920	WI	704	217	30.82%
925	CA	258	92	35.66%
928	AZ	216	134	62.04%
931	TN	309	117	37.86%
936	TX	203	80	39.41%
937	OH	257	105	40.86%
940	TX	244	136	55.74%
941	FL	313	125	39.94%
949	CA	359	163	45.40%
951	CA	337	138	40.95%
952	MN	369	67	18.16%
956	TX	269	131	48.70%
970	CO	473	264	55.81%
979	TX	158	69	43.67%
985	LA	188	102	54.26%
989	MI	251	120	47.81%
Grand Total		116,958	46,588	39.83%

Table 5-2 shows the blocks forecasted versus actual block assignments by percent assigned, from lowest to highest, in each NPA or NPA Complex. The Montana 406 NPA had the lowest percentage of blocks assigned compared to total forecast, at 5.7%, while New York 607 NPA had the highest ratio at 71.3%.

Table 5-2
Forecasted versus Actual Block Assignments by Percent Assigned
Listed from Lowest to Highest

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
406	MT	2679	153	5.71%
308	NE	634	52	8.20%
316	KS	830	88	10.60%
518/838	NY	2695	304	11.28%
623	AZ	580	74	12.76%
605	SD	864	137	15.86%
312/872	IL	551	98	17.79%
952	MN	369	67	18.16%
606	KY	376	74	19.68%
602	AZ	490	100	20.41%
626	CA	394	82	20.81%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
859	KY	388	89	22.94%
517	MI	338	80	23.67%
228	MS	271	65	23.99%
337	LA	345	84	24.35%
212/332/646/917	NY	1359	332	24.43%
225	LA	335	82	24.48%
318	LA	549	135	24.59%
270/364	KY	324	82	25.31%
580	OK	484	124	25.62%
865	TN	443	115	25.96%
414	WI	192	50	26.04%
734	MI	459	121	26.36%
828	NC	492	131	26.63%
325	TX	288	77	26.74%
708	IL	216	58	26.85%
304/681	WV	1617	445	27.52%
504	LA	456	126	27.63%
912	GA	348	99	28.45%
731	TN	279	80	28.67%
802	VT	726	209	28.79%
405	OK	593	178	30.02%
216	OH	173	52	30.06%
586	MI	166	50	30.12%
539/918	OK	701	216	30.81%
920	WI	704	217	30.82%
909	CA	344	107	31.10%
808	HI	221	69	31.22%
856	NJ	315	99	31.43%
423	TN	706	222	31.44%
248/947	MI	534	169	31.65%
534/715	WI	814	260	31.94%
772	FL	144	46	31.94%
303/720	CO	854	273	31.97%
559	CA	289	93	32.18%
206	WA	353	114	32.29%
631/934	NY	334	108	32.34%
660	MO	256	83	32.42%
563	IA	493	160	32.45%
478	GA	243	79	32.51%
321	FL	153	50	32.68%
351/978	MA	375	123	32.80%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
224/847	IL	635	211	33.23%
347/718/917/929	NY	1496	502	33.56%
502	KY	448	153	34.15%
360/564	WA	319	110	34.48%
843/854	SC	975	337	34.56%
612	MN	447	155	34.68%
706/762	GA	633	220	34.76%
202	DC	456	159	34.87%
508/774	MA	560	197	35.18%
313	MI	397	140	35.26%
520	AZ	221	78	35.29%
863	FL	272	96	35.29%
253	WA	164	58	35.37%
732/848	NJ	585	207	35.38%
925	CA	258	92	35.66%
470/678/770	GA	1620	580	35.80%
213/323	CA	725	260	35.86%
352	FL	435	156	35.86%
203/475	CT	530	191	36.04%
239	FL	394	142	36.04%
803	SC	591	213	36.04%
810	MI	196	71	36.22%
229	GA	379	138	36.41%
219	IN	334	122	36.53%
503/971	OR	602	220	36.54%
480	AZ	555	205	36.94%
417	MO	789	293	37.14%
380/614	OH	437	163	37.30%
347/718/929	NY	115	43	37.39%
615/629	TN	690	258	37.39%
830	TX	230	87	37.83%
931	TN	309	117	37.86%
609/640	NJ	375	143	38.13%
616	MI	258	99	38.37%
773/872	IL	257	99	38.52%
754/954	FL	425	164	38.59%
509	WA	303	117	38.61%
505	NM	207	80	38.65%
716	NY	511	198	38.75%
702/725	NV	518	201	38.80%
657/714	CA	540	211	39.07%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
310/424	CA	353	138	39.09%
510	CA	416	163	39.18%
262	WI	349	137	39.26%
910	NC	417	164	39.33%
936	TX	203	80	39.41%
812/930	IN	674	266	39.47%
919/984	NC	671	265	39.49%
704/980	NC	800	316	39.50%
608	WI	349	138	39.54%
562	CA	234	93	39.74%
305/786	FL	869	346	39.82%
941	FL	313	125	39.94%
251	AL	242	97	40.08%
775	NV	234	94	40.17%
331/630	IL	364	147	40.38%
269	MI	225	91	40.44%
386	FL	314	127	40.45%
281/346/713/832	TX	1522	619	40.67%
937	OH	257	105	40.86%
864	SC	624	255	40.87%
951	CA	337	138	40.95%
513	OH	352	145	41.19%
314	MO	348	145	41.67%
419/567	OH	372	155	41.67%
619/858	CA	542	226	41.70%
218	MN	254	107	42.13%
805/820	CA	381	161	42.26%
719	CO	269	114	42.38%
209	CA	358	152	42.46%
603	NH	310	132	42.58%
661	CA	284	121	42.61%
501	AR	398	170	42.71%
409	TX	151	65	43.05%
214/469/972	TX	1456	627	43.06%
845	NY	459	198	43.14%
813	FL	574	248	43.21%
914	NY	354	153	43.22%
763	MN	171	74	43.27%
276	VA	358	155	43.30%
904	FL	382	166	43.46%
317/463	IN	545	237	43.49%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
434	VA	450	196	43.56%
850	FL	1178	514	43.63%
404/470/678	GA	591	258	43.65%
321/407	FL	859	375	43.66%
979	TX	158	69	43.67%
413	MA	206	90	43.69%
862/973	NJ	537	235	43.76%
516	NY	339	149	43.95%
432	TX	282	124	43.97%
571/703	VA	791	351	44.37%
787/939	PR	814	362	44.47%
234/330	OH	498	222	44.58%
727	FL	296	132	44.59%
309	IL	495	221	44.65%
515	IA	519	232	44.70%
860/959	CT	392	176	44.90%
401	RI	171	77	45.03%
651	MN	184	83	45.11%
240/301	MD	1270	574	45.20%
765	IN	354	160	45.20%
617/857	MA	520	236	45.38%
949	CA	359	163	45.40%
440	OH	213	97	45.54%
561	FL	485	223	45.98%
339/781	MA	416	192	46.15%
430/903	TX	374	173	46.26%
701	ND	201	93	46.27%
574	IN	188	87	46.28%
217	IL	512	237	46.29%
913	KS	388	180	46.39%
530	CA	297	139	46.80%
215/267/445	PA	1478	694	46.96%
901	TN	298	140	46.98%
908	NJ	285	134	47.02%
425	WA	253	119	47.04%
806	TX	261	123	47.13%
540	VA	990	468	47.27%
989	MI	251	120	47.81%
223/717	PA	1456	699	48.01%
507	MN	184	89	48.37%
302	DE	500	242	48.40%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
408/669	CA	301	146	48.50%
956	TX	269	131	48.70%
412/878	PA	758	371	48.94%
915	TX	149	73	48.99%
336/743	NC	475	233	49.05%
804	VA	693	343	49.49%
707	CA	402	199	49.50%
816	MO	445	221	49.66%
279/916	CA	328	164	50.00%
712	IA	450	225	50.00%
205	AL	584	293	50.17%
682/817	TX	424	213	50.24%
458/541	OR	581	292	50.26%
231	MI	155	78	50.32%
724/878	PA	1447	730	50.45%
385/801	UT	529	267	50.47%
415/628	CA	348	177	50.86%
210/726	TX	269	137	50.93%
410/443/667	MD	1696	872	51.42%
779/815	IL	487	252	51.75%
207	ME	479	248	51.77%
272/570	PA	1806	941	52.10%
831	CA	118	62	52.54%
320	MN	179	95	53.07%
254	TX	115	62	53.91%
220/740	OH	257	139	54.09%
319	IA	384	208	54.17%
985	LA	188	102	54.26%
814	PA	1791	973	54.33%
208/986	ID	404	220	54.46%
601/769	MS	297	163	54.88%
484/610	PA	1750	962	54.97%
747/818	CA	256	141	55.08%
201/551	NJ	771	425	55.12%
256/938	AL	407	225	55.28%
361	TX	160	89	55.63%
442/760	CA	390	217	55.64%
940	TX	244	136	55.74%
970	CO	473	264	55.81%
435	UT	225	126	56.00%
650	CA	225	126	56.00%

NPA/NPA Complex	State	Blocks Forecasted	Blocks Assigned	Percent Assigned
636	MO	180	102	56.67%
575	NM	127	73	57.48%
785	KS	385	222	57.66%
402/531	NE	465	269	57.85%
618	IL	502	292	58.17%
907	AK	86	51	59.30%
757	VA	679	404	59.50%
260	IN	159	95	59.75%
906	MI	293	176	60.07%
252	NC	283	170	60.07%
620	KS	320	194	60.63%
585	NY	338	208	61.54%
307	WY	138	85	61.59%
928	AZ	216	134	62.04%
662	MS	230	143	62.17%
512/737	TX	511	318	62.23%
573	MO	319	201	63.01%
641	IA	482	305	63.28%
870	AR	433	274	63.28%
334	AL	258	167	64.73%
479	AR	295	202	68.47%
315/680	NY	615	428	69.59%
607	NY	230	164	71.30%
Grand Total		116,958	46,588	39.83%

For the last five years, the highest percentage of forecasted to actual assigned blocks was 45.7% in 2014 and the lowest of 32.7% was in 2017.

Table 5-3 below illustrates the ratio between forecasts and actual assigned blocks from 2014 through 2018, ranked from highest percentage to lowest.

Table 5-3
Summary of Forecasts and Actual Assigned Blocks from 2014 through 2018

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	2018	116,958	46,588	39.8%
5	2017	121,477	39,728	32.7%

Section 6 - 2018 Pooling Administration (PA) and Routing Number Administration (RNA) Systems Performance

6.1. Pooling Administration System (PAS) Performance

6.1.1 Summary of PAS Performance

The Pooling Administration System (PAS) is the core of the thousands-block pooling operation and is vitally important to the users. 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 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 2018, the PA continued the 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 has exceeded the contract performance metrics for every year since the PA began reporting in 2002.

PAS unavailability in 2018 was due to the actions of a vendor, scheduled down time, and the contract transition of PAS to the new contractor. None of the downtime can be attributed to PAS functionality.

- 33 minutes of unscheduled down time was due to a vendor server failure in March and December.
- One hour 14 minutes of scheduled downtime was due to FCC-approved PAS maintenance in April.
- 41 hours 19 minutes of scheduled down time was due to the transition to Somos from December 13-December 15. Because this downtime was due to an approved contract-related event, the time is not counted against scheduled maintenance. While downtime was approved from Thursday, December 13 at 8pm ET through Monday, December 17 at 8am ET, PAS was available beginning on Saturday, December 15 at 1:19pm.

Table 6-1 summarizes PAS system performance in 2018.

Table 6-1
Summary of Actual 2018 PAS Performance

MONTH	NUMBER OF POSSIBLE AVAILABLE HOURS	NUMBER OF ACTUAL 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 57 minutes	3 minutes	U*
April	720	718 hours 46 minutes	1 hour 14 minutes	S
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	702 hours 11 minutes	41 hours 49 minutes	S and U*

*While this down time was unscheduled it was not due to a PAS deficiency.

6.1.2 PAS Performance Metrics

In 2018, 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 ATTRIBUTABLE UNSCHEDULED PAS AVAILABILITY IN 2018.
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 1 HOUR 14 MINUTES OF DOWNTIME RELATED TO APPROVED SCHEDULED MAINTENANCE DURING 2018[5]

6.1.3 PAS Maintenance and Change Orders

6.1.3.1 PAS Maintenance

The PAS had a total of nine (9) PAS builds and maintenance updates in 2018; on January 19, January 26, February 1, March 29, April 5, April 10, April 27, May 30, and September 12. While the PA used one hour 14 minutes for the database maintenance on April 27, PAS maintenance did not cause any unavailability for the other eight (8) events.

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 three PAS change order proposals in 2018. Table 6-3 provides details for the PAS change orders submitted, approved and implemented.

[5] There was 41 hours 19 minutes of scheduled down time related to the transition of PAS to the new contractor in December, but this does not count toward regular scheduled maintenance.

Table 6-3
2018 PAS Change Order Activity

Number	Date Submitted	Description	NOWG Recommendation	FCC Status	Implemented
6	4/19/18	INC Issue 845 - Add language to the TBPAG Sections 4.3 and 6.2 stating the Quantity of Total Numbering Resources in Section C of the Appendix 3 Shall Match the Total Numbering Resources Report	Approved 5/19/18	Added to PA TRD (273FCC19C0002)	N/A
7	4/19/18	INC Issue 843 - Modify COCAG Appendix C Processes for Soliciting New Code Holders	Approved 5/19/18	Added to PA TRD (273FCC19C0002)	N/A
8	10/29/18	INC Issue 869- NPAC Help Desk information is incorrect on system generated TBPAG Part 1B form	N/A	N/A	N/A[6]

6.1.4 PAS Trouble Tickets Opened and Closed

The PA reports trouble ticket details each month to the NAOWG COSC and in the "Monthly Pooling Metrics Report."

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

The PA opened and closed 6 PAS trouble tickets in 2018. The PA responded to each issue as quickly as possible to ensure timely access to PAS for customer requests and found

[6] In order to meet the deadline for submitting change orders required by the Technical Requirements Document (TRD), the PA submitted the written portion of the change order. However, due to the contract transition period no further action was taken. The completion of this change order will be addressed in 2019.

workarounds so that no customer was unable to complete its request. At no time was any user's information compromised. All of the six trouble tickets opened by the PA in 2018 were due to a PAS system issue.

Table 6-4 shows the details on the total number of PAS trouble tickets opened and closed in 2018.

Table 6-4
2018 PAS Trouble Tickets

TROUBLE TICKET NUMBER	DATE OPENED	DATE CLOSED	ISSUE TYPE
1554	2/9/18	3/29/18	PAS System Error
1555	4/5/18	4/5/18	PAS System Error
1556	4/9/18	4/10/18	PAS System Error
1557	5/15/18	5/30/18	PAS System Error
1558	6/8/18	9/12/18	PAS System Error
1559	8/9/18	9/12/18	PAS System Error

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

Table 6-5
Number of PAS Trouble Tickets from 2014 through 2018

YEAR	NUMBER OF TROUBLE TICKETS
2014	6
2015[7]	32
2016	8
2017	5
2018	6

6.1.5 PAS Transition from Neustar to Somos

Somos began planning for the transition of the PAS from Neustar to Somos immediately upon the execution of the contract in October. Somos and Neustar PA personnel met daily to plan the move and to conduct extensive testing ahead of the final transfer. PAS was transitioned from Neustar to Somos December 13 through December 15. The FCC provided authorization for PAS to be unavailable December 13 beginning at 8 pm Eastern Time and concluding on December 17 at 8 a.m. Eastern Time including a moratorium on all PAS activity. The transition was completed on December 15, nearly two days ahead of schedule. After the transition, the PAS processes, user names and passwords, website address and Help Desk number remained the same.

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

6.2. Routing Number Administration System (RNAS) Performance

6.2.1 Summary of RNAS Performance

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 2018, the RNA continued to exceed the RNAS performance metric of 99.9% scheduled uptime. RNAS was available for use 100% of scheduled time for the year. In 2018, RNAS users experienced no unscheduled down time. The RNAS has exceeded its performance metric every year since implementation in March 2012.

As outlined in Table 6-6, in 2018 RNAS exceeded the performance metrics set forth in Attachment C of the contract:

Table 6-6
Summary of Actual 2018 RNAS Performance

MONTH	NUMBER OF POSSIBLE AVAILABLE HOURS	NUMBER OF ACTUAL HOURS AVAILABLE	TOTAL UNAVAILABILITY	SCHEDULED (S) OR UNSCHEDULED (U)
January	744	744	0	N/A
February	672	672	0	N/A
March	744	744	0	N/A
April	720	718 hours 30 minutes	1 hour 30 minutes	S
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	725 hours 45 minutes	18 hours 15 minutes	S

6.2.2 RNAS Performance Metrics

In 2018, as outlined in Table 6-7, RNAS met or exceeded the performance metrics as set forth in Section 3.3 of Attachment A of the contract for PA systems:

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 2018.
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 1 HOUR 30 MINUTES OF APPROVED DOWNTIME AS A RESULT OF SCHEDULED MAINTENANCE DURING 2018.

6.2.3 RNAS Maintenance

The RNA had a total of five RNAS maintenance updates in 2018; on February 15, April 13, May 30, September 12 and October 18. The RNA requested 2 hours of scheduled downtime for the April 13 maintenance and used 1 hour 30 minutes but RNAS customers experienced no downtime for the other updates.

6.2.4 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 implemented Change Order 5 in 2018, 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). Table 6-8 describes the activities related to Change Order 5.

Table 6-8
2018 RNAS Change Order Activity

Number	Date Submitted	Description	NOWG Recommendation	FCC Status	Current Status
5	9/8/17	Proposed Enhancement to RNAS related to requesting large numbers of p-ANIs.	Approved	Approved Contract Modification #013 on 10/31/17	Implemented on 4/13/18

6.2.5 RNAS Trouble Tickets

The RNA reports on trouble ticket details each month to the NAOWG COSC and in the "Monthly Metrics Report."

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

The RNA opened no new trouble tickets and closed one for RNAS in 2018. It was due to an RNAS system issue. Table 6-9 shows the detail on the RNA trouble ticket closed in 2018.

Table 6-9
2018 RNAS Trouble Tickets

TROUBLE TICKET NUMBER	DATE OPENED	DATE CLOSED	ISSUE TYPE
1553	10/13/17	2/2/18	RNA System Error

Table 6-10 shows the total number of RNAS trouble tickets opened, by year, since 2014.

Table 6-10
Number of RNA Trouble Tickets from 2014 through 2018

YEAR	NUMBER OF TROUBLE TICKETS
2014	2
2015	0
2016	0
2017	3
2018	1

6.2.6 RNAS Transition to Somos

Somos began planning for the transition of the RNAS from Neustar to Somos immediately upon the execution of the contract in October. Somos and Neustar RNA personnel met daily to plan the move and to conduct extensive testing ahead of the final transfer. RNAS was transitioned from Neustar to Somos December 6 through December 7. In conjunction with the move, there was a moratorium on all PAS activity beginning on December 6 and ending with the cutover. The FCC provided authorization for RNAS to be unavailable through December 10 at 8 a.m. Eastern Time. The transition was completed on December 7, nearly three days ahead of schedule. After the transition, the RNAS processes, user names and passwords, website address and Help Desk number remained the same.

6.3. PA and RNA Systems Disaster Recovery Testing

In 2018, the PA and RNA completed systems disaster recovery testing on November 2.

In addition to the system DRP testing, the 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

The PA affirms that all equipment defined in the annual inventory report required per Section 3.21 of the contract and submitted to the FCC Property Management Division is considered transferable property and is available for transfer upon direction from the FCC. The reported transferable property inventory is appropriately labeled with FCC asset tags, 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 supports the industry through several channels during the year: interaction with the Numbering Administration Oversight Working Group (NAOWG) Contract Oversight Subcommittee (COSC), providing status reports for the North American Numbering Council (NANC) meetings through the NAOWG COSC, participation in NANC subgroup meetings, and participation 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 and quarterly Tips.

8.1 North American Numbering Council (NANC)

The PA provided status reports to the FCC through the NAOWG COSC for the four meetings of the North American Numbering Council (NANC) in 2018; in March, June, September, and December. The PA reports consisted of a 12-month rolling status of thousands-block pooling administrator and routing number administrator activities.

The PA also attended the scheduled meetings for the National Number Portability WG and the Call Authentication Trust Anchor (CATA) WG.

8.2 Participation in Industry Forums

As the national PA and RNA, participation at industry forums includes:

- Working on issues and 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 the PA and RNA received from the industry, regulators, and internal sources.

The PA participated in the following industry forums in 2018:

- Industry Numbering Committee (INC) – the PA participated in all 6 face-to-face meetings and 17 virtual meetings. The PA submitted 4 new issues and 35 new contributions in 2018 that were all pooling-related. There were two issues or contributions that were P-ANI-related.

- Common Interest Group on Rating and Routing (CIGRR) – the PA participated in the 5 CIGRR meetings and conference call. The PA continued to review the BCRnoNXD and 3H validation reports monthly prior to the reports being sent to the Administrative Operating Company Numbers (AOCNs). The PA also reviewed the BCRnoNXD 3E report as needed. When requested the PA also researched other data comparison requests sent by iconectiv TRA. The PA 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 17 LNPA WG meetings and 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 one Testbed Landscape Team meeting before the group was disbanded.

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 Pooling and Routing Number Administrator Interaction with the Numbering Administration Oversight Working Group (NAOWG) Contract Oversight Committee (COSC)

The Numbering Administration Oversight Working Group (NAOWG) Contract Oversight Subcommittee (COSC), reviews the PA annual performance. The NAOWG COSC's interactions with the PA throughout the year 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 PA participated in the NAOWG COSC monthly conference calls and during the annual performance review process at the operational review.

The NAOWG COSC and PA met monthly via conference call to discuss the PA and RNA's performance during the previous month. The 2018 meeting dates were: January 30, February 27, March 27, April 17, May 22, June 26, July 31, September 18, October 30, November 27 and December 11.

Prior to each monthly meeting, the PA provided a summary report of performance for the previous month that also included updates on trouble tickets, industry meeting activities and regulatory information with the NOWG during each monthly meeting. Table 8-1 contains the standing description of the monthly meeting agenda items.

Table 8-1
NAOWG COSC Standing Monthly Meeting Agenda Items and Description

Summary Data	Measurable items that happened in the month that are based on the TRD and guideline requirements
Summary Block Report	The total number of rate centers with less than six months inventory based on service providers' forecasts; total number of rate centers with no blocks available where SPs have forecasted a need for blocks within 6 months; and the total number of rate centers with blocks available from codes that have been assigned, but have not yet been opened in the PSTN or NPAC (and are therefore classified as pending)
RCs< 6 Mo Inv	The list of all rate centers that have fewer blocks available than are forecasted to be needed in the next 6 months.
RCs zero Inv w fct	The list of all rate centers that have no blocks available to be assigned, but service providers have forecasted a need for blocks
RCs with Pending Blocks	Blocks that are currently available in the pool where the code holder has not confirmed to the PA it has activated the code in the PSTN, loaded it in the NPAC, and completed all other code holder responsibilities
Trouble Tickets	All new, closed, and pending trouble tickets for the current year and their status
Regulatory Update	Information about state commissions and personnel that might be of importance to the oversight group
INC Update	INC issues that have gone into either initial or final closure and anything of importance to note from INC
Customer Focus Items	Items that require research, assistance, or education beyond our normal daily interactions with customers

In all, the PA provided 12 monthly reports[8] to the NAOWG COSC.

Also, in 2018 the NAOWG COSC completed the annual review of 2017 PA and RNA performance and rated the performance as "Met" contractual requirements by using the following inputs:

- 2017 Performance Feedback Survey for PA and RNA,
- Monthly Reports,
- Annual Operational Review, and
- NAOWG observations and monthly interactions with the PA.

[8] Since there was no August monthly meeting, the PA and RNA provided the July summary report to the NAOWG COSC at the regular September meeting.

The PA participated in the annual operational review of 2017 performance via web conference with members of the NAOWG COSC and FCC staff on June 13, 2018.

The NAOWG COSC also provides recommendations to the FCC on all PAS and RNAS change order proposals. In 2018, the NAOWG COSC provided two recommendations on PA change orders. For details on PAS and RNAS change orders, see sections 6.1.3.2 and 6.2.3.2.

8.4 Pooling and Routing Number Administrator 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 2018, the PA received no formal complaints.

8.5 Pooling and Routing Number Administrator 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 the website.

Table 8-2 lists all of the Pooling Tip topics that were covered by quarter in 2018.

Table 8-2
2018 Quarterly Pooling Tips

Month	Topic
January	Common Mistakes on MONTHS TO EXHAUST and UTILIZATION CERTIFICATION WORK SHEET - TN Level (MTE) Form
April	To Begin Pooling in an Excluded Rate Center
July	Designated Point of Contact - Search for New Block Holder/New Code Holder
October	Adding a New OCN to a PAS User Profile

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 the website.

Table 8-3 lists all of the P-ANI Tip topics that were covered by quarter in 2018.

Table 8-3
2018 Quarterly P-ANI Tips

Month	Topic
January	Returning p-ANIs
April	Returning or Modifying Part of an Existing p-ANI Range
July	Mass New, Modify or Return p-ANI Requests
October	RNAS Passwords

8.6 Pooling and Routing Number Administrator Customer Support / Help Desk

8.6.1 Pooling Administrator 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, and
- Works with carriers to troubleshoot problems and assist in resolving technical problems;

In 2018, the CSR handled approximately 674 calls from customers. Table 8-4 shows the numbers of calls to the pooling Help Desk by year since 2014.

Table 8-4
Number of Pooling Customer Support/Help Desk Calls from 2014 through 2018

Year	Number of Help Desk Calls
2014	1,118
2015	914
2016	875
2017	698
2018	674

8.6.2 Routing Number Administrator (RNA) Customer Support /Help Desk

The P-ANI 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 2018, the P-ANI Help Desk handled 65 phone calls and processed 30 new user registration requests, of which 26 were approved and 4 were denied; 14 profile updates, of which 11 were approved and 3 were denied.

Table 8-5 shows the numbers of calls to the P-ANI Customer Support/Help Desk for the past five years.

Table 8-5
Number of Customer Support/Help Desk Calls for P-ANI Issues from 2014 through 2018

Year	Number of Help Desk Calls
2014	167
2015	81
2016	72
2017	69
2018	65

Section 9 – Volume of Reports Produced in 2018 Aggregated by Regulatory Agency, NANC, NANPA, Service Providers, and Metrics

This section identifies the volume of reports in 2018 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 PA website, the Pooling Administration System (PAS), or the Routing Number Administration System (RNAS). We produced 506 reports in 2018, which is an average of about 42 reports per month.

Table 9-1 shows the total number of reports produced during 2018 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 2018 Reports

Type	Total number of reports
FCC	97
STATES	291
NANC	4
NANPA	28
SERVICE PROVIDER	74
MONTHLY METRICS	12
TOTAL	506

Section 10 - Trends in Pooling Since 2014[9]

When the states began ordering number pooling trials in 1998, nearly every NPA was experiencing acceleration of expected exhaust dates. Many required extraordinary jeopardy procedures[10] to maintain enough resources until relief was implemented. There remain only 2 NPAs in a jeopardy status, IL 217 and 618, compared to 73 in 1999, and 17 in 2010.

This section contains pooling statistics that illustrate the impacts and activity trends in the pooling environment between 2014 and 2018, with the exception of Section 10.1, which includes NXXs saved since pooling began.

10.1 NXXs Saved by Pooling

The PA calculates that *84,894 NXXs* have been saved by pooling, which is the equivalent of 90 NPAs.

Table 10-1 illustrates by NPA/NPA complex[11] the 84,894 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

State	NPA	Quantity of NXXs saved by pooling
New Jersey	201/551	363
District of Columbia	202	26
Connecticut	203/475	329
Alabama	205	327
Washington	206	57
Maine	207	705
Idaho	208/986	333
California	209	484
Texas	210/726	23

State	NPA	Quantity of NXXs saved by pooling
New York	212/332/646/917	36
California	213/323	232
Texas	214/469/972	478
Pennsylvania	215/267/445	504
Ohio	216	55
Illinois	217	591
Minnesota	218	339
Indiana	219	318
Ohio	220/740	939
Pennsylvania	223/717	698

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

State	NPA	Quantity of NXXs saved by pooling
Illinois	224/847	598
Louisiana	225	191
Mississippi	228	101
Georgia	229	191
Michigan	231	546
Ohio	234/330	677
Florida	239	122
Maryland	240/301	670
Michigan	248/947	319
Alabama	251	135
North Carolina	252	426
Washington	253	112
Texas	254	271
Alabama	256/938	392
Indiana	260	342
Wisconsin	262	363
Michigan	269	529
Kentucky	270/364	472
Pennsylvania	272/570	984
Virginia	276	344
California	279/916	181
Texas	281/346/713/832	496
Delaware	302	361
Colorado	303/720	87
West Virginia	304/681	991
Florida	305/786	116
Wyoming	307	183
Nebraska	308	133
Illinois	309	427
California	310/424	311
Illinois	312/872	21
Michigan	313	99
Missouri	314	86
New York	315/680	739
Kansas	316	118
Indiana	317/463	314

State	NPA	Quantity of NXXs saved by pooling
Louisiana	318	427
Iowa	319	265
Minnesota	320	312
Florida	321	65
Florida	321/407	207
Texas	325	148
Illinois	331/630	356
Alabama	334	328
North Carolina	336/743	352
Louisiana	337	326
Massachusetts	339/781	567
New York	347/718/917/929	225
New York	347/718/929	37
Massachusetts	351/978	761
Florida	352	341
Washington	360/564	359
Texas	361	314
Ohio	380/614	179
Utah	385/801	172
Florida	386	214
Rhode Island	401	253
Nebraska	402/531	431
Georgia	404/470/678	27
Oklahoma	405	390
Montana	406	376
California	408/669	169
Texas	409	180
Maryland	410/443/667	1025
Pennsylvania	412/878	334
Massachusetts	413	420
Wisconsin	414	46
California	415/628	217
Missouri	417	539
Ohio	419/567	886
Tennessee	423	352
Washington	425	127

State	NPA	Quantity of NXXs saved by pooling
Texas	430/903	560
Texas	432	119
Virginia	434	335
Utah	435	153
Ohio	440	423
California	442/760	773
Oregon	458/541	760
Georgia	470/678/770	434
Georgia	478	135
Arkansas	479	203
Arizona	480	14
Pennsylvania	484/610	1013
Arkansas	501	248
Kentucky	502	267
Oregon	503/971	326
Louisiana	504	50
New Mexico	505	108
Minnesota	507	400
Massachusetts	508/774	1123
Washington	509	426
California	510	215
Texas	512/737	309
Ohio	513	209
Iowa	515	267
New York	516	176
Michigan	517	431
New York	518/838	918
Arizona	520	107
California	530	679
Wisconsin	534/715	530
Oklahoma	539/918	523
Virginia	540	618
California	559	404
Florida	561	150
California	562	128
Iowa	563	223

State	NPA	Quantity of NXXs saved by pooling
Virginia	571/703	250
Missouri	573	953
Indiana	574	235
New Mexico	575	242
Oklahoma	580	456
New York	585	547
Michigan	586	161
Mississippi	601/769	541
Arizona	602	14
New Hampshire	603	660
South Dakota	605	160
Kentucky	606	296
New York	607	446
Wisconsin	608	348
New Jersey	609/640	571
Minnesota	612	24
Tennessee	615/629	323
Michigan	616	371
Massachusetts	617/857	319
Illinois	618	671
California	619/858	248
Kansas	620	609
Arizona	623	14
California	626	147
New York	631/934	702
Missouri	636	370
Iowa	641	405
California	650	223
Minnesota	651	92
California	657/714	224
Missouri	660	385
California	661	295
Mississippi	662	767
Texas	682/817	242
North Dakota	701	127
Nevada	702/725	67

State	NPA	Quantity of NXXs saved by pooling
North Carolina	704/980	456
Georgia	706/762	533
California	707	751
Illinois	708	438
Iowa	712	303
New York	716	567
Colorado	719	222
Pennsylvania	724/878	1164
Florida	727	81
Tennessee	731	349
New Jersey	732/848	596
Michigan	734	440
California	747/818	254
Florida	754/954	103
Virginia	757	299
Minnesota	763	49
Indiana	765	686
Florida	772	137
Illinois	773/872	158
Nevada	775	214
Illinois	779/815	879
Kansas	785	418
Puerto Rico	787/939	168
Vermont	802	498
South Carolina	803	419
Virginia	804	457
California	805/820	462
Texas	806	213
Hawaii	808	54
Michigan	810	461
Indiana	812/930	695
Florida	813	155
Pennsylvania	814	780
Missouri	816	379
North Carolina	828	380
Texas	830	384

State	NPA	Quantity of NXXs saved by pooling
California	831	237
South Carolina	843/854	381
New York	845	865
Florida	850	259
New Jersey	856	445
Kentucky	859	230
Connecticut	860/959	555
New Jersey	862/973	655
Florida	863	225
South Carolina	864	385
Tennessee	865	233
Arkansas	870	515
Tennessee	901	92
Florida	904	176
Michigan	906	296
Alaska	907	34
New Jersey	908	408
California	909	331
North Carolina	910	454
Georgia	912	215
Kansas	913	134
New York	914	383
Texas	915	50
North Carolina	919/984	338
Wisconsin	920	586
California	925	265
Arizona	928	194
Tennessee	931	396
Texas	936	204
Ohio	937	625
Texas	940	196
Florida	941	162
California	949	114
California	951	320
Minnesota	952	29
Texas	956	232

State	NPA	Quantity of NXXs saved by pooling
Colorado	970	480
Texas	979	232

State	NPA	Quantity of NXXs saved by pooling
Louisiana	985	341
Michigan	989	746

10.2 Trends in Thousands-Block Number Pooling

The following sub-sections contain summaries of thousands-block number pooling statistics since 2014.

10.2.1 Pooling Activity Charts

The following charts illustrate the trends in pooling activity between 2014 and 2018. Table 10-2 shows NXXs opened for LRNs, dedicated customers, and pool replenishment, as well as 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). Figures 4 through 9 are graphic representations of each individual category.

Table 10-2
Pooling Activity from 2014 through 2018 At-A-Glance

	2014 Statistics	2015 Statistics	2016 Statistics	2017 Statistics	2018 Statistics
NXXs Opened for LRNs	352	425	382	436	481
NXXs Opened for Dedicated Customers	79	103	169	91	54
NXXs Opened for Pool Replenishment	2,950	3,188	2,827	2,165	2,262
Blocks Assigned by PA During Year	59,440	53,416	55,723	39,728	36,602
Total Assigned Blocks in PAS at Year End	451,859	494,582	540,560	568,959	605,561
Applications Processed	139,181	145,828	123,629	134,389	115,319

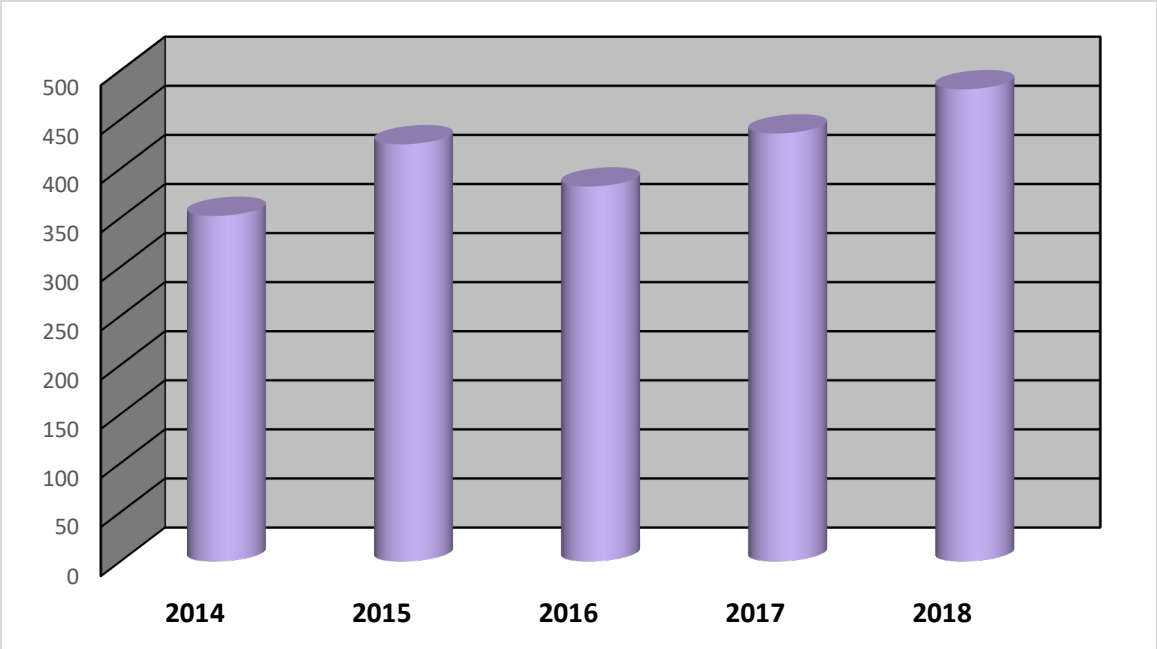

Figure 4: CO Codes Opened for LRNs from 2014 through 2018

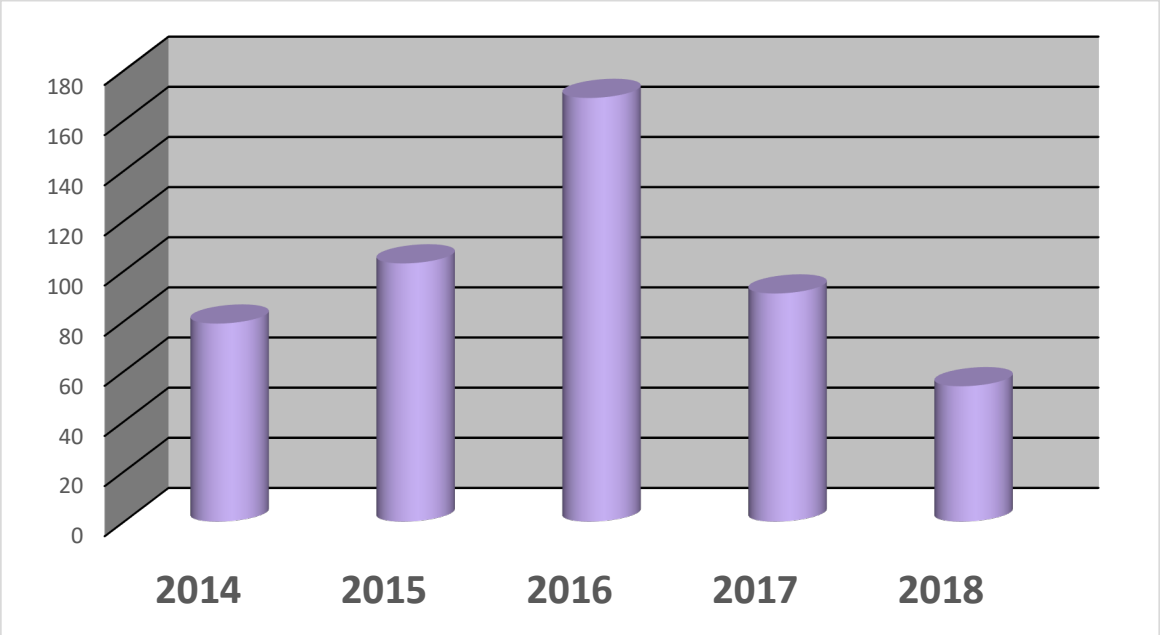

Figure 5: CO Codes Opened for Dedicated Customers from 2014 through 2018

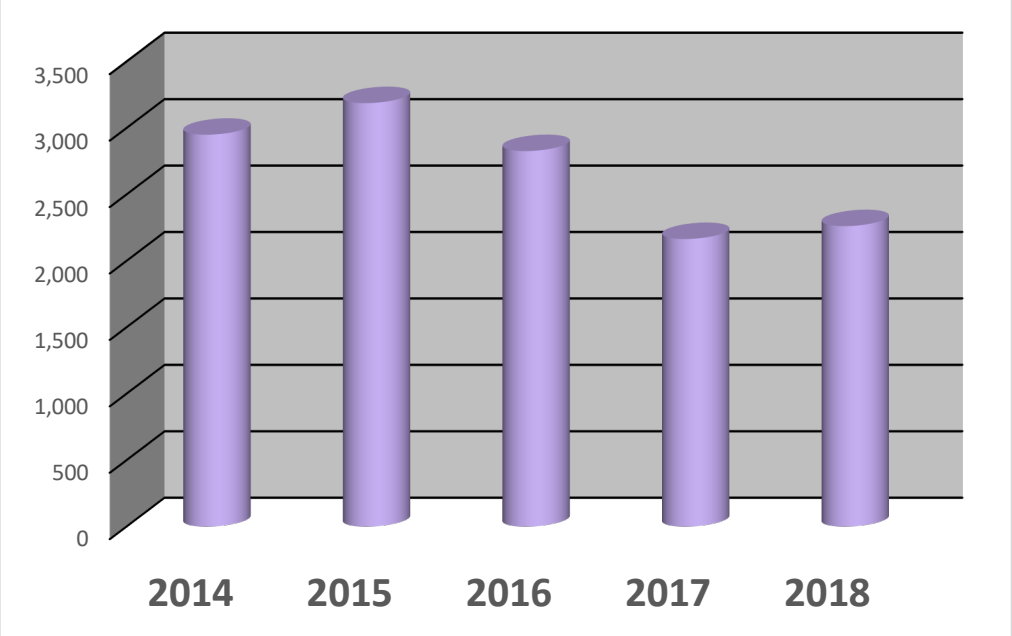

Figure 6: CO Codes Opened for Pool Replenishment from 2014 through 2018

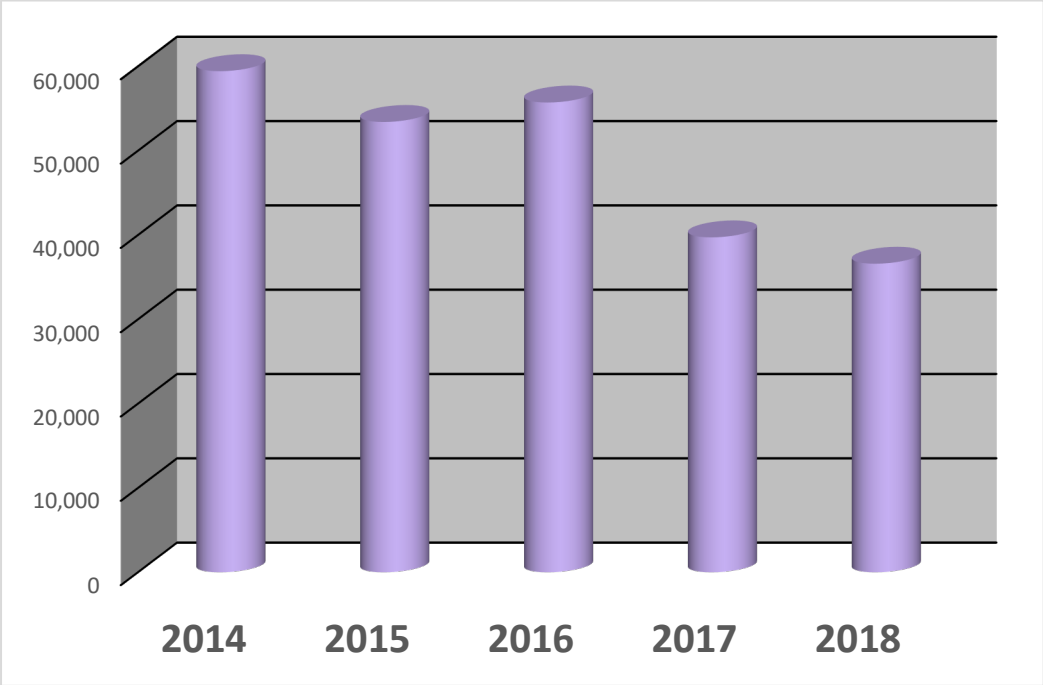

Figure 7: Blocks Assigned During Years 2014 through 2018

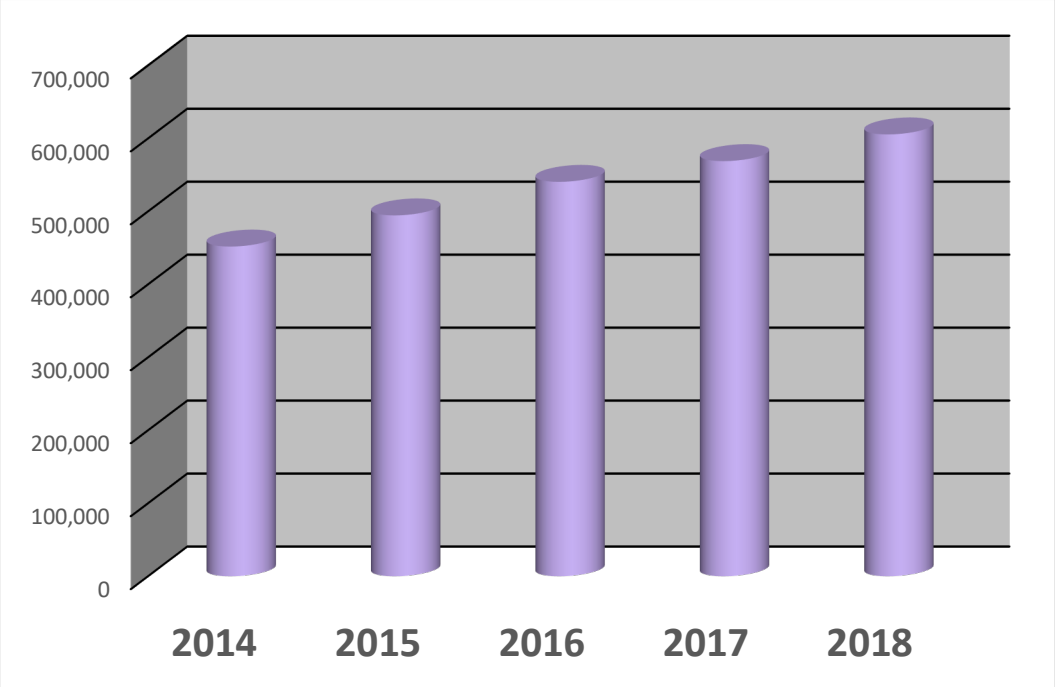

Figure 8: Assigned Blocks at End of Year 2014 through 2018

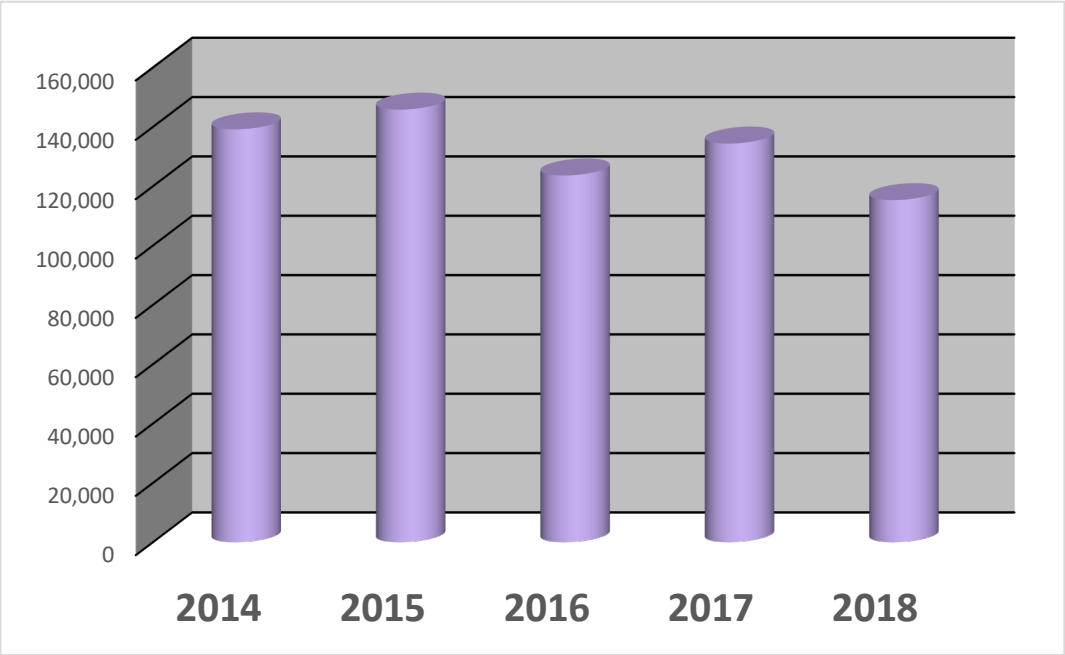

Figure 9: Applications (Part 3s) Processed From Years 2014 through 2018

10.2.2 Total Applications Processed (Part 3s) from 2014 through 2018

The total number of applications (Part 3s) processed is the best measure of the actual processing work performed by the PA. 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 2014 through 2018.

Table 10-3
Total Applications Processed (Part 3s) Since 2014

	2014	2015	2016	2017	2018
Jan	8,069	7,518	6,922	11,063	13,652
Feb	8,725	15,628	12,323	15,301	5,317
Mar	9,422	10.763	15,097	17,491	9,334
Apr	17,601	13,295	9,371	12,298	11,348
May	8,977	17,565	9,614	12,187	11,214
Jun	8,145	24,285	10,767	10,004	11,611
Jul	10,493	13,310	8,067	8,547	6,899
Aug	15,232	8,068	11,361	7,667	7,979

	2014	2015	2016	2017	2018
Sep	12,113	9,977	9,197	7,262	8,146
Oct	15,849	8,524	10,156	7,110	15,080
Nov	13,954	7,604	8,851	10,782	7,790
Dec	10,601	9,291	11,903	14,677	6,949
TOTAL	139,181	145,828	123,629	134,389	115,319

10.2.3 Cumulative Thousands Blocks Assigned Since 2002

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

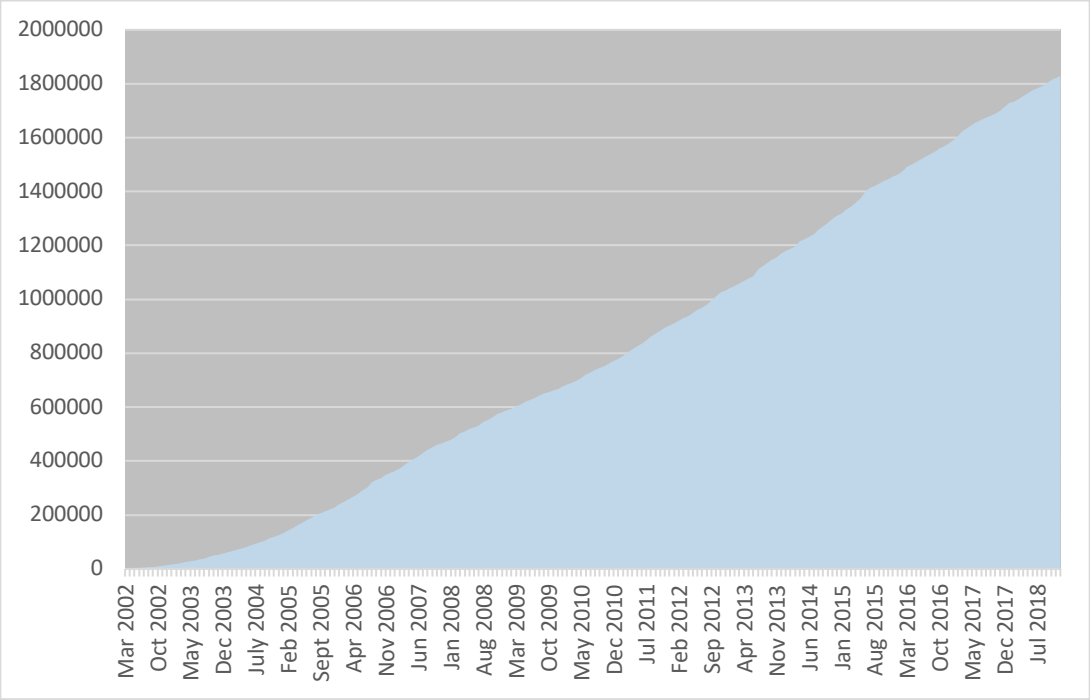

Figure 10: Cumulative Pooling Administration Applications (Part 3s) from March 2002 through December 2018

10.3 – Reclamation 2014 through 2018

The PA has been authorized to reclaim 43 blocks since 2014. Table 10-4 shows the total number of blocks reclaimed by state since 2014, ranked from highest to lowest.

Table 10-4 shows, by year since 2014, the total number of blocks that were actually reclaimed by state.

Table 10-4
Total Number of Blocks Reclaimed by State from 2014 through 2018

State	2014	2015	2016	2017	2018	Total
CALIFORNIA	15	1				16
GEORGIA				6	2	8
MICHIGAN	1	1	2			4
WASHINGTON	1			2	1	4
MISSISSIPPI	1			1		2
OREGON	1			1		2
ALABAMA				1		1
COLORADO				1		1
FLORIDA		1				1
SOUTH CAROLINA	1					1
VERMONT			1			1
VIRGINIA			1			1
WEST VIRGINIA	1					1
TOTAL	21	3	4	12	3	43

Table 10-5 shows, by year since 2014, the cumulative number of blocks on the reclamation lists each month, the total number of those blocks that were new each month, and the number of blocks for which reclamation has been initiated, and the number of blocks actually reclaimed. In 2018, the PA was authorized to initiate reclamation for 115 blocks but actually reclaimed only 3 blocks.

Table 10-5
Summary of Reclamation from 2014 through 2018

Year	Number of Cumulative Blocks on the List	Number of New Blocks on the List[12]	Number of Blocks for which Reclamation was Initiated[13]	Number of Blocks Reclaimed
2014	5,407	1,577	235	21
2015	2,790	815	11	3
2016	2,840	1,081	44	4

[12] The PA added new overdue Part 4s to the cumulative list in 2009.
[13] 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.

Year	Number of Cumulative Blocks on the List	Number of New Blocks on the List[12]	Number of Blocks for which Reclamation was Initiated[13]	Number of Blocks Reclaimed
2017	3,703	1,117	32	12
2018	2,403	1,061	115	3

10.4 Summary of Pooled Areas since 2014

Table 10-6 below depicts the trends in rate center statuses between 2014 through 2018.

Table 10-6
Pooling Rate Center Facts Comparison by Year - 2014 through 2018

	2014	2015	2016	2017	2018
Total Number of Distinct Rate Centers	18,528	18,515	18,507	18,490	18,485
Total Number of Distinct Rate Centers Available for Pooling	16,075	16,248	16,331	16,447	16,592
Percentage of Distinct Rate Centers that are Available for Pooling	86.76%	87.75%	88.24%	88.95%	89.8%
Total Number of Mandatory Distinct Rate Centers	8,815	8,876	8,898	8,983	9,006
Percentage of Distinct Rate Centers that are Mandatory	47.58%	47.93%	48.08%	48.58%	48.7%
Total Number of Distinct Mandatory Single-Service Provider Rate Centers	1,163	1,088	1,064	969	941
Percentage of Distinct Rate Centers that are Mandatory Single-Service Provider	6.28%	5.87%	5.75%	5.24%	5.0%
Total Number of Distinct Optional Rate Centers	6,098	6,284	6,369	6,495	6,645
Percentage of Distinct Rate Centers that are Optional	32.91%	33.94%	34.41%	35.12%	35.9%
Total Number of Distinct Rate Centers Excluded from Pooling	2,452	2,267	2,176	2,043	1,893

	2014	2015	2016	2017	2018
Percentage of Distinct Rate Centers that are Excluded from Pooling	13,23%	12.24%	11.76%	11.04%	10.2%
Total Number of Rate Center Designations Changed (see Section 2.4.2 for detail)	753	298	174	283	204