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Annual Performance Review Report – 2006

Emissions Reduction Market System

May 2007

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Emissions Reduction Market System

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Table of Contents

List of Tables

List of Figures

List of Acronyms

ACMA	Alternative Compliance Market Account
AER	Annual Emission Report
ATU	Allotment Trading Unit
BAT	Best Available Technology
CAA	Clean Air Act
CAAPP	Clean Air Act Permit Program
EPA	Environmental Protection Agency
ERG	Emission Reduction Generator
ERMS	Emissions Reduction Market System
HAP	Hazardous Air Pollutant
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standard for Hazardous Air Pollutants
RACT	Reasonably Available Control Technology
ROP	Rate of Progress
SER	Seasonal Emission Report
TPD	Tons per Day
TRI	Toxic Release Inventory
VOM	Volatile Organic Material

Executive Summary

Northeastern Illinois – the Chicago area – is designated as a moderate nonattainment area (NAA) for the eight-hour ozone National Ambient Air Quality Standard (NAAQS). Under provisions of the Clean Air Act (CAA), as amended in 1990, the area must be in attainment of the eight-hour standard by 2010. Ozone is formed by the photochemical reaction of volatile organic materials (VOM) and nitrogen oxides (NOx) on very warm summer days. Extensive air quality modeling has shown emissions of both VOM and NOx must be reduced in order to meet air quality standards.

VOM emissions come from a wide variety of industrial activities, from painting and printing to chemical manufacturing and even some types of food production. Most VOM emissions are already controlled by technology-based rules, which are typically applicable year-round, irrespective of air quality conditions. Further reductions in emissions using such "command and control" measures are potentially very costly and would have involved determining how each individual industry could reduce emissions even further. As such, Illinois became the first state in the nation to adopt and operate a market-based, cap and trade program for emissions of VOM, the Emissions Reduction Market System (ERMS). The ERMS program was designed as an emission trading program to reduce overall VOM emissions in the Chicago NAA while allowing sources to best determine how to reduce their own emissions in the most cost-effective manner.

The ERMS program operates from May 1 through September 30, correlating with the time of the year when ozone formation is most significant in Illinois. The program allows trading among participating sources in order to meet a reduced cap on their overall VOM emissions. Each participant is given a baseline according to what they actually emitted in previous years, adjusted for their compliance or noncompliance with existing rules. It is important to note that ERMS participants must still adhere to all other state and federal emission limitations. From that baseline, sources were given a number of allotment trading units (ATUs) corresponding to an overall area-wide reduction of 12 percent, with some exceptions for units with emissions that could not be further reduced.

ATUs, each of which represents 200 pounds of VOM, are retired by the Illinois EPA after each trading season to account for all of the source's emissions during that season. Sources may either reduce their emissions by the use of emission controls or process changes, or they may buy ATUs from other sources to account for any emissions in excess of their initial allotment. Any source that reduces its VOM emissions below the allotment level may sell its excess ATUs to another source. Such trading is aided by the Illinois EPA's ERMS website which provides an area for buyers and sellers to post their needs. Furthermore, trading between sources can be accomplished over the Internet.

As sources either make reductions or buy ATUs from those who have, overall VOM emissions in the Chicago NAA are reduced while providing a variety of mechanisms for sources to use in achieving their individual reductions. For the 2006 season, sources in the ERMS program emitted 61.5 percent less VOM than their baselines would have allowed them to emit and 57.4 percent less than their actual ATU allotments. The ERMS program was designed to ensure companies could not accumulate ATUs indefinitely, which would have left open the possibility

of a source having more emissions than anticipated in a single season. Instead, ATUs have a limited life and expire at the end of two years if they are not utilized.

Illinois EPA is required by the ERMS rule to prepare an Annual Performance Review Report addressing the effect of ERMS on VOM emissions, reviewing trends and patterns that have emerged in the operation of ERMS and looking at nine specific areas of the program for the previous seasonal allotment period. The structure for this report was prepared in consultation with industry, environmental groups, USEPA and economists from the University of Illinois at Chicago, all of whom participated in an open dialogue that has helped to frame the information reported.

The seventh year of ERMS market operation produced 23 seasonal trades and 3 new long-term transfer agreements in addition to 21 already in effect. These involved a total of 36 sources as sellers and 36 as buyers, with 20,656 ATUs changing hands. This amounts to 20.6 percent of the total ATU allotment for the area and 48.4 of the ATUs retired for compliance purposes.

In studying the available data, Illinois EPA finds the ERMS program is operating successfully. Emissions are significantly lower than baseline and allotment levels, both locally and in the overall region. Indeed, the allotment itself is 9.5 percent below the baseline level, indicating that even if every company used its entire allotment, the area would still see a significant reduction from the baseline. Furthermore, ATUs have been readily available for sources needing to buy and the market has operated effectively.

Key Findings

- The allotment shows a 9.5 percent reduction from the original baseline.
- Sources were able to find trading partners, there was a sufficient supply of available ATUs and market prices were conducive to trading.
- Alternative ATU generation did not play a role in market performance.
- The reconciliation and compensation processes performed as designed and operated in a timely and effective manner.
- Overall, sources in the ERMS program emitted 61.5 percent less VOM than their baselines would have allowed them to emit and 57.4 percent less than their actual ATU allotment for 2006.
- Trading does not appear to influence HAP emissions.
- ATUs equivalent to 44.9 percent of those allotted to participating sources in 2006 expired without being used.

Conclusions

- The ERMS program continues to achieve the desired emission reductions.
- ERMS participants are performing significantly below the baseline and allotment levels.
- The Market System operated in an effective manner.
- No relationship is apparent between market activity and hazardous air pollutant levels.

1 Introduction

1.1 Nonattainment in the Chicago Area

Northeastern Illinois, including the counties of Cook, DuPage, Kane, Lake, McHenry and Will, plus the townships of Aux Sable and Goose Lake in Grundy County and Oswego in Kendall County, has been designated as a moderate nonattainment area (NAA) for the eight-hour ozone National Ambient Air Quality Standard (NAAQS). Under the provisions of the Clean Air Act (CAA), as amended in 1990, the area must be in attainment with the eight-hour standard by 2010. Extensive air quality modeling has shown emissions of volatile organic material (VOM), a component involved in the formation of ozone, must be reduced. Most VOM emissions are already controlled by technology-based rules, and further reductions in emissions using such "Command and control" measures are potentially very costly. As such, The Illinois EPA proposed the Emissions Reduction Market System (ERMS) VOM emission trading program that would reduce these emissions overall in the Chicago NAA. The Illinois Pollution Control Board adopted the ERMS program as a rule in November 1997 and the rule appears in Title 35 of the Illinois Administrative Code, Subtitle B (Air Pollution), Part 205 (35 Ill. Adm. Code 205).

1.2 Basics of ERMS

The ERMS program is designed to operate on a seasonal basis, from May 1 through September 30, to correlate with the time of year when ozone formation occurs. The program allows trading among participating sources in order to meet a reduced cap on their overall VOM emissions. Each participant has been given a baseline according to what they were actually emitting in specified previous years, adjusted for their compliance or noncompliance with existing rules. ERMS is the first cap-and-trade system in the United States for VOM. Unlike the situation in some open market trading systems, sources must continue to adhere to all other state and federal emission limitations.

Based on their baseline emissions, sources were given allotment trading units (ATUs) corresponding to a reduction of 12 percent, with some exceptions for units with emissions that could not be reduced further. Section 205.405 provides that units falling into one of the following categories are not required to reduce their emissions by 12 percent:

- Units subject to a Maximum Achievable Control Technology (MACT) or National Emission Standard for Hazardous Air Pollutants (NESHAP)
- Units that have demonstrated Lowest Achievable Emission Rate (LAER)
- Units that have demonstrated Best Available Technology (BAT)
- Space heaters and fuel combustion units
- Internal combustion engines

The baseline is the emissions from the units required to make a reduction plus the emissions from the units not required to make a reduction as exempted above. When these exemptions are factored into the area-wide allotment, the actual aggregate allotment has been calculated to be 9.5 percent less than the baseline.

ATUs are retired by the Illinois EPA after each trading season to account for all of the source's emissions during that season. Sources may either reduce their emissions by the use of emission controls or process changes, or they may buy ATUs from other sources to account for any emissions in excess of their initial allotment. Any source that reduces its VOM emissions below the allotment level may sell its excess ATUs to another source. In this way, overall VOM emissions in the Chicago NAA are reduced while providing another mechanism for sources to use in achieving their individual reductions.

ERMS contains a number of features that distinguish it from traditional command and control programs and other market systems:

- Most command and control rules are in-force for the entire year. However, since ozone is a problem in Illinois only during the summer season, and this program goes beyond the traditional "Reasonably Available Control Technology" (RACT) rules, the ERMS program is seasonal and restricts emissions during May 1 through September 30, when the ozone problem exists.
- Many regulations limit emission rates rather than actual emissions. The ERMS program places a cap on sources based on their actual emissions, which provides certainty it will reduce VOM in the nonattainment area.
- The ERMS program, as noted above, goes beyond RACT. Unlike other emission trading systems across the country, Illinois does not allow sources to avoid other emission limits by participating in ERMS. Sources must comply with the ERMS rule *and* all other applicable limits.
- Some trading programs have created trading units with an unlimited life, which allow those units to be accumulated for long periods of time. The ERMS rule provides that ATUs have a limited two-year life. This helps to ensure a robust market, allows some saving for companies, but prevents excessive accumulation of active trading units.
- Because the ERMS rule is associated with the Clean Air Act Permit Program (CAAPP), monitoring and record keeping provisions are linked to avoid duplicative efforts for sources to ensure the use of standardized methods for determining emissions.
- Illinois EPA has created a specific reduction requirement in the ERMS rule, requiring most units to reduce VOM emissions by at least 12 percent. This provides Illinois with a specific, creditable VOM reduction in the Chicago NAA.
- Sources which fail to reduce their emissions or obtain the proper number of ATUs are held accountable for their actions as a part of the ERMS rule itself. Indeed, such sources are penalized at a higher rate for repeated failure to hold the required ATUs. This discourages noncompliance on the part of participating sources and provides the Illinois EPA with some certainty the VOM reductions will be achieved.

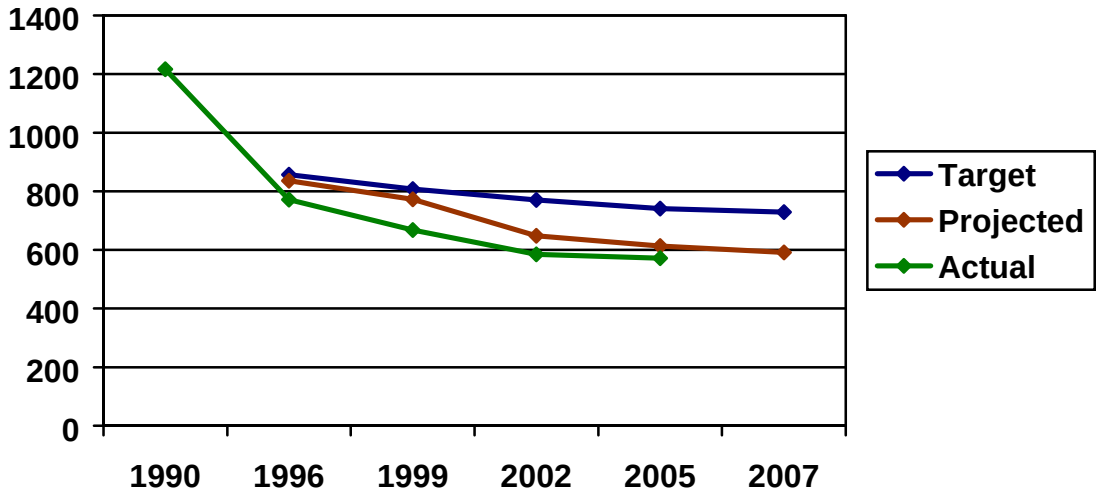
1.3 ERMS Contribution to the Rate of Progress and Attainment

Figure 1-1 shows the actual levels of VOM from 1990 to the present year and target and projected levels through 2007. Illinois EPA has relied upon VOM emission reductions from the ERMS program as part of the ROP reduction measures for the 2000-2002 milestone period as required under the one-hour ozone NAAQS. Illinois EPA has estimated in its ROP plans that the ERMS program will achieve a VOM reduction of 12.6 tons/day. This represents nearly seven percent of the total VOM ROP reduction needed for that milestone period.

Regarding the attainment demonstration for the one-hour ozone NAAQS in the Chicago NAA, Illinois EPA submitted amendments to the Illinois SIP on December 26, 2000. That submittal supplemented the attainment demonstration submitted to USEPA in April 1998. Illinois EPA's attainment demonstration included air quality modeling and a strategy for reducing emissions which relies on the ROP Plans and USEPA's NOx SIP Call. The air quality modeling was performed in cooperation with the Lake Michigan Air Director's Consortium (LADCO) and the States of Indiana, Michigan and Wisconsin. The results demonstrated that implementation of the VOM and NOx control strategies, including ERMS, will result in the Chicago area attaining the one-hour ozone NAAQS by 2007.

On June 15, 2004, the USEPA designated the Chicago Metropolitan Area as a moderate nonattainment area for the eight-hour ozone standard. The deadline for attaining the eight-hour standard is 2010. Although the ERMS program was established under the one-hour ozone standard, Illinois EPA will continue to rely on this program to meet the requirements of the eight-hour standard.

Figure 1-1: ROP Target, Projected and Actual VOM levels (tons/day)



Actual emissions for 2005 are a preliminary estimate. The final inventory has not been compiled.

2 Scope of the Annual Performance Review Report

Section 205.760 of the ERMS rule directs the Illinois EPA to prepare an Annual Performance Review Report addressing the effect of ERMS on VOM emissions, reviewing trends and patterns that have emerged in the operation of ERMS and looking at nine specific areas of the program for the previous seasonal allotment period. These areas, all of which are included in later parts of this report are:

1. Total aggregate VOM emissions from all ERMS sources.
2. A breakdown of the number of ATUs retired for compliance purposes or air quality benefit, number currently banked and the number used by new participating sources.
3. Evaluation of trading activities, including those sources who were net buyers, those that were net sellers and those that did not trade.
4. The use of the Alternative Compliance Market Account (ACMA), including its balance and all transactions into or out of the account.
5. Summary of emission reduction generator (ERG) and inter-sector proposals.
6. Distribution of transactions by geographic area or character of source.
7. Availability of ATUs for purchase.
8. Average market price for ATUs.
9. Trends and spatial distributions of hazardous air pollutants (HAPs).

The Annual Performance Review Report must be prepared by June 15 of every year. This report covers the 2006 ERMS season and all transactions pertaining to that season up to March 15, 2007.

Many of the terms and technical information referred to in this document are based on the requirements in the ERMS rule. Readers who are unfamiliar with that rule should review it first for a better overall understanding of the program and the terminology used in this report.

3 Area-wide Emission Status

3.1 Source Types

There are several different types of sources involved in the ERMS program as described below:

- **Participating sources** are those that have baseline or actual emissions of at least 10 tons during the season, are required to have a CAAPP permit, were operating prior to May 1, 1999 and are located in the Chicago ozone NAA. These make up the vast majority of sources in the ERMS program. They are required to hold ATUs for all of their VOM emissions during the season.

- **New participating sources** have actual seasonal emissions of at least 10 tons, are required to have a CAAPP permit, but were not operating prior to May 1, 1999. They must hold ATUs for all of their VOM emissions during the season, but are not given baselines. They must acquire their ATUs through trades or long-term transfer agreements.

- **Exempt sources** are those which would otherwise need to be participating sources, but have restricted their emissions in one of two ways. They may have used their CAAPP permit to limit seasonal VOM emissions to under 15 tons/season or they may have already reduced their seasonal emissions by at least 18 percent of their baseline.

- **General participants** are entities other than participating sources or new participating sources who have obtained a transaction account and are allowed to trade ATUs. Examples may included brokers or companies there were participating sorces but who shut down their operations and still want to retain control of their ATUs. For the purposes of this report, there are two different types of general participants. There are those who used to be participating sources and therefore continue to receive an allotment. The second group are those who were not previously classified as participating sources and who never received allotments.

- **Special participants** are entities that register with the Illinois EPA to purchase and retire ATUs, but not sell ATUs. Any ATUs given or sold to a special participant are automatically retired.

3.2 Total Aggregate VOM Emissions

Table 3-1 below summarizes the seasonal VOM emissions from each of the source categories.

Table 3-1: Source Emission Breakdown

Category	Number of Sources	Seasonal VOM Emissions (tons)
Participating Sources	165	4,243.6
New Participating Source	1	19.1
Exempt due to 15 ton/season limit	79	372.9
Exempt due to 18% reduction	2	9.0

As a subset of participating sources and new participating sources, some emissions may be covered by variances, consent orders or CAAPP compliance schedules. Others may come from contingent units, which are those units for which a construction permit was issued prior to 1998, but for which three years of data is not yet available to determine a baseline. A third subcategory is units that had an emergency condition approved by the Illinois EPA as described in the Section 205.750. Emissions from the affected units are not included in the total for which ATUs are required in all of these situations. Thus, they are subtracted out before reconciliation.

Other units may be part of a major modification to the source. Such a situation requires the source to provide 1.15 times (1.3 times for existing major modifications prior to the redesignation) the emissions from the applicable units, in order to account for new source review requirements. Table 3-2 shows the emissions from these types of units.

Table 3-2: Special Unit Emission Breakdown

Special Unit Type	Number of Sources	Seasonal VOM Emissions (tons)
Contingent Units	0	0.00
Emergency	0	0.00
Variance, Consent Order, etc.	0	0.00
Major Modifications	4	26.84

Overall, there was a total of 11,087.5 tons of seasonal VOM emissions in the baselines of all sources. These sources had an allotment of 100,363 ATUs (10,036.3 tons). This represents an area-wide 9.5 percent reduction from the baseline VOM total to the allotment total before actual emissions are taken into account.

3.3 Breakdown of ATU Use

ATUs are retired by the Illinois EPA to account for VOM emissions from participating and new participating sources during the season. ATUs have a two year life (except for some special circumstances) and can be retained if they are not used or traded during the year in which they are allotted. An ATU that is not used during this two year period automatically expires. ATUs may also be donated or sold to a special participant for air quality benefit (immediate retiring) should a source so choose.

New and participating sources used 42,740 ATUs for compliance purposes. This is a larger number than the number of ATUs reported because one company used ATUs for excursion compensation. Sources are retaining 93,875 ATUs, or approximately 93.5 percent of the 2006 allotment, for the 2007 season.

3.4 Expired ATUs

At the end of the 2006 season, 42,414 ATUs expired from non-ERG sources. This represents 42.3 percent of the number of ATUs allotted in 2006. Table 3-3 identifies the source of these expirations. General participants have been further split in this table to show those that have received ATUs from ERGs separate from those that did not. For more information on ERGs, see Section 5.

Table 3-3: Expired ATUs

Source Type	**Number of Sources with Expired ATUs**	**Total Number of Expired ATUs**
Participating Source	111	34,146
General Participants (non-ERG)	5	1,851
New Participating Sources	0	0
Shutdowns	21	6,417
Total non-ERG	***137***	***42,414***
ERGs	7	2,682
Total	**144**	**45,096**

3.5 ATU Vintage Summary

While some companies allowed year-2005 ATUs to expire without using them, other companies were retiring year-2005 ATUs for compliance purposes. Of the 42,641 ATUs retired for compliance purposes after the 2006 season, 33,682 were originally issued in 2005.

Since ATUs with different expiration dates could be traded, the average price by ATU vintage was analyzed. There were 1379 ATUs traded in the 2006 season that were issued in 2005 (and thus would have expired after the 2006 season). These trades averaged $17.03/ATU. Trades involving the 510 ATUs that were issued for the 2006 season (which would have expired after the 2007 season) averaged $17.19/ATU. The difference in prices is minor. Similar to the 2005 season, the average price for an ATU with a longer remaining life was less than those with a shorter remaining life. As in previous years, there does not seem to be any market difference in the cost of ATUs by vintage.

3.6 Findings

The initial design target for the ERMS program was a 12 percent reduction from the baseline, made up of 9 percent for ROP, 1 percent for ACMA and 2 percent contingency. The resulting allotment for 2005 was 9.5 percent below the baseline, which satisfies the needed reduction for achieving ROP, given the net effect of exemptions, opt-outs and contingency measures.

ATUs equivalent to a total of 44.9 percent of those allotted to participating sources expired in 2006 without being used.

4 Evaluation of Trading Activities

4.1 Account Officers

All sources required to participate in the ERMS program must have at least one account officer designated to represent their transaction account. Designated account officers are ultimately responsible for all information contained in each transaction account. Many sources have at least two account officers so that one individual could be the primary and the other could be designated as the alternate.

The ERMS rule specifies all prospective account officers must participate in account officer training sponsored by the Illinois EPA prior to representing a transaction account. As of the start of the 2007 seasonal allotment period, the Illinois EPA has held 23 account officer training sessions from August 1999 to March 2007. The training session held in March 2007 trained four account officers. There are now a total of 422 trained account officers.

Each training session was approximately 5 hours in length and all account officers were given a manual that could be used as a reference tool. The training agenda included sections covering Title V permitting, ERMS program overview, ATU creation review, seasonal emission reporting, emission compensation process, functioning in the ERMS marketplace, transaction account, ACMA and the ERMS website.

Accessing and working with an assortment of information via the ERMS website is large part of many account officers' duties. Not only is the information on the website convenient to access, it also provides the most up-to-date data available in the ERMS program. Illinois EPA determined that it was important to provide access to a training version of this site during the account officer training to give participants hands-on opportunity to view the website. Account officers were able to post mock buy/sell postings and enter into mock trades during the session.

4.2 Website Access

There have been no significant problems with the ERMS website. Issues continue with company firewalls blocking information coming from the ERMS website. Solutions to this problem have been posted on the website and the Agency continues to work with companies needing guidance.

The ERMS website can be found at **www.epa.state.il.us/air/erms**.

4.3 Transaction Summary

During the 2006 season, the program generated 23 seasonal trades, 3 new long-term transfer agreements and 21 transfer agreements continuing from the previous years. These transactions involved a total of 36 sources as sellers and 36 as buyers (including excursion compensation sources). Six participants (four general and two participating) both bought and sold ATUs in 2006. Some of the sources that were both buying and selling were shuffling ATUs to account for multiple locations. Most sources sold to other participating sources or general participants, but one source provided ATUs to a special participant. Tables 4-1 and 4-2 list the overall selling and buying of each source. Those sources not listed had no trading activity.

Table 4-1: ATU Sellers

Name	**ATU Sold on Market**	**ATUs to Special Participants**	**ATUs to ACMA**
Transfer Agreements			
3M Company		10,237	
Acme Packaging Corp	468		
Acme Steel Co	221		
American NTN Bearing Mfg	30		
AMPAC Flexicon Inc	200		
Applied Composites	142		
Berlin Industries	80		
Brown Printing Co	88		
Color Communications	185		
Consolidated Carqueville Printing	136		
Equilon Enterprises LLC	2		
Loparex			38
Marathon Ashland Petroleum LLC	177		
Palex Container Systems	862		
Rexam Release	191		
Robert Tasch	136		
Rock-Tenn Co (1675)	611		
Rock-Tenn Co (8728)	300		
Silgan Closures, LLC	1,313		
Sleepeck Printing Co	10		
St. Clair Pakwell	100		
Stack-on Products	204		
Viskase Corp	230		
Zenith Electronics	302		
Transfer Agreement Subtotal	*5,988*	*10,237*	*38*

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Table 4-1: ATU Sellers (continued)

Name	ATU Sold on Market	ATUs to Special Participants	ATUs to ACMA
Trades			
ACMA Account	2,001		
Bluegrass Labels (1626)	50		
Caterpillar (1741)	114		
Corn Products International	227		
FCL Graphics	80		
Free-flow Packaging	225		
Henri Studio	239		
International Truck and Engine Corp	19		
Lyon Workspace Products LLC	151		
MeadWestvaco Consumer Packaging	110		
Meyer Steel Drum Inc	100		
Oasis Industries	113		
Prairie Packaging (1632)	41		
Rock-Tenn Company/Waldorf Corp	223		
Silgan Containers Corp	167		
Sleepeck Printing	123		
University of Illinois-Chicago (10348)	100		
Viskase Corp	256		
Wrico Packaging	54		
Trades Subtotal	*4,393*	*0*	*0*
Total	**10,381**	**10,237**	**38**

Table 4-2: ATU Buyers

Name	ATU Bought on Market	ATUs Bought for Excursion Compensation
Transfer Agreements		
ACMA Account	38	
Acme Packaging Corp	221	
Air Products and Chemicals	230	
American Lung Association	10,237	
Berlin Industries	80	
Brown Printing	88	
Buckeye Terminals LLC	2	
Dart Container Corp of Illinois	400	
ECC Ltd	10	
Field Container Co	100	
Illinois EPA	185	
Jim Pendergrass	204	
Law Office of Katherine Delahunt	302	
Loparex Inc	191	
Marathon Ashland Petroleum LLC	177	
Meyer Steel Drum Inc (1618)	431	
Meyer Steel Drum Inc (1750)	431	
Oasis Industries	142	
RK and Associates Inc	136	
Robert Tasch	136	
Rock-Tenn Co/Waldorf Corp	611	
S & C Electric	130	
Signode Corp	468	
Silgan Containers Corp	1,313	
Transfer Agreement Subtotal	*16,263*	*0*

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Table 4-2: ATU Buyers (continued)

Name	ATU Bought on Market	ATUs Bought for Excursion Compensation
Trades		
Acme Finishing	85	
Bluegrass Flexible Packaging (1688)	50	1,902
Brakur Custom Cabinetry	38	
Campagna-Turano Bakery Inc	113	
Caterpillar (1673)	114	
Central Can Co	54	
East Balt Commissary Inc	110	
ExxonMobil Oil Corp	29	
Engineered Glass Products	217	
Fort Dearborn Lithographic Co	19	
Heartland EPS	256	
Highland Baking	198	
Illinois EPA	239	
Lifoam Industries LLC	113	
National Baking		99
Meyer Industrial Container	100	
Multifilm Packaging Corp	80	
Pepperidge Farm Inc	223	
Prairie Packaging Inc (13689)	192	
QA Products	54	
University of Illinois-Chicago (10345)	100	
Wincup	8	
Trades Subtotal	*2,392*	
Total	**18,655**	**2,001**

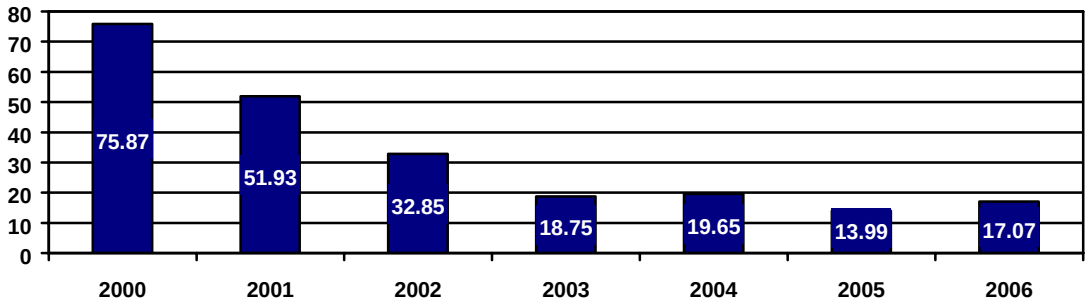
Trades (excluding excursion compensation and donations to ACMA and special participants) accounted for 8,479 ATUs. Trading activity comprised 8.4 percent of the total allotment of 100,363 ATUs and 19.9 percent of the 42,656 ATUs that represent the emissions reported for compliance purposes.

4.4 ATU Availability

There are several indicators of how accessible ATUs are to ERMS participants. One indicator is the relative number of "buy" and "sell" postings to the ERMS bulletin board. There were a total of eight "sell" postings which showed 1942 ATUs and two buy postings for a total of 331 ATUs. The fact that there was such a high ratio of ATUs for sale as compared to those attempting to buy indicates ATUs were readily available to those looking for them.

A second indicator is the average price. If ATUs are difficult to obtain, their price should rise as a function of supply and demand. If they are readily available, the price should generally decline. Prices declined in the early years but have steadied in recent years. Figure 4-1 shows the average ATU prices since ERMS began.

Figure 4-1: Average ATU Price ($/ATU)



A third indicator is that no source requested regular access to ACMA during the reconciliation period. Sources would likely request such access if they could not find the ATUs they need on the market. Thus, it can be concluded sources who were looking to acquire ATUs found the ATUs they needed in the market.

A fourth indicator is the number of sources that went into excursion compensation because they did not have enough ATUs to account for their emissions. One source went into excursion compensation after the 2006 season. Circumstances regarding this excursion cannot be attributed to unavailability of ATUs. The source simply did not undertake the necessary actions to obtain required ATUs. There has been no indication that any source that was actively looking for ATUs was unable to obtain the needed amount.

A final indicator is the number of ATUs that expire. As discussed above, after the 2006 season, 45,081 ATUs expired without being used. This represents 44.9 percent of the ATUs allotted in 2006. If ATUs were in high demand, it is unlikely so many would have expired.

4.5 Average ATU Market Price

The market price of an ATU is determined through trading among the ERMS participants. The Illinois EPA uses information submitted with each trade to calculate the average market price by dividing the total price of all included transactions by the number of ATUs traded. Trades may not be included if the participants indicated special considerations were involved – for example, if one branch of a company trades ATUs to another branch without charging a fee. Long-term transfer agreements are not included in the calculation of the average market price.

Using this method, the average market price for each ATU in the 2006 season was calculated to be $17.07. ATUs ranged in price from $5 to $22.50 each. Seventeen of the 23 trades were included in determining this average.

4.6 Findings

- Sources were able to find trading partners
- There was a sufficient supply of available ATUs
- Market prices were conducive to trading

5 Alternative ATU Generation

5.1 Summary of Emissions Reduction Generator (ERG) Proposals

An emissions reduction generator (ERG) is a source that has achieved reductions in VOM emissions but is not a participating source in ERMS. The reductions must be certified in a permit and a participating source, new participating source or general participant must propose the reductions.

There were no new ERG proposals during 2006. In previous years, nine ERGs were approved. Table 5-1 shows the ERGs that received ATUs in 2006.

All ERG proposals to date have been shutdowns for which facilities have forfeited their permits to operate the affected units in order to receive ATUs. It is possible for sources to apply to become ERGs using other methods, but all must show actual reductions in VOM emissions. Any source wishing to get ATUs on a continuing basis must modify its permit to incorporate the limits, thus ensuring that actual reductions are achieved. Sources wishing only to get a single issuance of ATUs must prove actual VOM reductions for that season.

Table 5-1: ERGs Receiving ATUs

Name	**ATU Allotment**	**ATUs to ACMA**
Alumax Extrusions	63	
CCL Custom Manufacturing	147	36
General Mills	19	
Industrial Coatings	82	
Metal Box International	90	
Pactiv	1,317	329
Sherwin-Williams	884	221
Solo Cup	99	
Total	**2,701**	**586**

ATUs for ERGs equates to 2.7 percent of the total allotment to all sources in the ERMS program.

All of the ATUs allocated for ERGS in 2006, with the exception of General Mills, went into general participating accounts and were not traded in that season. A total of 2,682 ATUs expired from these accounts after the 2006 season (the full allotments of all ERGs except General Mills). The ATUs for General Mills went to its sister facility in DuPage County. In the previous years of the ERMS program, a total of 114 ATUs have been transferred to General Mills due to this ERG. This source had 59 ATUs expire this year and they are holding 183 ATUs in their account that will carry over to the 2007 season. Thus, the ATUs from the ERG were not necessary to keep the company under their allotment and did not play any role in trading.

5.2 Summary of Inter-Sector Proposals

A request for review of an inter-sector proposal was received in May 2005. This proposal was from The FReMCo Group in Burlington, Ontario, Canada on behalf of ICI Paints. ICI Paints manufactures and sells paints and coatings for consumer and commercial applications. All paints and coatings sold by ICI Paints in Illinois are certified by the applicant to meet or exceed the federal standard.

ICI Paints proposed to reduce VOM emissions from certain paints and coatings by selling products in Illinois certified to meet the standards of California. ICI proposed quantification methods and recordkeeping in its application. As part of the proposal, ICI calculated a reduction of 613 tons of VOM in the season.

The proposal was reviewed and rejected. The main point for rejection was the calculation methodology. The method to determine emission credits is to calculate VOM content using a "solids basis" (i.e., lb of VOM/gallon of solids) as found in 35 Ill. Adm. Code 218.206. The applicant was performing the calculation using lb of VOM/gallon of coating.

A revised proposal was submitted in November 2005. This submittal addressed most of the issues with the original rejection. Unfortunately, there was a math error in carrying the units through the calculation to obtain the amount of VOM reductions. This submittal was also rejected.

The proposal was resubmitted in May 2006 which identified an acceptable calculation methodology. The company was notified of the acceptance. At the end of 2006, the company submitted data to perform the calculation to establish the reduction in emissions. The numbers were finally accepted in early 2007 and the source was given 699 ATUs for their intersector proposal. As per the company's wishes, these ATUs were immediately retired for air quality benefit.

5.3 Findings

- Alternative ATU generation did not play a role in market performance during the 2006 season since all ATUs generated were immediately retired for air quality benefit.

6 Performance Accountability

6.1 Seasonal Emission Reports

Illinois EPA identified 229 facilities that were required to submit seasonal emission reports (SERs) for the ERMS program. These reports are based on federally enforceable permit conditions for recordkeeping, reporting, monitoring and calculation methodology. Of these, 163 SERs were expected from permitted participating sources. Follow-up calls were made to 21 facilities that did not submit their SERs by the deadline.

Illinois EPA deemed 11.7 percent of the SERs received from participating sources as unacceptable for a variety of errors. The reasons for determining reports to be unacceptable continue to include items from previous years:

- Mathematical or rounding errors
- Failure to include all significant emission units covered by the permit
- Failure to follow proper permit procedures for calculating emissions
- Failure to report HAPs

Sources are required to report VOM HAP emissions on their SERs if they are subject to MACT, report to TRI or are major for HAPs. Some sources continued to report pollutants that were not HAPs, or, that were HAPs but were not VOM. Information pertaining to these pollutants was not considered in this evaluation.

6.2 Alternative Compliance Market Account (ACMA)

The purpose of ACMA is to serve as a secondary source of ATUs for participants. Unlike ATUs allocated to sources, those in ACMA have an indefinite life as long as they remain in ACMA. Once they are bought, they must be used to account for either the preceding or subsequent seasonal allotment period.

ACMA may receive ATUs in several ways. ACMA is given ATUs in an amount equal to one percent of each year's allotment to the participating sources. Sources that choose to become exempt from ERMS by taking an 18 percent reduction have six percent of that reduction allotted to ACMA. ATUs are also deposited in ACMA as a result of participating source shutdowns and ERG shudowns. Sources may donate ATUs to ACMA.

A total of 3670 ATUs were deposited into ACMA, as detailed in Table 6-1 below. Of these, a total of 38 ATUs were donated to ACMA by a source as part of the settlement of a compliance issue.

Table 6-1: ACMA Account Balance

	2001	2002	2003	2004	2005	2006
Regular Allotment	966	947	965	946	987	1,004
Allotment from 18% Reduction	36	36	36	36	36	22
ERG Shutdowns	587	586	586	586	586	586
Participating Source Shutdowns	133	604	648	1,168	1,910	2,020
Donations to ACMA	0	287	268	38	223	38
ATUs Bought from ACMA	-39	-395	-40	-32	-999	-5,237
Previous Year's Balance	1,059	2,742	4,807	7,270	10,012	12,755
Balance	**2,742**	**4,807**	**7,270**	**10,012**	**12,755**	**11,188**

Sources may buy ATUs from ACMA during the reconciliation period or, if necessary, in excursion compensation. No sources bought ATUs from ACMA during the reconciliation period. The 5,237 ATUs purchased from ACMA were due to compliance issues at other sources for previous years. This number includes the 99 ATUs purchased for the source that was in excursion this season. Recent ACMA purchases by year can be seen in table 6-2.

Table 6-2: ACMA Purchases

	2002	2003	2004	2005	2006
Sources	2	3	1	3	6
ATUs purchased	395	40	32	999	5,237
Total cost (nearest dollar)	$31,831	$1,125	$945	$28,622	$238,579

6.3 Excursion Compensation

One source went into excursion compensation for the 2006 season. For this source, lack of action to purchase ATUs seemed to be the apparent cause of going into excursion rather than being unable to obtain ATUs on the market. This source was in excursion for 2005 so the source was required to provide 1.5 times the ATUs of their excursion.

Sources in excursion compensation have their ATUs withdrawn from ACMA unless they instruct Illinois EPA to take them from the next year's allotment. This source did not indicate which option they wished to choose and therefore, the rule requires the source to purchase from ACMA.

6.4 Source Inspections

In order to make sure appropriate ERMS reporting and compliance is maintained, Illinois EPA has its Field Operations Section focus on ERMS sources during the year. In 2006, Illinois EPA inspected ten of the 15 ton exempt sources. ERMS Master File inspections where performed at 25 participating sources. Master File inspections add a further level of review of the source's ERMS Compliance Master File to make sure all recordkeeping, HAP information and other ERMS related items are being properly maintained. No Violation Notices were issued to as a result of the ERMS inspections.

6.5 Findings

- The same errors continue to be made on the SERs each year. These errors are satisfactorily resolved once the company is notified.
- No requests for regular access to ACMA were received during the reconciliation period.
- The reconciliation and compensation processes performed as designed and operated in a timely and effective manner.
- Inspections by the Illinois EPA found sources to be complying with the ERMS requirements.

7 Distribution of Emissions

7.1 Geographic Distribution of Transactions

Table 7-1 summarizes the number of ATUs traded for each county. It should be noted the total number of ATUs that appear to be leaving the nonattainment area is much higher than the total coming in. This is mostly due to ATUs sold to general participants who do not reside in any particular county and who have not then traded those ATUs back into the area for use by a participant. In addition, ATUs traded to special participants are counted as being "sold" but not "bought" because all such ATUs are immediately retired without being used in a particular county. ATUs donated to ACMA would have a similar result as they are also not used in any particular county. Similarly, the ATUs for excursion compensation did not come from any county. The source in excursion for 2006 was required to purchase from ACMA.

Table 7-1: ATUs Traded by County

County	# of ERMS Sources	ATUs Sold	ATUs Bought	Excursion ATUs	Net
Cook	121	16,133	3,187	99	-12,985
DuPage	12	0	1,875	0	1,875
Grundy	3	0	0	0	0
Kane	15	486	622	0	136
Kendall	1	0	114	0	114
Lake	13	443	256	0	-187
McHenry	9	288	88	0	-200
Will	22	114	192	0	78

Cook County shows the largest differential in ATUs transfers with almost 13,000 ATUs leaving the county. The vast majority (over 10,000 ATUs) is due to 3M's Environmental Management System Agreement which requires the source to donate half of their ATUs to a Special Participant. Counties that show an increase also include sources purchasing ATUs to cover past compliance problems. The history of ATUs traded by county can be found in Section 8.4.

During the seven years of the program, no pattern or trend in trading, in terms of ATU flow among the counties has emerged.

Table 7-2 provides a comparison by county showing baselines, allotments and actual reported ATU use.

Table 7-2: ATU Comparison by County

County	Baseline (tons)	Allotment (ATUs)	Reported (ATUs)	Difference from Baseline	Difference from Allotment
Cook	7,426.6	66,485	22,401	-69.9%	-66.35
DuPage	470.3	4,169	2,070	-56.1%	-50.3%
Grundy	509.1	4,623	3,590	-29.5%	-22.3%
Kane	475.2	4,409	2,713	-43.1%	-38.5%
Kendall	61.4	542	593	-3.4%	9.4%
Lake	473.7	4,452	1,076	-77.4%	-75.8%
McHenry	207.5	1,881	684	-67.2%	-63.65
Will	1,463.7	13,802	9,580	-34.6%	-30.6%
Total	**11,087.5**	**100,363**	**42,707**	**-61.5%**	**-57.4%**

The overall actual emissions in the nonattainment area and in all counties except Kendall were substantially lower than allotted emissions. Kendall's excess emissions are due to a small increase in emissions from the single ERMS source in that county.

Table 7-3 shows how many ATUs have expired and are being retained by county. The percent expired and percent retained is calculated based upon the 2006 allotment.

Table 7-3: Total ATUs Expired and Retained by County

County	Allotment (ATUs)	ATUs Expired	Percent Expired	ATUs Retained	Percent Retained
Cook	66,485	26,922	40.5	60,537	91.1
DuPage	4,169	2,508	60.2	3,745	89.8
Grundy	4,623	984	21.3	4,600	99.5
Kane	4,409	1,718	39.0	3,350	76.0
Kendall	542	0	0.0	0	0.0
Lake	4,452	3,241	72.8	3,914	87.9
McHenry	1,881	848	45.1	1,842	97.9
Will	13,802	4,388	31.8	10,677	77.4
Total	**100,363**	**45,081**	**44.9**	**93,875**	**93.5**

Illinois EPA has utilized townships to look at ATU trading activity in more detail. Specifically, the Public Land Survey System township locations were used. Survey townships were chosen for a number of reasons, including their generally uniform size, unchanging historical borders and readily available population data. The borders of other possible geographic units such as ZIP codes or census tracts could change due to factors not involved in ERMS. A listing of the townships is given in Appendix A.

There are 61 townships with ERMS participants and a total of 118 townships in the nonattainment area. Tables 7-4 and 7-5 summarize the number of sources in townships and the area of townships.

Table 7-4: Number of Sources per Township

Number of Sources	Number of Townships
1	27
2-3	17
4-6	8
>6	9

Table 7-5: Township Areas

Area (square miles)	Number of Townships
30-39	100
20-30	7
<20	11

Table 7-6 summarizes trading at the township level.

Table 7-6: ATUs Traded by Township

Township	Allotment (ATUs)	ATU Increase	ATU Decrease	Net	Change from Allotment
3510	629	0	114	-114	-18.1%
3614	2,423	0	225	-225	-9.3%
3708	542	114	0	114	21.0%
3710	2,851	192	0	192	6.7%
3714	6,698	221	468	-247	-3.7%
3715	608	0	221	-221	-36.3%
3808	1,755	542	264	278	15.8%
3811	378	1,733	0	1,733	458.5%
3812	22,818	470	11,127	-10,657	-46.7%
3813	5,896	0	652	-652	-11.1%
3814	2,981	100	0	100	3.4%
3912	2,524	0	233	-233	9.2%
3913	2,672	1,029	285	744	27.8%
3914	2,647	427	1,016	-589	-22.3%
4008	420	0	192	-192	-45.7%
4009	145	8	0	8	5.5%
4010	617	80	0	80	13.0%
4011	1,434	54	0	54	3.8%
4012	2,518	0	511	-511	-20.3%
4013	1,651	113	1,313	-1,200	72.7%
4108	834	80	0	80	9.6%
4110	300	50	80	-30	-10.0%
4111	4,040	391	2	389	9.6%
4113	350	217	0	217	62.0%
4114	220	130	0	130	59.15
4208	603	0	30	-30	-5.0%
4308	88	0	88	-88	-100.0%
4309	332	0	200	-200	-60.2%
4407	74	88	0	88	118.9%
4409	331	0	443	-443	-133.8%
4511	214	256	0	256	119.6%

Tables 7-7 and 7-8 summarize the ATUs expired and retained at the township level of the entire nonattainment area. The percentage given is for the number of ATUs that expired as compared to the number of ATUs allotted to the township in 2005. See Appendix B for full details by township number.

Table 7-7: Expired ATUs by Township

Percent of ATUs Expired	Number of Townships
0	12
0.1 - 20	3
20.1 – 40	16
40.1 – 60	9
60.1 – 80	13
>80	7

Table 7-8: Retained ATUs by Township

Percent of ATUs Retained	Number of Townships
0	4
0.1 - 20	4
20.1 – 40	1
40.1 – 60	3
60.1 – 80	6
80.1 – 100	38
>100	4

To get a full picture of how the ERMS program works at a township level, it is necessary to look at the actual emissions rather than simply at trades. Some companies had excess ATUs they could have sold if a buyer had been located. Others may have chosen not to sell even if their emissions were lower than their allotments. Illinois EPA compared the actual emissions reported by participants in each township to the baselines and allotments for those townships and used this approach throughout the remainder of the analysis.

In this analysis, Illinois EPA found that five townships, or 4.2 percent of the 118 townships in the entire Chicago NAA showed increases in emissions over their baselines, as shown in Table 7-9.

Table 7-9: Townships with Emissions Over Baseline Level

County	Township	Number of Sources	VOM Increase (tons)	Increase from Baseline
DuPage	3811 – Downer's Grove	1	17.1	39.9%
DuPage	4009 – Wayne	1	1.3	8.1%
Kendall	3708 – Oswego	1	2.0	5.2%
Lake	4511 – Warren	1	22.7	93.4%
McHenry	4407 – Dorr	1	6.2	84.3%

Figure 7-1 shows all participating sources and the five townships highlighted in yellow with an increase over their baselines. Each township with an increase over its baseline has only one source.

Table 7-10 identifies the townships that had 2006 seasonal emissions exceeding their allotment level. These seven townships represent 5.9 percent of the total townships.

Table 7-10: Townships with Emissions Over Allotment Level

County	Township	Number of Sources	VOM Increase (ATUs)	Increase from Baseline
Cook	4113 – Niles	4	67	19.1%
DuPage	3811 – Downer's Grove	1	223	59.0%
DuPage	4009 – Wayne	1	33	22.8%
Kendall	3708 – Oswego	1	51	9.4%
Lake	4511 – Warren	1	256	119.6%
McHenry	4407 – Dorr	1	62	83.8%
Will	3610 – Lockport	4	12	8.4%

Figure 7-2 shows all participating sources in the NAA and highlights in yellow the seven townships which show increases over their allotments. Figures 7-3 and 7-4 show the highlighted townships for both baseline and allotment comparisons and flag only those sources that traded. Both of these maps show a single buyer or two in each of the affected townships that put that township over its baseline or allotment.

Every county, but one, and the nonattainment area overall showed emissions significantly less than both the baseline and allotment. Appendix B contains the data from which all of the above information was obtained and a map showing actual emissions compared to the allotment.

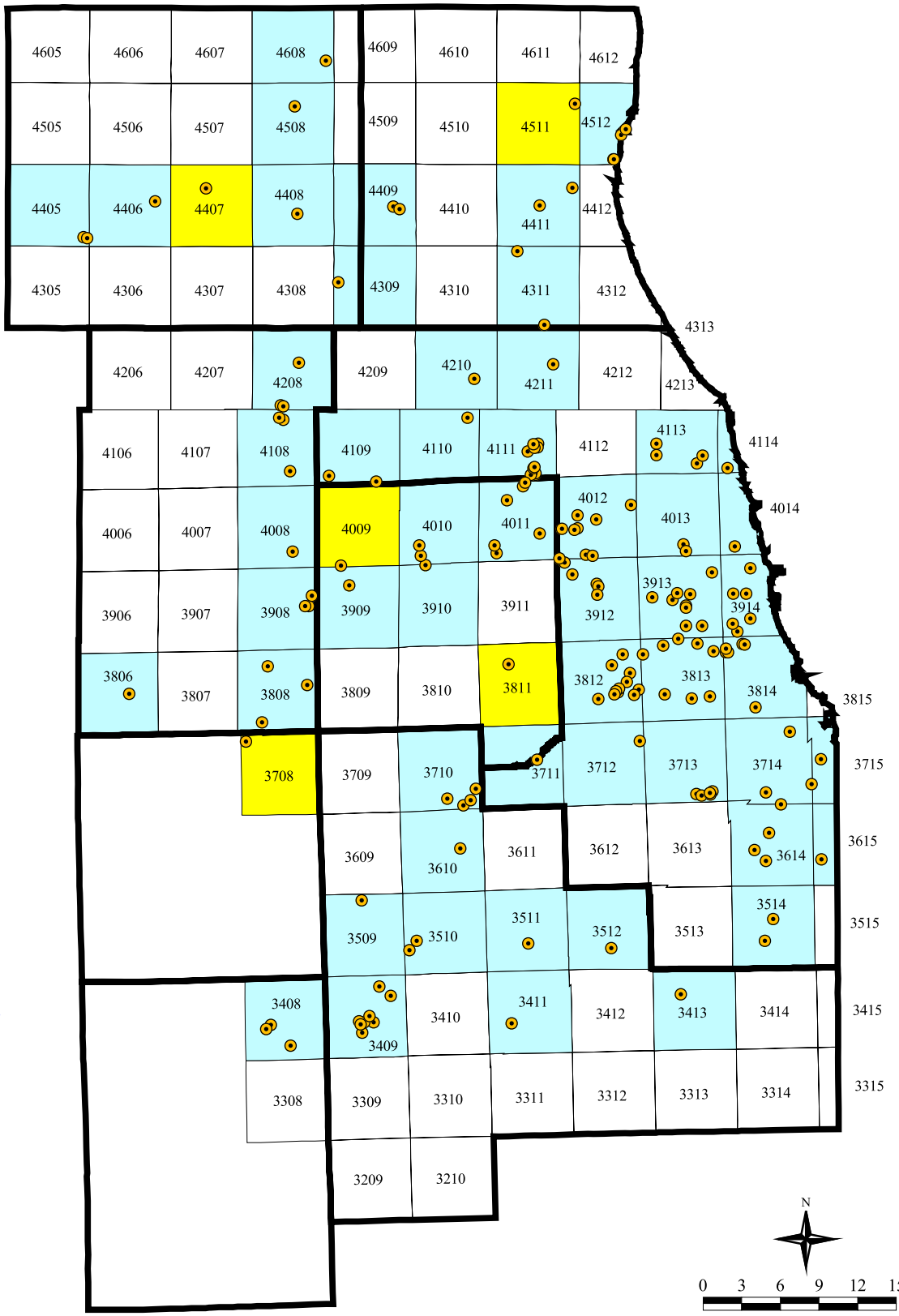
7.2 Type of Source

Table 7-11 identifies sources by their two-digit SIC code for each source that took part in a trade.

Table 7-11: Transactions by SIC Code

SIC and Description	ATUs Bought	ATUs Sold	Net
20 – Food Products	2,208	227	1981
25 – Furniture and Fixtures	0	151	-151
26 – Paper Products	150	11,274	-11,124
27 – Printing & Publishing	267	695	-428
30 – Rubber & Plastic Products	1,111	966	145
32 – Stone, clay, glass & concrete	217	239	-22
33 – Primary Metals	0	221	-221
34 – Fabricated Metal Products	1,259	2,085	-826
35 – Industrial & Commercial Machinery	114	163	-49
36 – Electronic & Electrical Equipment	130	302	-172
51 – Wholesale Trade – Nondurable	208	179	29
76 – Miscellaneous Repair Services	531	862	-331
82 – Educational Services	100	100	0

Figure 7-1: Difference from Baseline



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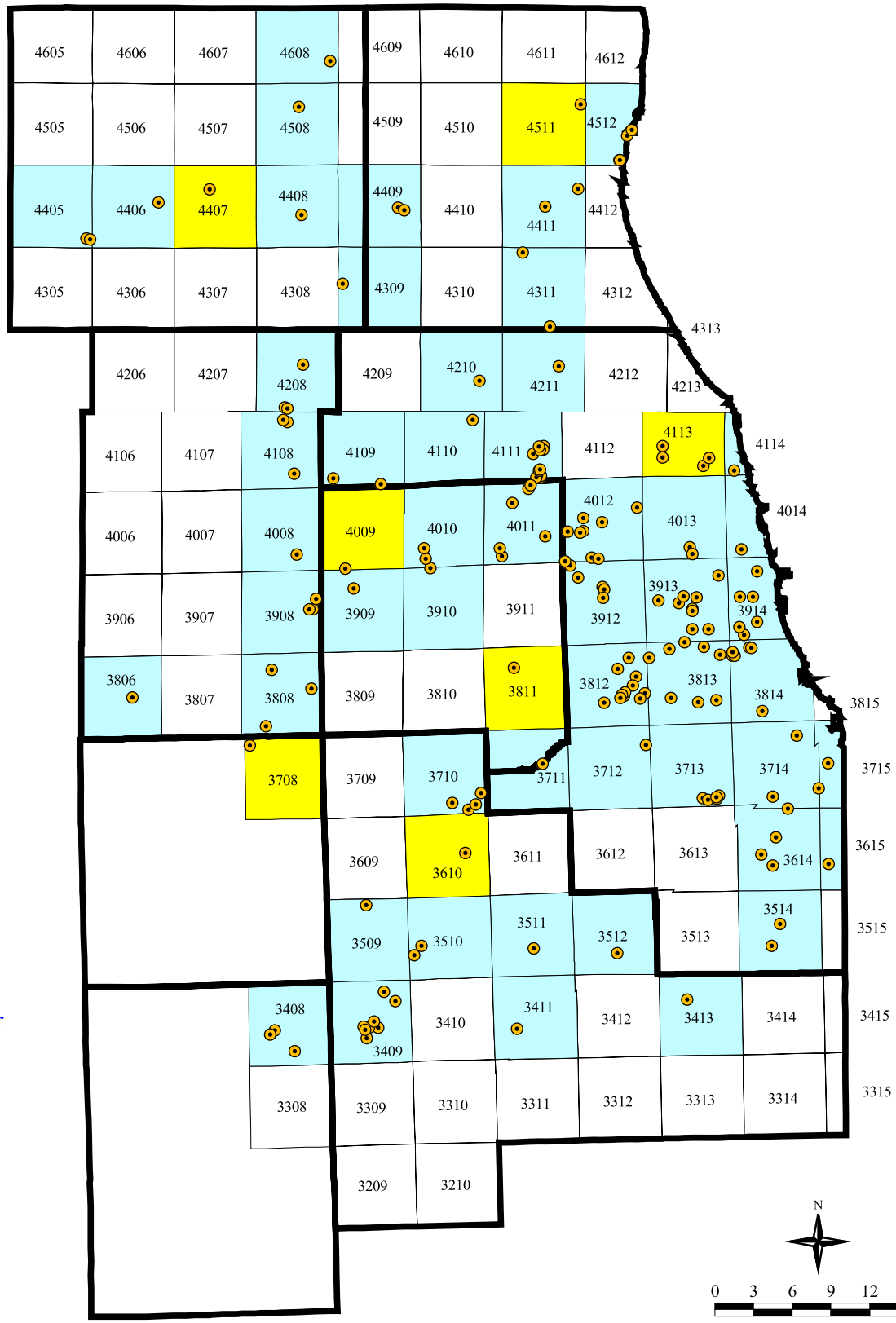
Legend

- ERMS Participants
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-2: Difference from Allotment



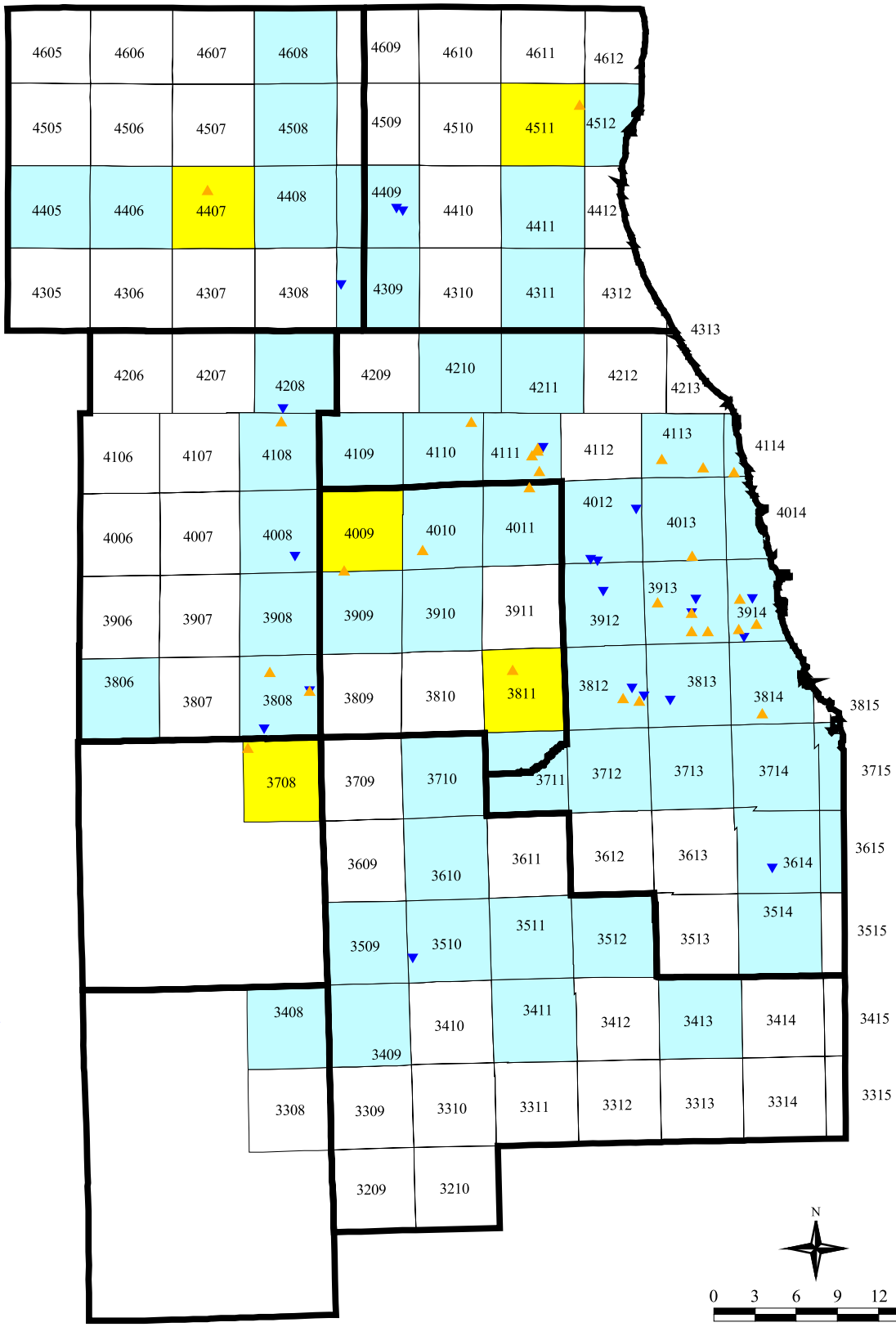
Illinois EPA
Bureau of Air

Legend

- ERMS Participants
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-3: Difference from Baseline and Traders

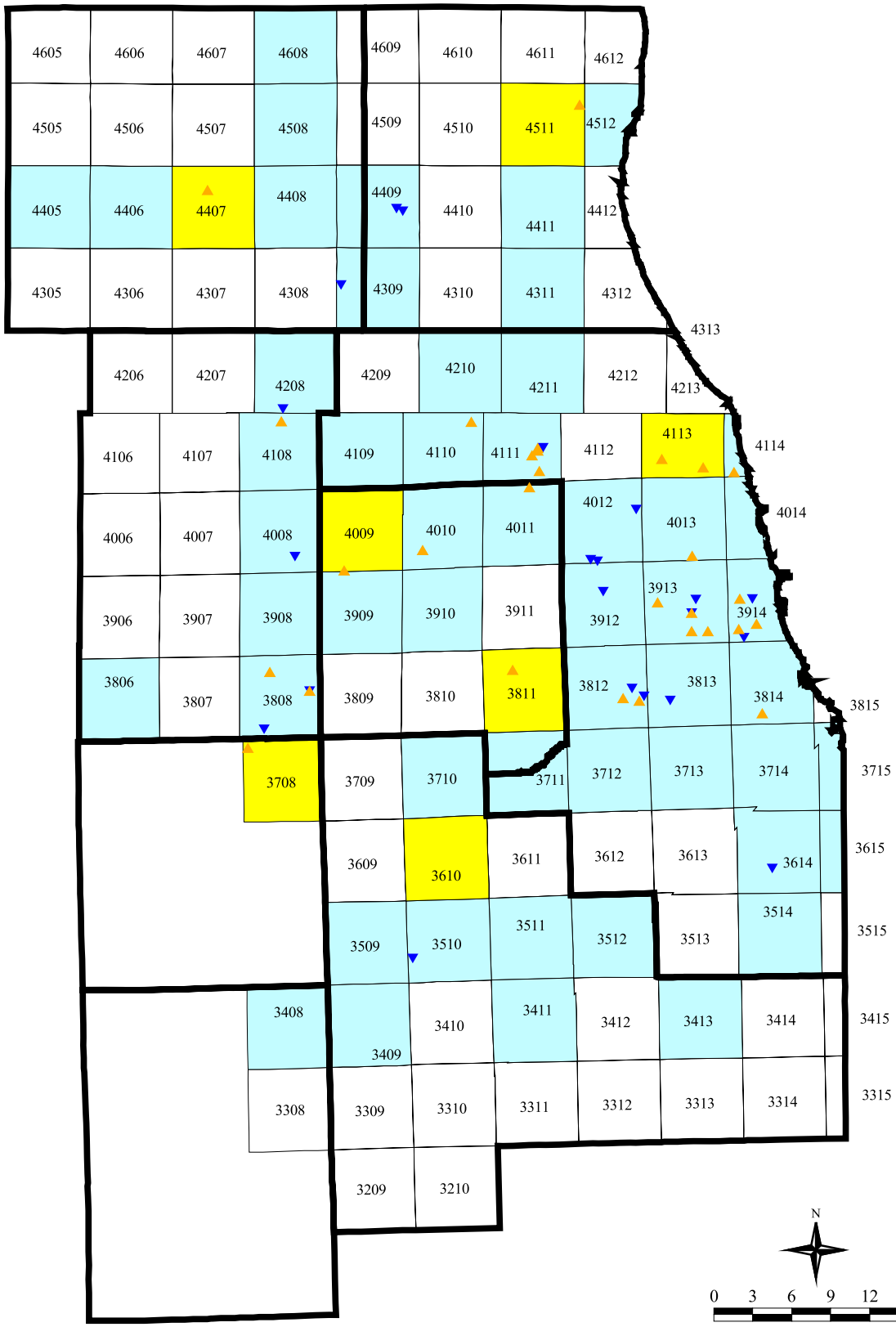


Illinois EPA
Bureau of Air

Legend
- Buyers
- Sellers
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-4: Difference from Allotment and Traders



Illinois EPA
Bureau of Air

Legend
- Buyers
- Sellers
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Table 7-12 provides the allotments for every SIC code which has a participant and that are being retained by sources in that industrial category.

Table 7-12: Total ATUs Expired and Retained by SIC Code

SIC	Allotment (ATUs)	ATUs Expired	Percent Expired	ATUs Retained	Percent Retained
20 – Food Products	9113	3075	33.7	7786	85.4
22 – Textile Products	459	272	59.3	319	69.5
24 – Lumber/Wood	386	0	0.0	219	56.7
25 – Furniture	1653	1118	67.6	1653	100.0
26 – Paper Products	17771	3809	21.4	16683	93.9
27 – Printing/Publishing	4541	1940	42.7	4050	89.2
28 – Chemical Products	16008	7248	45.3	15681	98.0
29 – Petroleum	4992	715	14.3	2981	59.7
30 – Rubber/Plastic	9021	2952	32.7	7109	78.8
31 – Leather Products	281	172	61.2	281	100.0
32 – Stone/Clay/Glass	127	0	0.0	3	2.4
33 – Primary Metals	5702	3039	53.3	5458	95.7
34 – Fabricated Metals	11284	5894	52.2	9286	82.3
35 – Industrial Machinery	3014	1525	50.6	2331	77.3
36 – Electrical Equipment	766	433	56.5	464	60.6
37 – Transportation Equip.	6836	4448	65.1	6836	100.0
38 – Meas. & Control Equip.	111	89	80.2	111	100.0
39 – Misc. Manufacturing	83	67	80.7	83	100.0
42 – Motor Freight Transport	1252	304	24.3	1210	96.7
46 – Pipelines	898	393	43.8	749	83.4
49 – Elec./Gas Services	480	266	55.4	480	100.0
51 – Nondurable Goods	3706	2177	58.7	3457	93.3
73 – Business Services	219	69	31.5	219	100.0
76 – Misc. Repair Services	1261	265	21.0	802	63.6
82 – Educational Services	316	272	86.1	316	100.0
87 – Engineering/Research	83	67	80.7	83	100.0

7.3 Trends and Spatial Distributions of Hazardous Air Pollutants (HAPs)

This is the sixth year sources have reported their HAP emissions. Area-wide emissions of HAPs show a downward trend since the first reporting year of 2001. VOM emissions show a generally downward trend. Emissions of HAPs by county can be found in Section 8.5.

Figures 7-5 and 7-6 show the previously mentioned townships and those ERMS sources that reported VOM HAPs in their SER. While most of the townships in question do contain sources that reported HAPs, there is no geographic concentration of such sources.

To further examine any possible relationship between HAP emitters and those townships which saw an increase, Figures 7-7 and 7-8 show those sources which are both HAP reporters and also participated in a trade during the 2006 season. As can be seen on those figures, there were only four ATU buyers out of these HAP reporters in highlighted townships. Two of these sources had a slight increase in HAP emissions from 2005 to 2006. One source out of the remaining two had a small decrease. The last source had a large decrease and cut its emissions by over half (from about 37000 pounds to 16000 pounds).

Table 7-13 shows the total HAPs reported for each township. It also shows the relative HAP emission density by looking at the percentage of HAP emissions compared to the total reported HAPs for the entire nonattainment area by ERMS sources and the net result of trading that took place in those townships.

Once again, the areas with the highest HAP emissions were not buying ATUs and increasing HAP emissions. Furthermore, overall HAP emissions have decreased over the four years for which data had been collected. From this, trading does not appear to influence HAP emissions.

Table 7-13: Reported HAP Emissions by Township

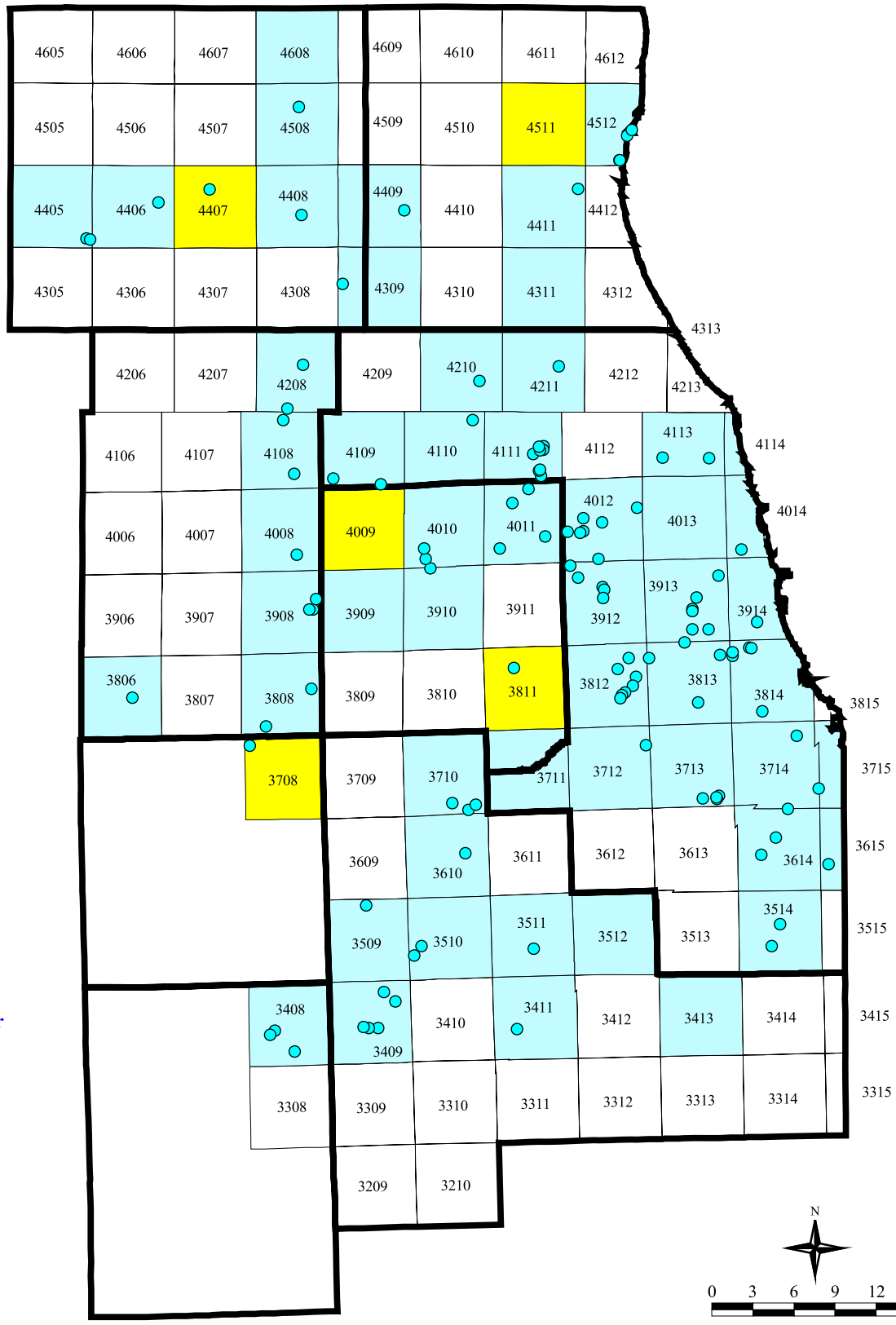
Township	HAP Emissions (tons)	Percent of Total HAPs (%)	Net ATU Change
3408	24.1	3.9	0
3409	132.3	21.4	0
3411	0.5	0.1	0
3509	1.7	0.3	0
3510	4.2	0.7	0
3511	0.7	0.1	0
3514	5.5	0.9	0
3610	1.1	0.2	0
3614	57.9	9.4	0
3615	4.0	0.7	0
3708	7.9	1.3	0
3710	36.7	5.9	0
3712	0.9	0.1	0
3713	17.0	2.7	0
3714	30.5	4.9	-247
3806	0.4	0.1	0

table continued on next page

Table 7-13: Reported HAP Emissions by Township (continued)

Township	HAP Emissions (tons)	Percent of Total HAPs (%)	Net ATU Change
3808	3.5	0.6	278
3811	3.0	0.5	0
3812	74.2	12.0	-10,657
3813	44.2	7.1	0
3814	11.8	1.9	0
3908	1.6	0.3	0
3910	0.3	0.0	0
3912	4.9	0.8	0
3913	23.0	3.7	744
3914	7.5	1.2	-589
4008	2.5	0.4	0
4010	25.0	4.0	0
4011	2.7	0.4	0
4012	17.9	2.9	0
4013	0.0	0.0	-1,200
4014	0.8	0.1	0
4108	1.1	0.2	0
4109	15.5	2.5	0
4110	0.6	0.1	-30
4111	13.5	2.2	389
4113	1.4	0.2	0
4208	3.7	0.6	0
4210	11.7	1.9	0
4211	0.6	0.1	0
4309	0.0	0.0	-200
4405	0.3	0.0	0
4406	0.0	0.0	0
4407	5.8	0.9	0
4408	0.4	0.1	0
4409	0.6	0.1	0
4411	0.8	0.1	0
4508	5.5	0.9	0
4512	9.1	1.5	0

Figure 7-5: VOM HAP Reporting Sources (Difference from Baseline)

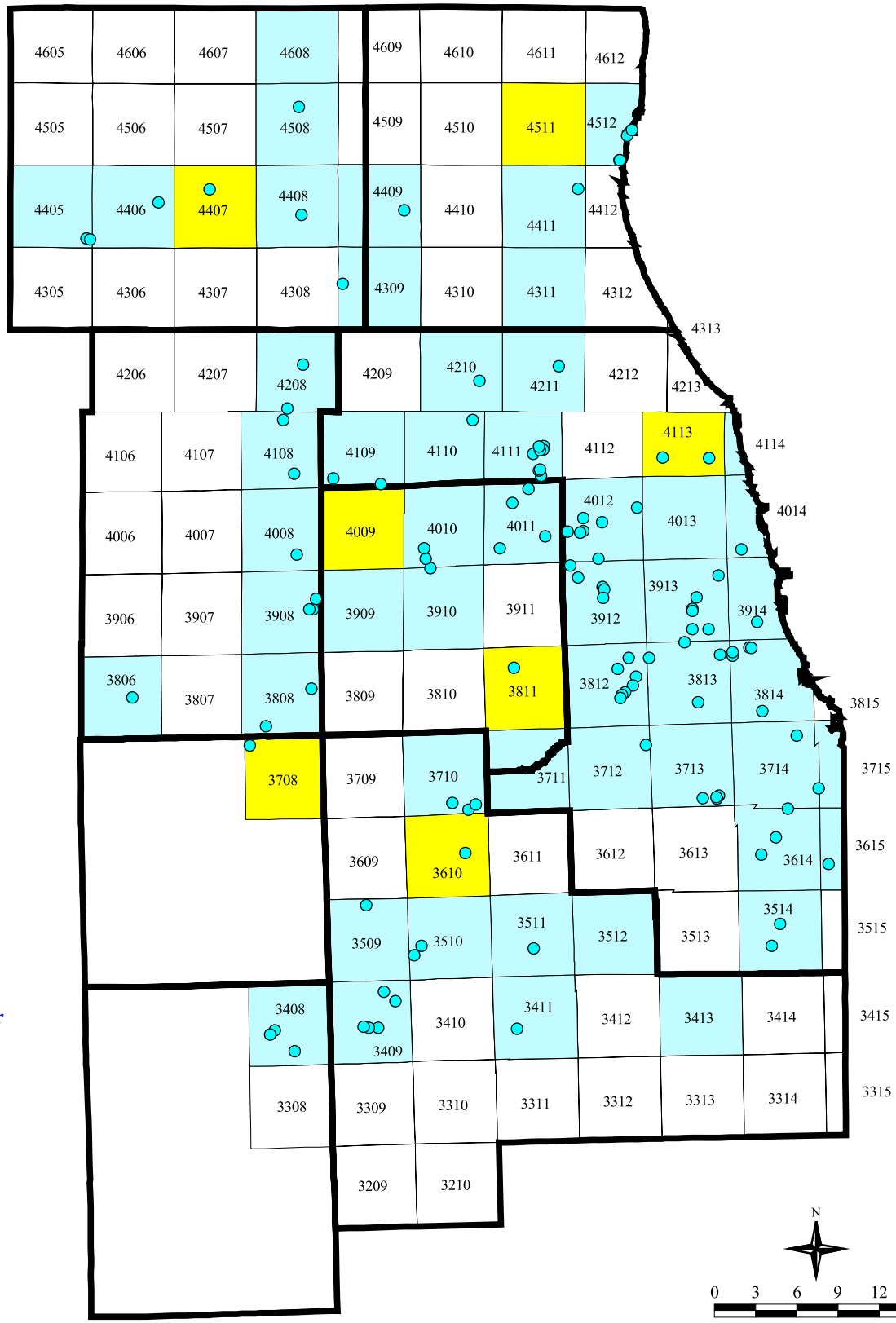


Illinois EPA
Bureau of Air

Legend
- HAP Sources
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-6: VOM HAP Reporting Sources (Difference from Allotment)

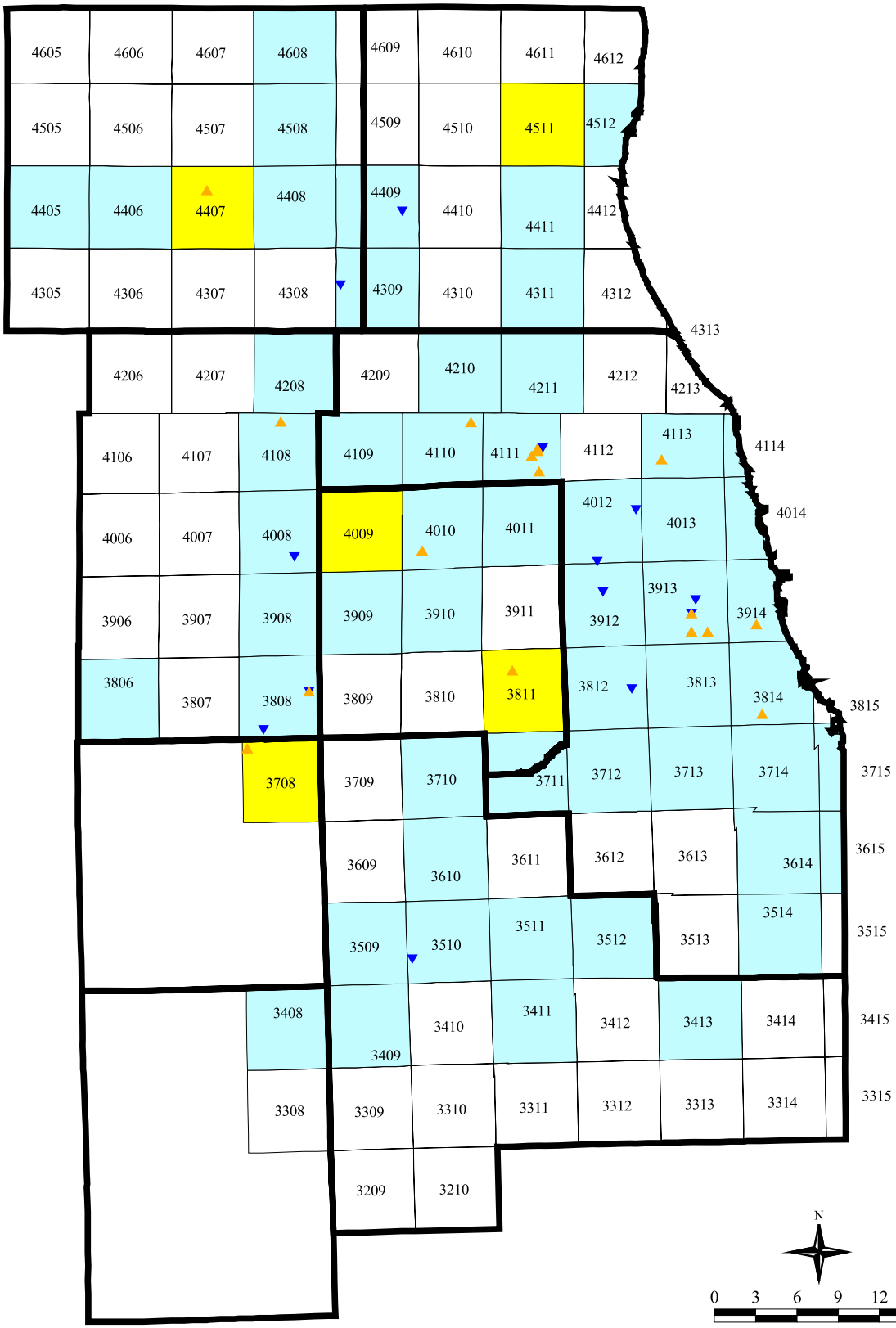


Illinois EPA
Bureau of Air

Legend
- HAP Sources
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-7: Traders with VOM HAP Reporting Sources (Difference from Baseline)

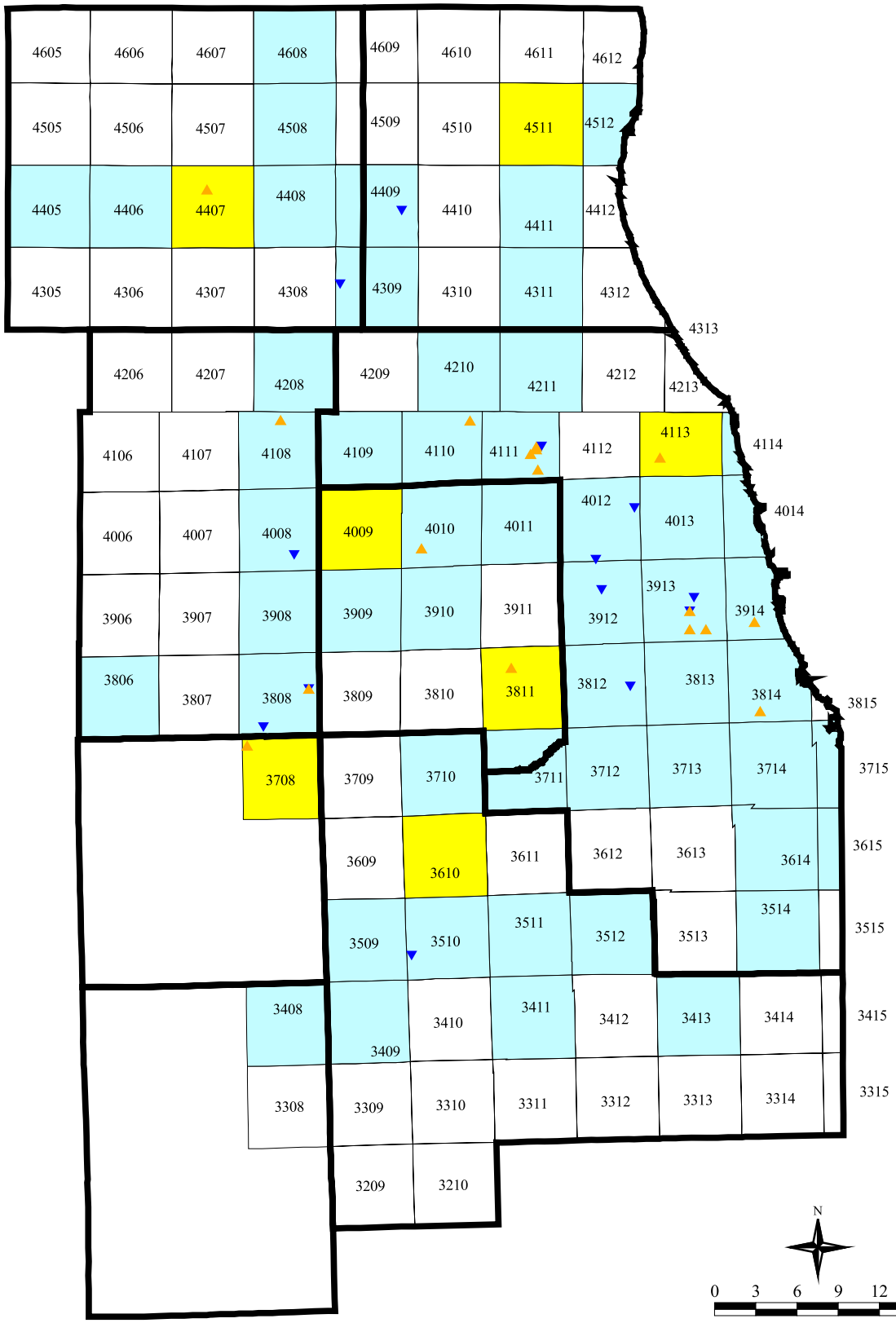


Illinois EPA
Bureau of Air

Legend
- Buyers
- Sellers
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-8: Traders with VOM HAP Reporting Sources (Difference from Allotment)



Illinois EPA
Bureau of Air

Legend
- Buyers
- Sellers
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figures 7-9 and 7-10 compare changes in HAP emissions on both a source and on a township basis. Overall, the majority of ERMS sources, and a majority of the townships, show decreases in VOM HAP emissions and, as mentioned earlier, the entire reported HAP total for ERMS sources decreased.

Illinois EPA also looked at population densities relative to HAP sources to determine if trading activity might be affecting the more densely populated areas. Population densities, rather than actual populations, were used to normalize the emissions as the population might be distributed over a wide area.

Figures 7-11 and 7-12 show the sources which reported HAPs on a map that is color-coded for population density. There is only one higher density area (4113) which also has HAP reporters and emissions above the baseline or allotment level. In this township, two sources reported HAPs. One source increased HAP emissions and another decreased HAP emissions which resulted in a slight increase of HAP emissions.

It should be noted that all of the sources that increased their HAP emissions could have done so without the ERMS program and would have been less restricted in doing so because the ERMS program holds them accountable for those emissions as with any other VOM emissions.

Table 7-14 summarizes the key results from evaluating Figures 7-9 through 7-12.

Table 7-14: Key Results on HAPs for Seven Highlighted Townships

Township	**HAP Source Present?**	**Trading HAP Source?**	**Population Density Level**	**Percent of VOM that are HAPs**
3610 – Lockport	Yes	No	2	7.2
3708 – Oswego	Yes	Yes	1	28.0
3811 – Downer's Grove	Yes	Yes	3	5.0
4009 – Wayne	No	No	3	0.0
4113 – Niles	Yes	Yes	4	3.3
4407 – Dorr	Yes	Yes	1	43.0
4511 – Warren	No	No	2	0.0

7.4 HAP Information Request Letters

Illinois EPA's Annual Emission Report rule allows the gathering of additional HAP information that may not have already been reported for the following three cases:

- Emissions of HAPs increased due to trading
- More than 1,000 pounds of any HAP that was not otherwise required to be reported
- A VOM is replaced with a HAP that is not a VOM

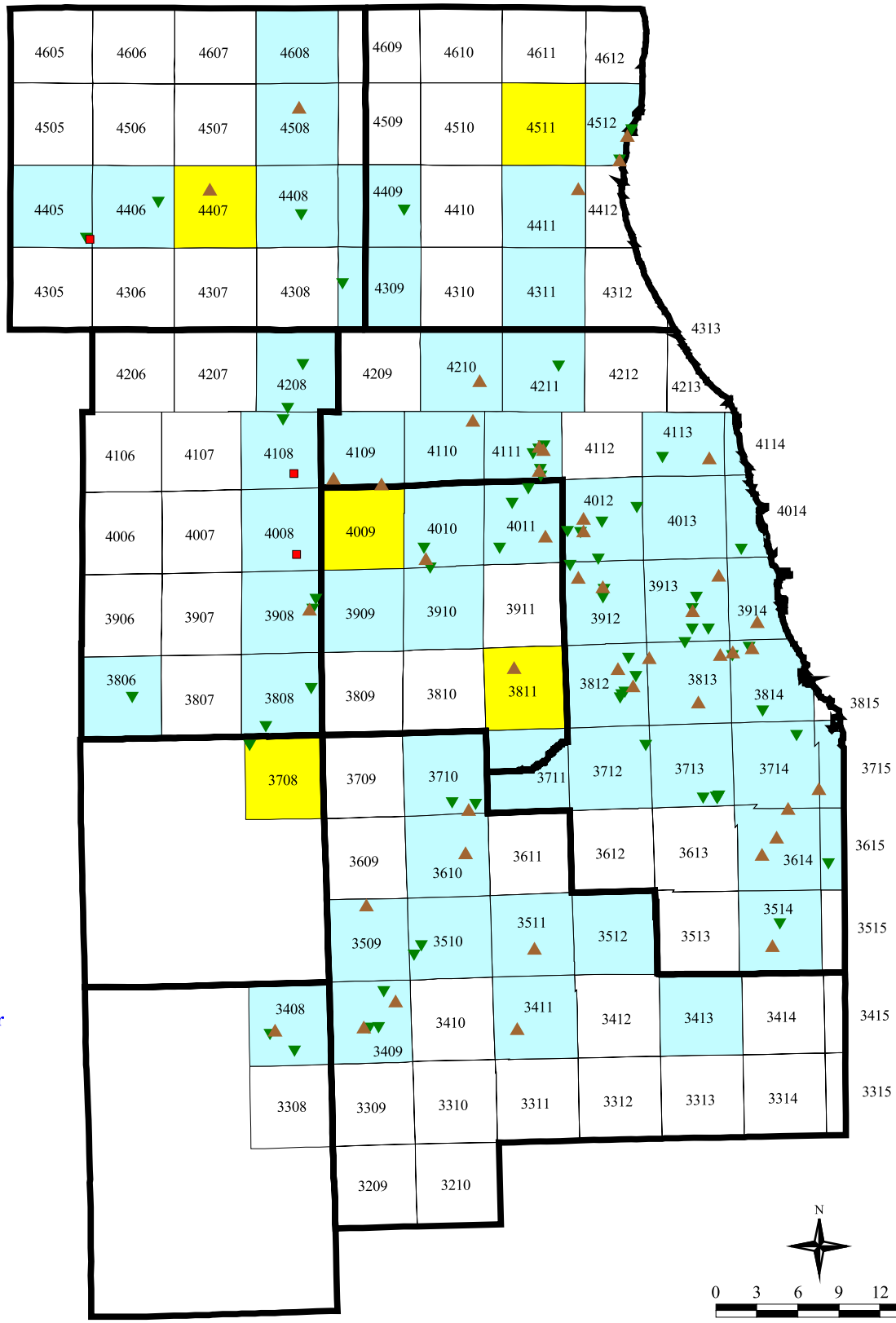
If a source identifies one or more of these cases, the Illinois EPA may send a HAP Information Request Letter. The main goal of acquiring additional information is to ensure the levels set for HAP reporting are adequate to catch any potential problems related to both HAPs and the ERMS program. For the 2006 season, the Illinois EPA did not have cause to send out any such letters.

The Illinois EPA's analysis indicates the ERMS program does not affect changes in HAP emissions. The reporting levels in place within the AER rule are considered to be appropriate.

7.5 Findings

- Overall, the Chicago NAA and each county within the NAA showed emissions that are significantly less than both the baseline and allotment
- No trend is detectable in terms of ATU flow among the counties
- Using a township basis to look more closely at smaller areas shows only five townships (4.2 percent) with emissions higher than their baselines and the seven townships with emissions higher than their allotment.
- Trading does not appear to influence HAP emission levels

Figure 7-9: Change in 2005-2006 Reported HAP Emissions (Difference from Baseline)

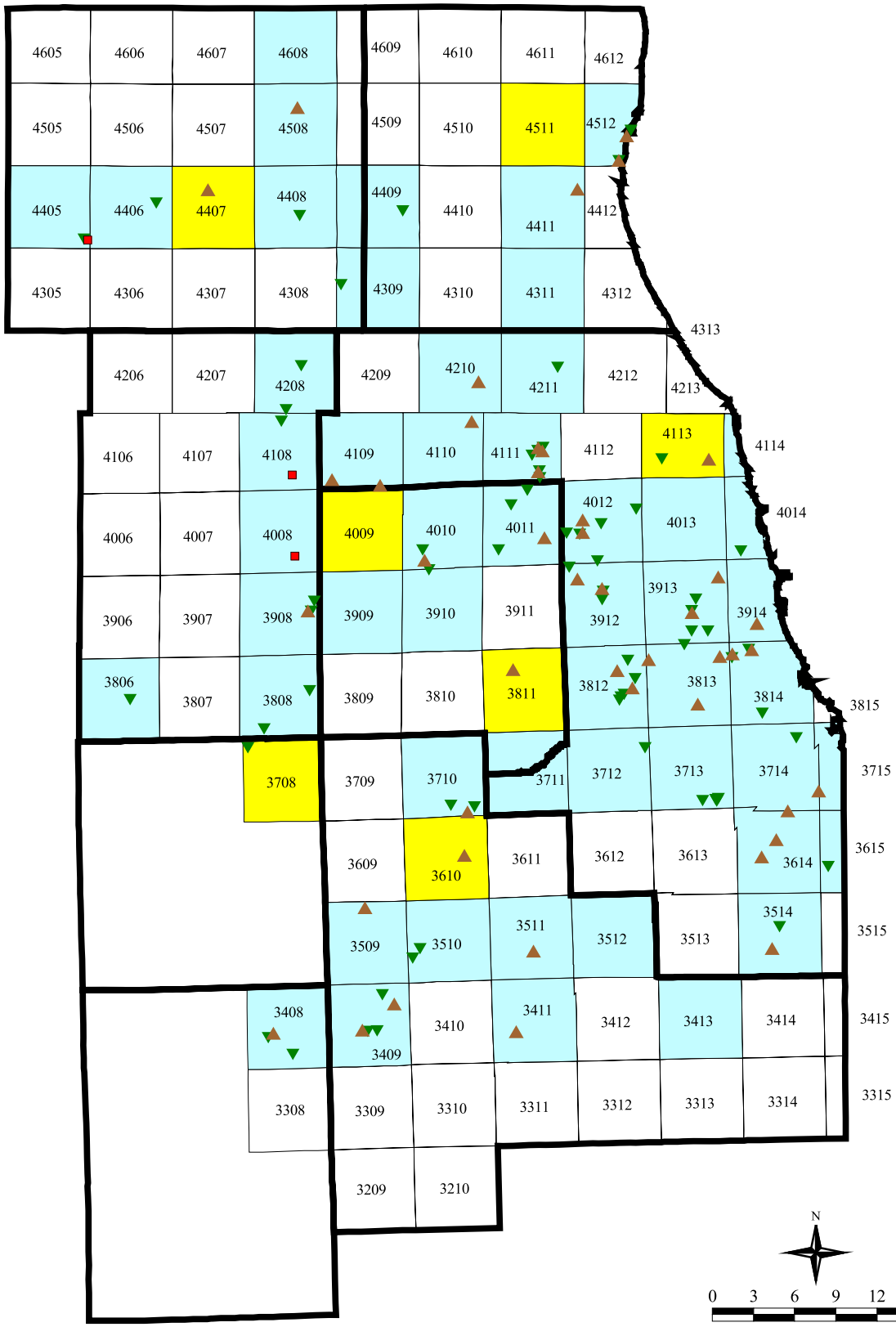


Illinois EPA
Bureau of Air

Legend
- HAP Sources with increases
- HAP Sources with decreases
- HAP Sources with no change
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-10: Change in 2005-2006 Reported HAP Emissions (Difference from Allotment)

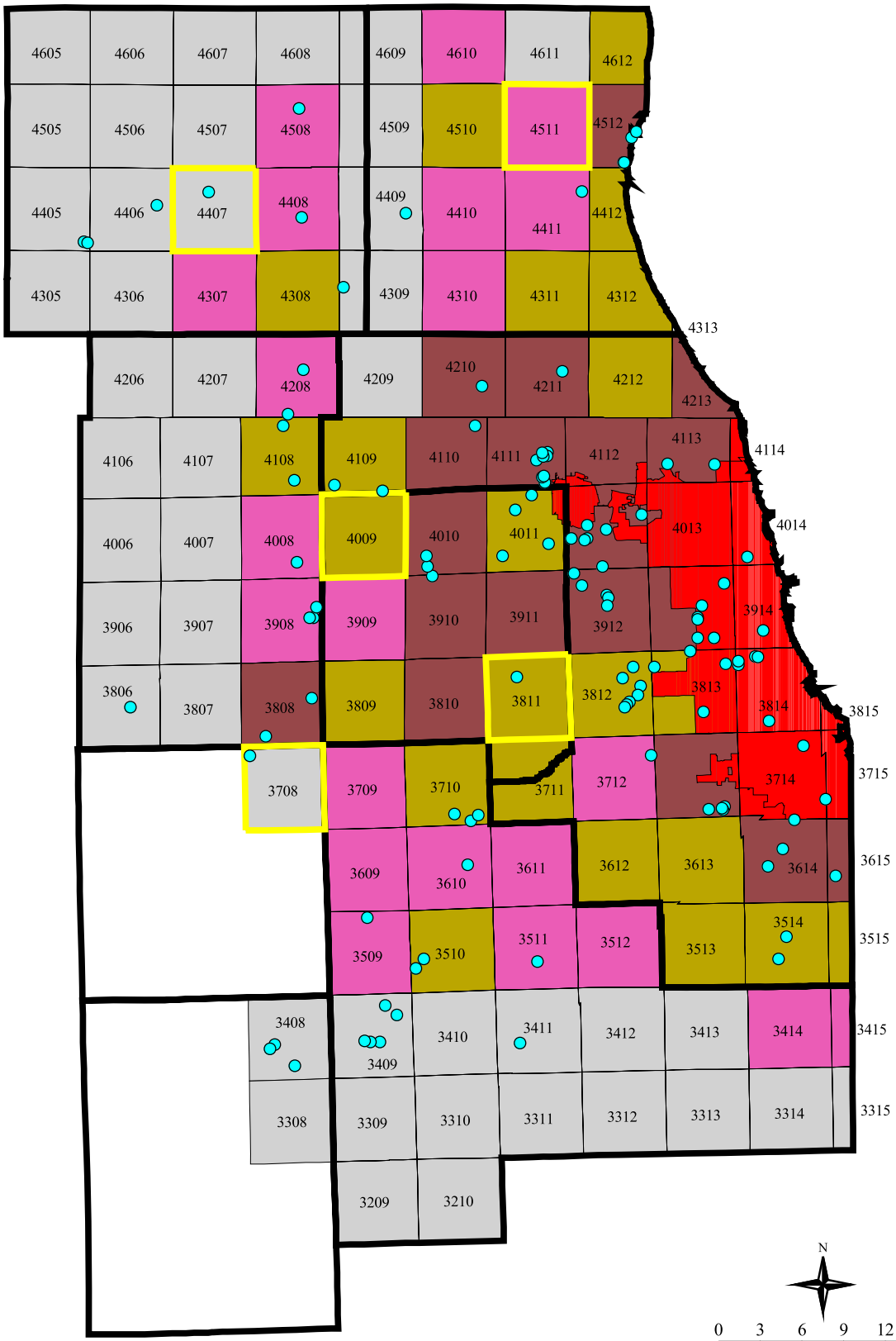


Illinois EPA
Bureau of Air

Legend
- HAP Sources with increases
- HAP Sources with decreases
- HAP Sources with no change
- Difference greater than zero
- Difference less than or equal to zero
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
ERMS Participants compiled by the Illinois EPA.

Figure 7-11: VOM HAP Reporters with Population Density (Difference from Baseline)



Illinois EPA
Bureau of Air

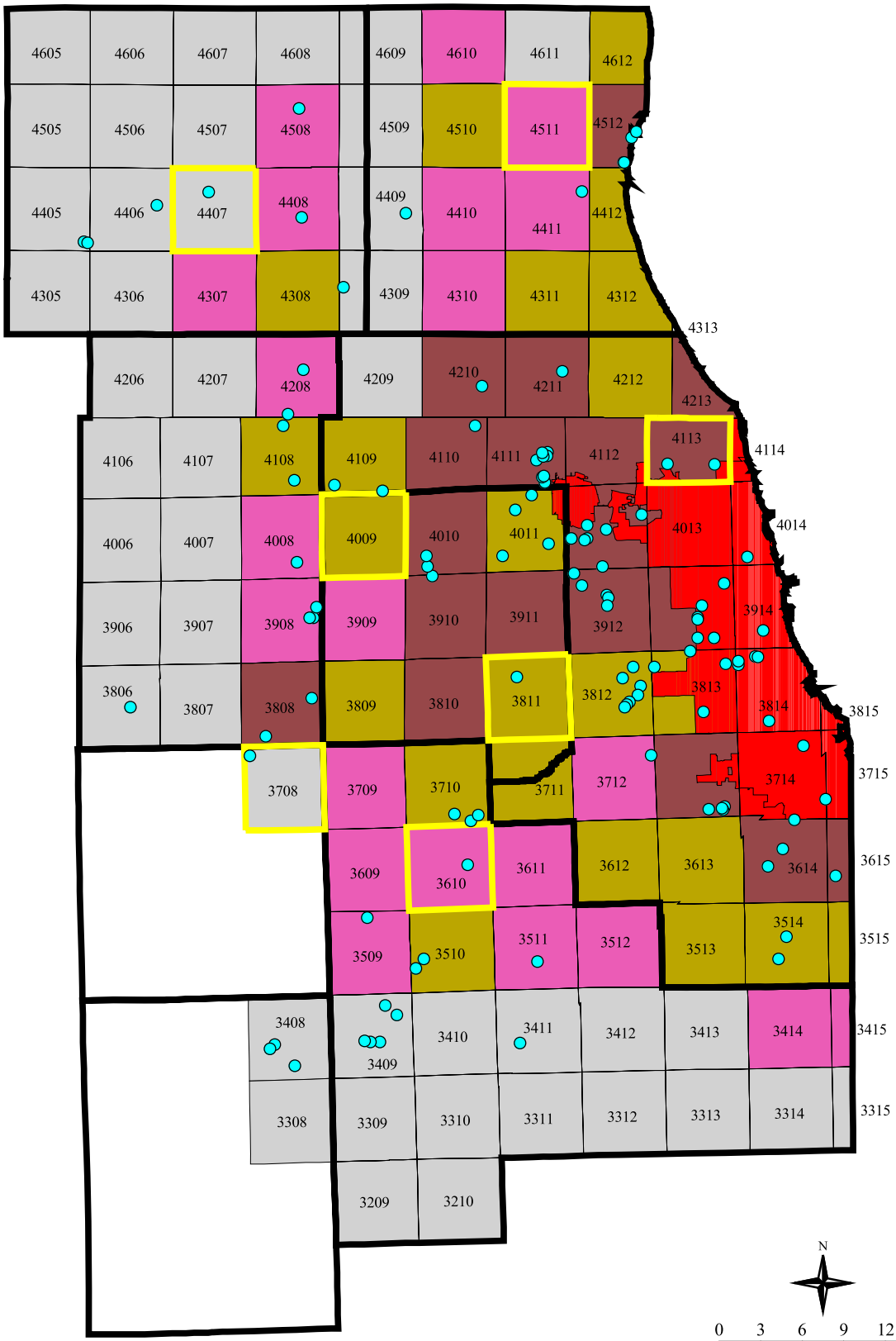
Legend
- HAP Sources
- Difference greater than zero

Township Population Density (People per Square Mile)
1. 18 - 575
2. 575 - 1619
3. 1619 - 3025
4. 3025 - 5059
5. 12803 (City of Chicago)

County Boundaries

Source Information
Population Density derived from year 2000 Census Bureau data.
Townships and County Boundaries obtained from
the Northeastern Illinois Planning Commission (NIPC).
Reporter information compiled by the Illinois EPA.

Figure 7-12: VOM HAP Reporters with Population Density (Difference from Allotment)



Illinois EPA
Bureau of Air

Legend
- HAP Sources
- Difference greater than zero

Township Population Density (People per Square Mile)
1. 18 - 575
2. 575 - 1619
3. 1619 - 3025
4. 3025 - 5059
5. 12803 (City of Chicago)

County Boundaries

Source Information
Population Density derived from year 2000 Census Bureau data.
Townships and County Boundaries obtained from
the Northeastern Illinois Planning Commission (NIPC).
Reporter information compiled by the Illinois EPA.

8 Historical Regional Data

Figure 8-1: Allotment and Compensation by Year

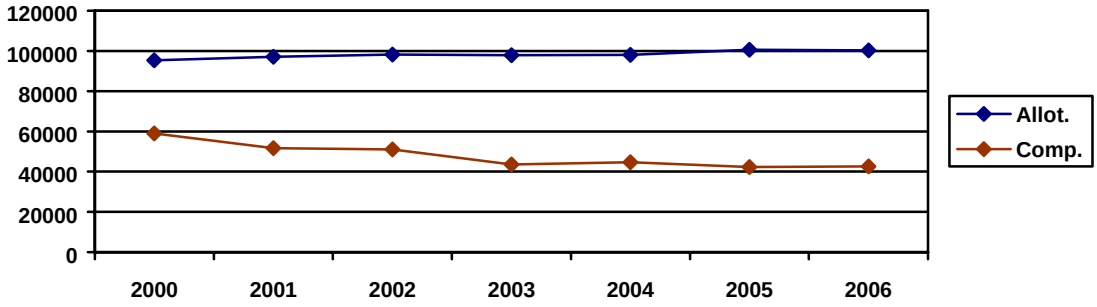


Figure 8-2: Allotment and Expired ATUs by Year

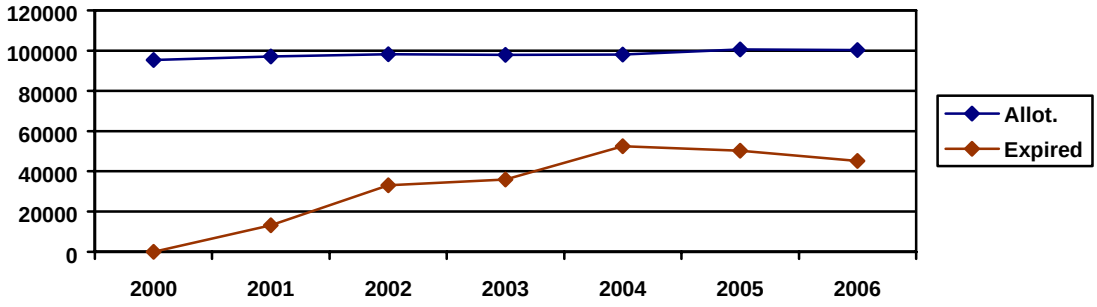


Figure 8-3: Allotment and Retained ATUs by Year

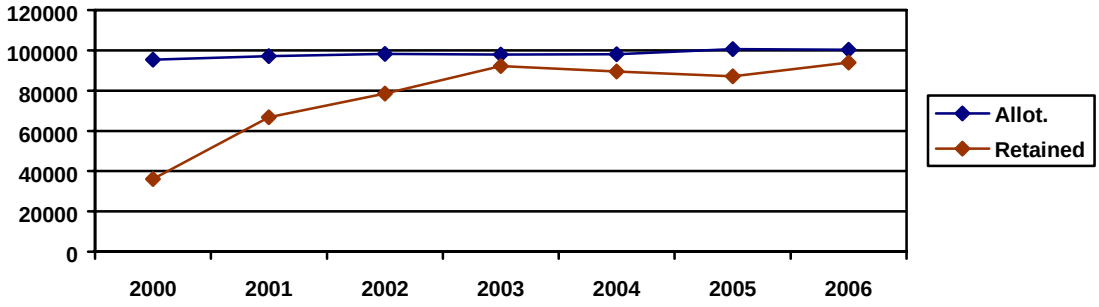


Figure 8-4: Emissions and Reported HAPs (tons)

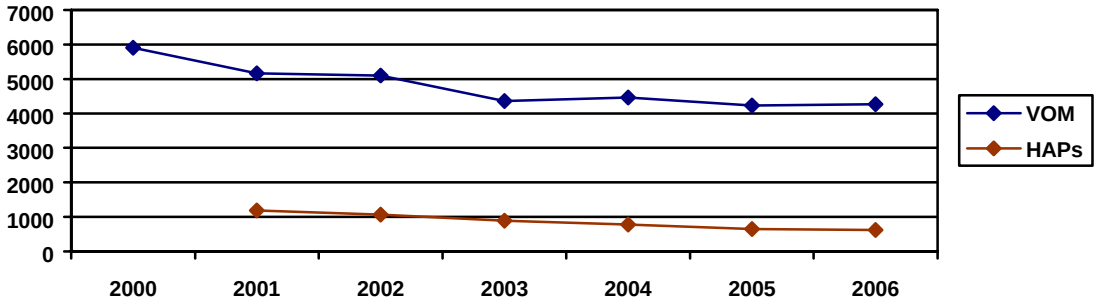


Figure 8-5: Reduction from Baseline and Allotment (%)

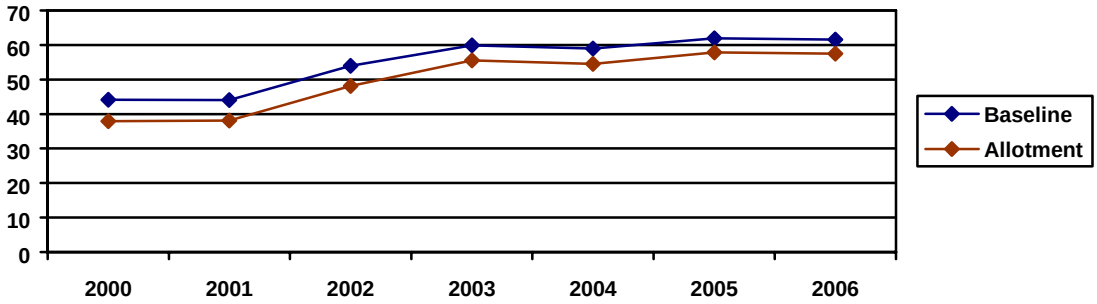
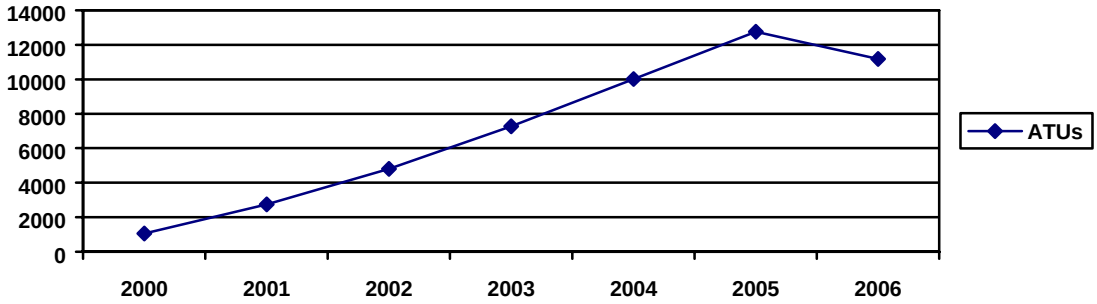


Figure 8-56: ACMA Balance by Year



9 Conclusions

As required by Section 205.760, Illinois EPA has documented the performance of ERMS for the 2006 season and evaluated these data for trends or patterns emerging from the ERMS program. Illinois EPA believes the ERMS program is working as intended and is achieving VOM emission reductions included as part of the State's ozone SIP for Chicago. Illinois EPA's conclusions are:

- **The ERMS program continued to achieve the desired emission reductions.** The allotment shows a 9.5 percent reduction from the original baseline and exceeded the necessary 9 percent reduction for the seventh year in a row. Thus, even if every allotted ATU was used, there would still be a significant reduction from the VOM baseline in the area.

- **ERMS participants are performing significantly below the baseline and allotment levels.** The ERMS program was created to help reduce VOM emissions from the Chicago NAA and to aid in bringing that area into attainment with the NAAQS for ozone. A review of the emission data for ERMS participating sources shows these sources have, as a whole, reduced VOM emissions by a substantial amount compared to their baselines and allotments. Sources emitted 61.5 percent less VOM than their baselines would have allowed them to emit and 57.4 percent less than their actual ATU allotments for 2006. Every county but one within the NAA saw substantial declines, and all but a few townships did as well.

- **The Market System operated in an effective manner.** Sources were able to find trading partners, there was sufficient supply of available ATUs, and market prices were conducive to trading. Alternative ATU generation did not play a role in market performance during the 2006 season. Reconciliation and compensation processes performed as designed.

- **No relationship is apparent between market activity and HAP levels.** This sixth year of HAP reporting by ERMS participants did not indicate trading had any influence on HAP emissions.

Appendix A
***Township Names and Id Numbers**

Township ID	Township Name	County
3209	Custer/Reed	Will
3210	Wesley	Will
3308	Goose Lake	Grundy
3309	Wilmington	Will
3310	Florence	Will
3311	Wilton	Will
3312	Peotone	Will
3313	Will	Will
3314	Washington	Will
3315	Washington - East	Will
3408	Aux Sable	Grundy
3409	Channahon	Will
3410	Jackson	Will
3411	Manhattan	Will
3412	Green Garden	Will
3413	Monee	Will
3414	Crete	Will
3415	Crete - East	Will
3509	Troy	Will
3510	Joliet	Will
3511	New Lennox	Will
3512	Frankfort	Will
3513	Rich	Cook
3514	Bloom	Cook
3515	Bloom - East	Cook
3609	Plainfield	Will
3610	Lockport	Will
3611	Homer	Will
3612	Orland	Cook
3613	Bremen	Cook
3614	Thornton	Cook
3615	Thornton - East	Cook
3708	Oswego	Kendall
3709	Wheatland	Will
3710	DuPage	Will
3711	Lemont	Cook/DuPage
3712	Palos	Cook
3713	Worth	Cook

Township ID	Township Name	County
3714	Calumet	Cook
3715	Chicago - 3715	Cook
3806	Big Rock	Kane
3807	Sugar Grove	Kane
3808	Aurora	Kane
3809	Naperville	DuPage
3810	Lisle	DuPage
3811	Downers Grove	DuPage
3812	Lyons	Cook
3813	Berwyn	Cook
3814	Chicago - 3814	Cook
3815	Chicago - 3815	Cook
3906	Kaneville	Kane
3907	Blackberry	Kane
3908	Batavia/Geneva	Kane
3909	Winfield	DuPage
3910	Milton	DuPage
3911	York	DuPage
3912	Proviso	Cook
3913	Cicero	Cook
3914	Chicago - 3914	Cook
4006	Virgil	Kane
4007	Campton	Kane
4008	St. Charles	Kane
4009	Wayne	DuPage
4010	Bloomingdale	DuPage
4011	Addison	DuPage
4012	Leyden	Cook
4013	Chicago - 4013	Cook
4014	Chicago - 4014	Cook
4106	Burlington	Kane
4107	Plato	Kane
4108	Elgin	Kane
4109	Hanover	Cook
4110	Schaumburg	Cook
4111	Elk Grove	Cook
4112	Maine	Cook
4113	Niles	Cook
4114	Evanston	Cook
4206	Hampshire	Kane
4207	Rutland	Kane
4208	Dundee	Kane

Township ID	Township Name	County
4209	Barrington	Cook
4210	Palatine	Cook
4211	Wheeling	Cook
4212	Northfield	Cook
4213	New Trier	Cook
4305	Riley	McHenry
4306	Coral	McHenry
4307	Grafton	McHenry
4308	Algonquin	McHenry
4309	Cuba	Lake
4310	Ela	Lake
4311	Vernon	Lake
4312	West Deerfield	Lake
4313	Moraine	Lake
4405	Marengo	McHenry
4406	Seneca	McHenry
4407	Dorr	McHenry
4408	Nunda	McHenry
4409	Wauconda	Lake
4410	Fremont	Lake
4411	Libertyville	Lake
4412	Shields	Lake
4505	Dunham	McHenry
4506	Hartland	McHenry
4507	Greenwood	McHenry
4508	McHenry	McHenry
4509	Grant	Lake
4510	Avon	Lake
4511	Warren	Lake
4512	Waukegan	Lake
4605	Chemung	McHenry
4606	Alden	McHenry
4607	Hebron	McHenry
4608	Richmond	McHenry
4609	Burton	McHenry
4610	Antioch	Lake
4611	Newport	Lake
4612	Zion	Lake

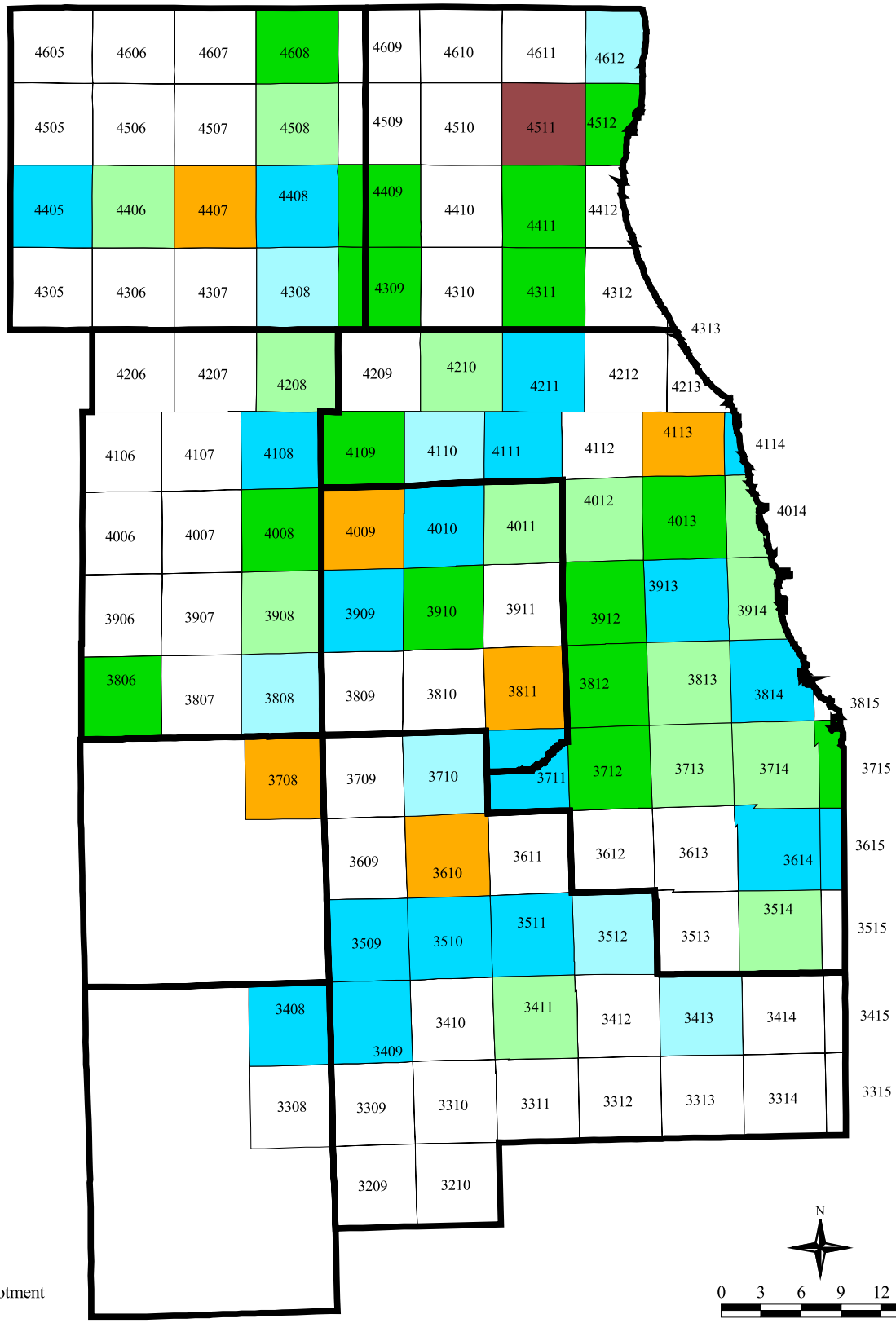
*Since some political townships do not share exact borders with surveyed townships, this table represents Illinois EPA's best correlation.

Appendix B: Township Data

Twp	# of Sources	Baseline (tons)	Allotment (ATUs)	Reported Emissions (tons)	Reported Emissions (ATUs)	ATUs In	ATUs Out	Excur. In (ATUs)	Expired (ATUs)	Available (ATUs)	HAPs (tons)	Diff. from Baseline (%)	Diff. from Allotment (%)
3408	3	509.1	4,623	358.8	3,590	0	0	0	984	4,600	24.1	-29.5	-22.3
3409	8	858.9	7,991	502.01	5,023	0	0	0	3,109	5,783	132.3	-41.6	-37.1
3411	1	48.3	472	12.8	129	0	0	0	343	472	0.5	-73.4	-72.7
3413	1	0.0	0	0.0	0	0	0	0	0	0	0.0	-----	-----
3509	2	36.4	347	25.4	255	0	0	0	104	226	1.7	-30.1	-26.5
3510	2	71.3	629	35.0	351	0	114	0	164	629	4.2	-50.9	-44.2
3511	1	16.8	169	13.1	132	0	0	0	0	123	0.7	-21.9	-21.9
3512	1	120.0	1,200	116.7	1,168	0	0	0	0	599	0.0	-2.7	-2.7
3514	3	193.2	1,721	62.6	628	0	0	0	928	1,581	5.5	-67.6	-63.5
3610	1	16.2	143	15.4	155	0	0	0	0	44	1.1	-5.1	8.4
3614	4	274.4	2,423	135.3	1,355	0	225	0	828	2,411	57.9	-50.7	-44.1
3615	1	23.8	210	15.1	151	0	0	0	59	210	4.0	-36.5	-28.1
3708	1	61.4	542	59.3	593	114	0	0	0	0	7.9	-3.4	9.4
3710	5	295.8	2,851	236.5	2,367	192	0	0	668	2,801	36.7	-20.0	-17.0
3711	1	13.4	118	8.9	90	0	0	0	0	87	0.0	-33.4	-23.7
3712	1	19.5	172	3.8	38	0	0	0	90	172	0.9	-80.7	-77.9
3713	6	350.3	3,243	84.3	845	0	0	0	2,328	3,243	17.0	-75.9	-73.9
3714	4	760.6	6,698	231.1	2,313	221	468	0	4,138	6,230	30.5	-69.6	-65.5
3715	2	63.3	608	0.0	0	0	221	0	321	608	0.0	-100.0	-100.0
3806	1	21.4	188	3.9	40	0	0	0	148	188	0.4	-81.7	-78.7
3808	3	183.2	1,755	162.1	1,622	542	264	0	523	780	3.5	-11.5	-7.6
3811	1	42.9	378	60.1	601	1,733	0	0	0	0	3.0	39.9	59.0
3812	15	2,543.0	22,818	481.7	4,821	470	11,127	0	4,730	22,848	74.2	-81.1	-78.9
3813	12	656.3	5,896	208.6	2,090	0	652	0	2,538	5,061	44.2	-68.2	-64.6
3814	8	336.5	2,981	159.4	1,597	100	0	0	1,216	2,659	11.8	-52.6	-46.4
3908	3	64.4	609	22.4	227	0	0	0	382	609	1.6	-65.2	-62.7
3909	1	18.5	164	12.3	124	0	0	0	59	183	0.0	-33.5	-24.4
3910	1	162.6	1,431	13.5	136	0	0	0	1,295	1,431	0.3	-91.7	-90.5
3912	7	286.3	2,524	50.0	502	0	233	0	1,735	2,505	4.9	-82.5	-80.1
3913	10	302.9	2,672	205.9	2,062	1,029	285	99	1,250	2,614	23.0	-32.0	-22.8
3914	8	296.1	2,647	89.5	898	427	1,016	0	783	1,475	7.5	-69.8	-66.1

Twp	# of Sources	Baseline (tons)	Allotment (ATUs)	Reported Emissions (tons)	Reported Emissions (ATUs)	ATUs In	ATUs Out	Excur. In (ATUs)	Expired (ATUs)	Available (ATUs)	HAPs (tons)	Diff. from Baseline (%)	Diff. from Allotment (%)
4008	2	47.6	420	10.1	101		192		120	420	2.5	-78.8	-76.0
4009	1	16.4	145	17.7	178	8			0	0	0.0	8.1	22.8
4010	2	70.0	617	48.7	488	80			209	697	25.0	-30.4	-20.9
4011	6	160.0	1,434	54.0	543	54			945	1,434	2.7	-66.2	-62.1
4012	10	281.4	2,518	72.0	724		511		1,063	1,934	17.9	-74.4	-71.2
4013	4	187.3	1,651	26.2	264	113	1,313		149	239	0.0	-86.0	-84.0
4014	1	28.9	281	10.8	109				172	281	0.8	-62.5	-61.2
4108	3	90.3	834	54.9	550	80			145	750	1.1	-39.1	-34.1
4109	2	204.9	1,932	37.0	372				1,560	1,932	15.5	-81.9	-80.7
4110	2	34.0	300	25.0	251	50	80		0	10	0.6	-26.4	-16.3
4111	13	458.6	4,040	247.7	2,482	391	2		2,505	3,509	13.5	-46.0	-38.6
4113	4	39.4	350	41.5	417	217			109	246	1.4	5.2	19.1
4114	1	23.0	220	11.3	113	130			237	220	0.0	-51.0	-48.6
4208	3	68.3	603	16.9	173		30		400	603	3.7	-75.3	-71.3
4210	1	24.4	243	11.8	118				125	243	11.7	-51.8	-51.4
4211	1	24.8	219	16.1	161				58	219	0.6	-35.3	-26.5
4308	1	10.0	88	0.0	0		88		0	0	0.0	-100.0	-100.0
4309	1	37.6	332	1.3	13		200		119	332	0.0	-96.6	-96.1
4311	2	15.8	139	3.1	31				108	139	0.0	-80.4	-77.7
4405	2	48.8	430	23.3	234				73	426	0.3	-52.2	-45.6
4406	1	22.4	225	6.8	68				157	225	0.0	-69.7	-69.8
4407	1	7.4	74	13.5	136	88			0	127	5.8	84.3	83.8
4408	1	16.2	157	8.1	82				75	157	0.4	-49.9	-47.8
4409	2	37.5	331	1.2	12		443		0	3	0.6	-96.9	-96.4
4411	2	60.5	538	9.7	98				440	538	0.8	-84.0	-81.8
4508	1	52.6	464	12.9	129				335	464	5.5	-75.5	-72.2
4511	1	24.3	214	46.9	470	256			0	23	0.0	93.4	119.6
4512	5	315.0	3,048	46.3	465				2,547	3,029	9.1	-85.3	-84.7
4608	1	12.6	111	2.2	22				89	111	0.0	-82.7	-80.2
4612	1	20.6	182	0.0	0				146	182	0.0	-100.0	-100.0

Figure B-1: Actual Emissions Compared to Allotment



Illinois EPA
Bureau of Air

Legend
Percent Reduction from Allotment
- -100 to -75
- -75 to -50
- -50 to -20
- -20 to 0
- 0 to 84 (percent increase)
- 120 (percent increase)
- Townships
- County Boundaries

Source Information
Townships and County Boundaries obtained from the Northeastern Illinois Planning Commission (NIPC).
Emissions information compiled by the Illinois EPA.

Appendix C Historical County Data

C.1 Allotments and Compensation

Figure C-1: Cook County Allotment and Compensation

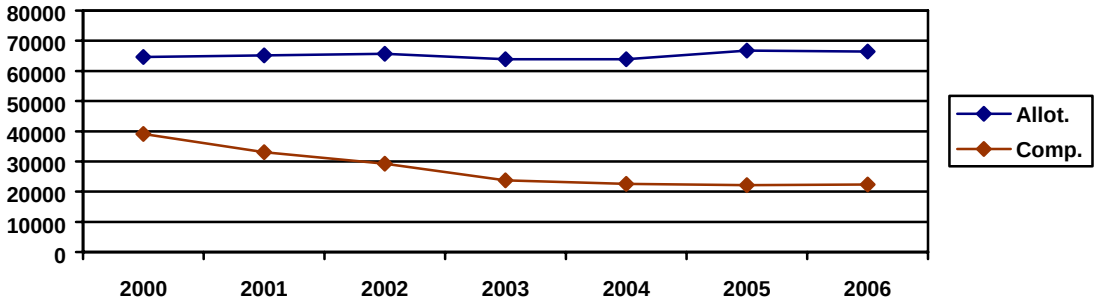


Figure C-2: DuPage County Allotment and Compensation

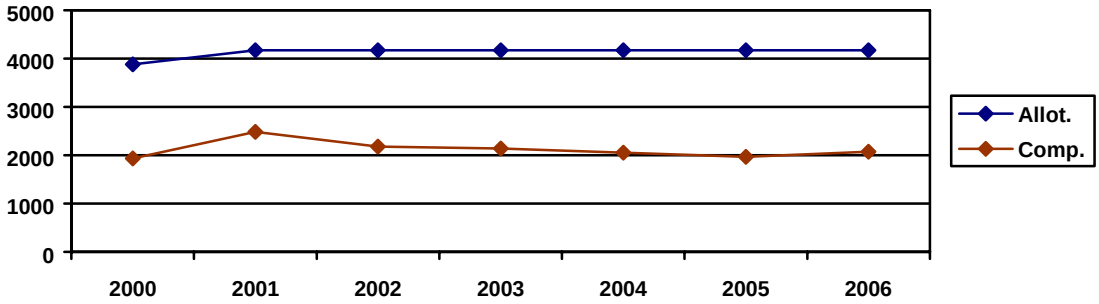


Figure C-3: Grundy County Allotment and Compensation

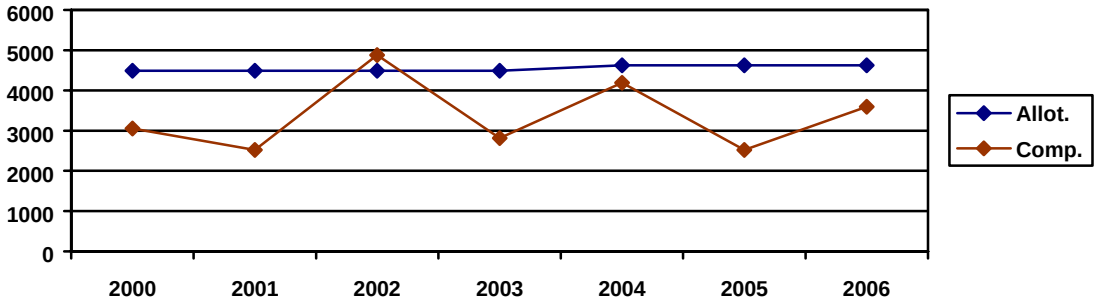


Figure C-4: Kane County Allotment and Compensation

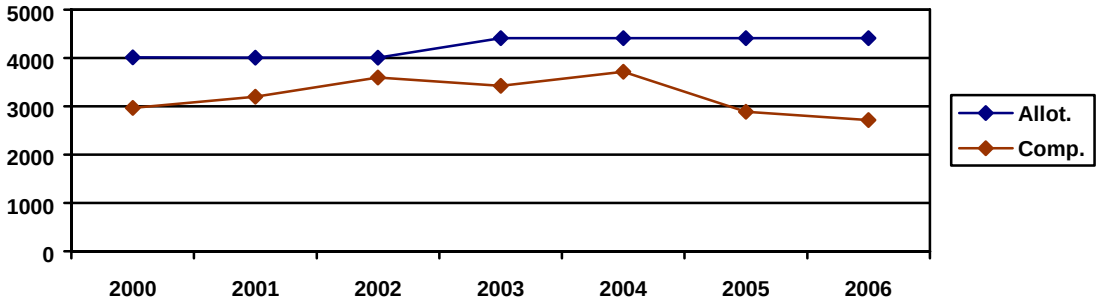


Figure C-5: Kendall County Allotment and Compensation

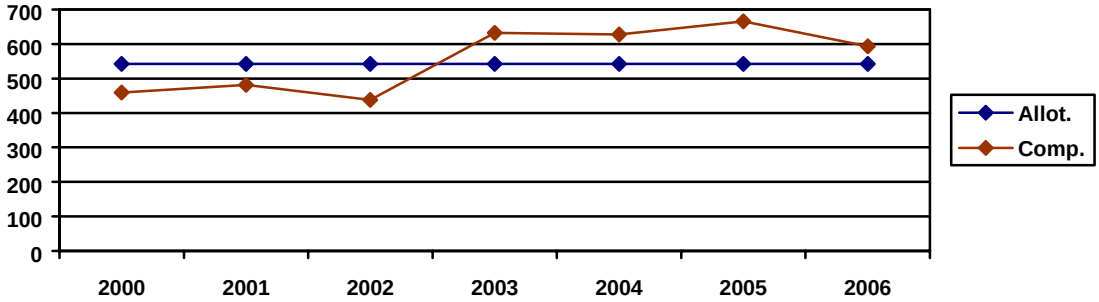


Figure C-6: Lake County Allotment and Compensation

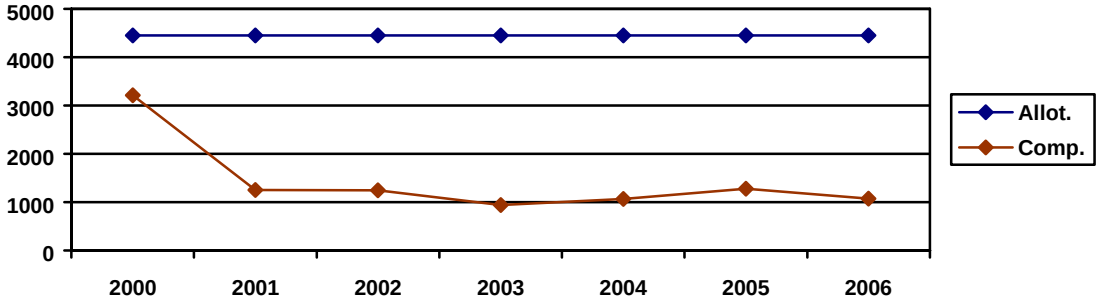


Figure C-7: McHenry County Allotment and Compensation

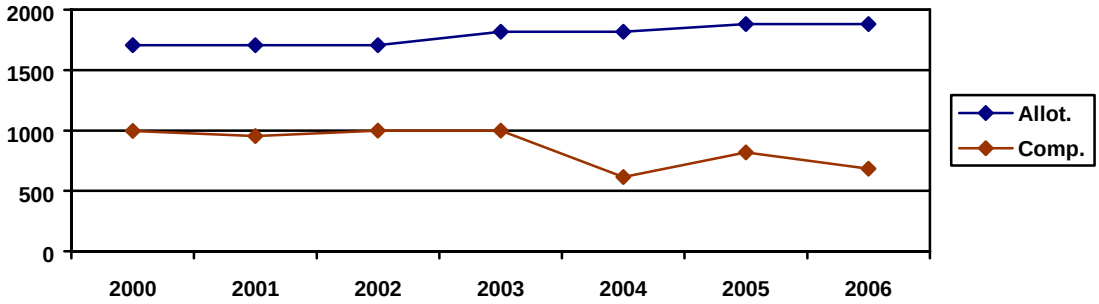
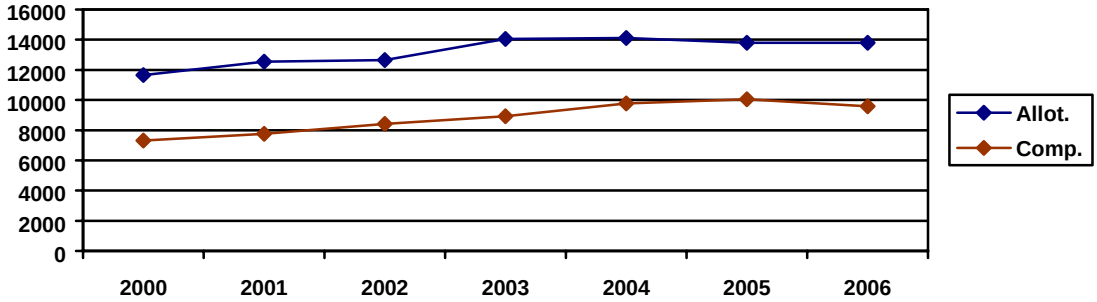


Figure C-8: Will County Allotment and Compensation



C.2 Allotments and Retained ATUs

Figure C-9: Cook County Allotment and Retained ATUs

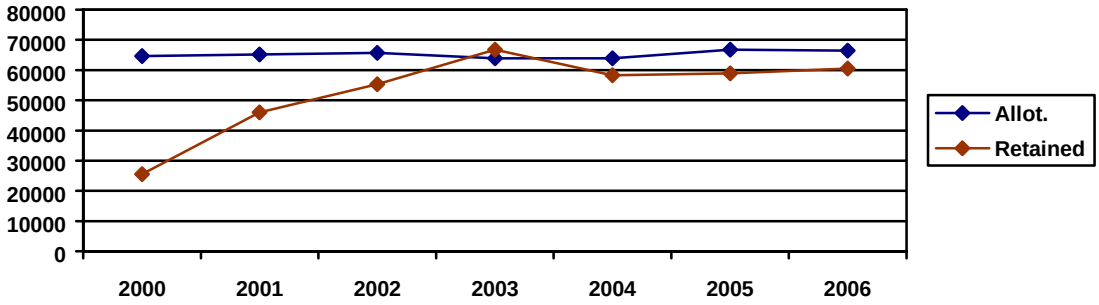


Figure C-10: DuPage County Allotment and Retained ATUs

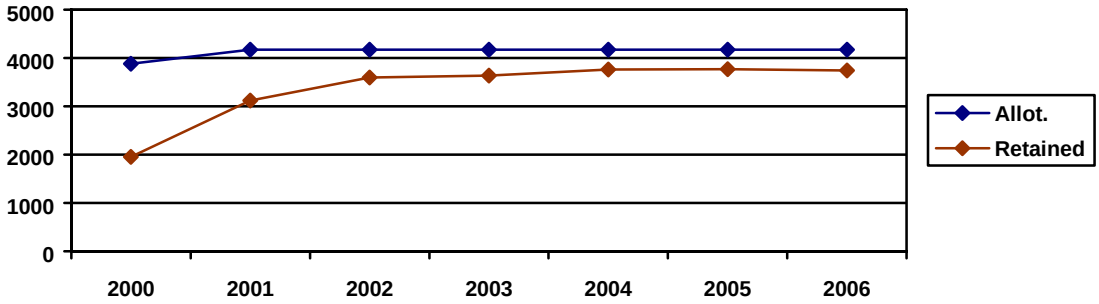


Figure C-11: Grundy County Allotment and Retained ATUs

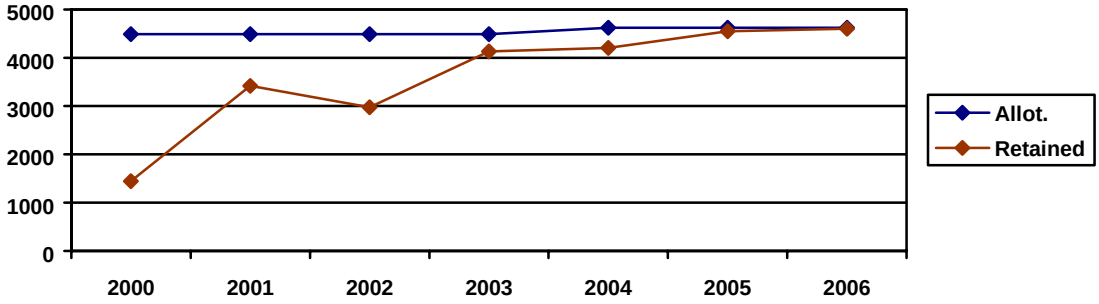


Figure C-12: Kane County Allotment and Retained ATUs

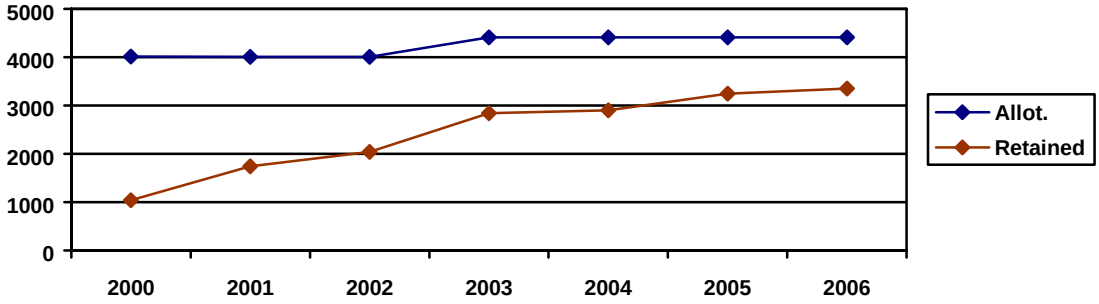


Figure C-13: Kendall County Allotment and Retained ATUs

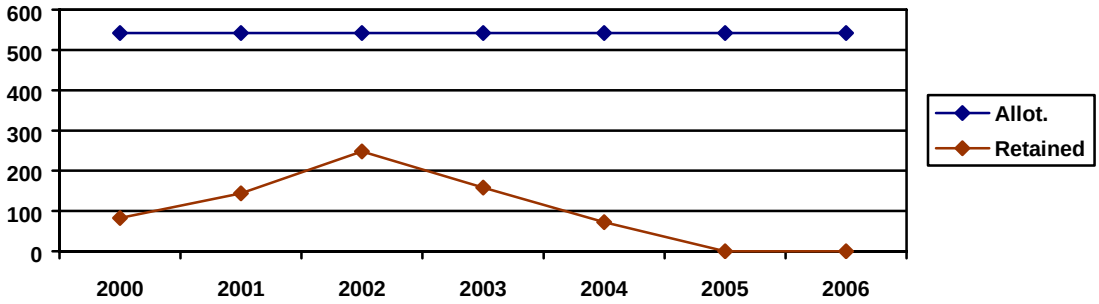


Figure C-14: Lake County Allotment and Retained ATUs

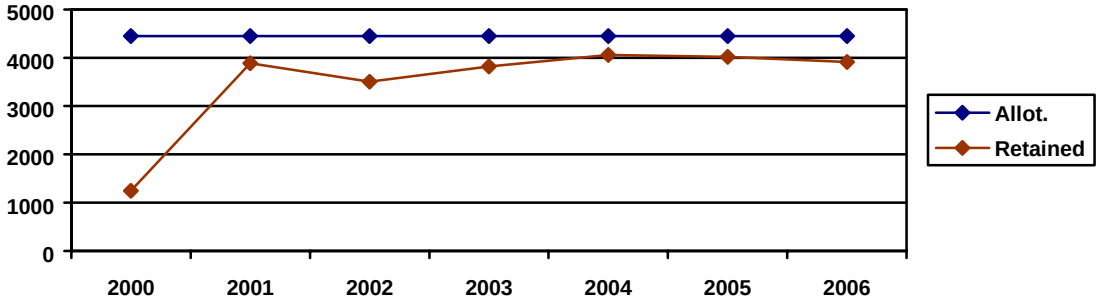


Figure C-15: McHenry County Allotment and Retained ATUs

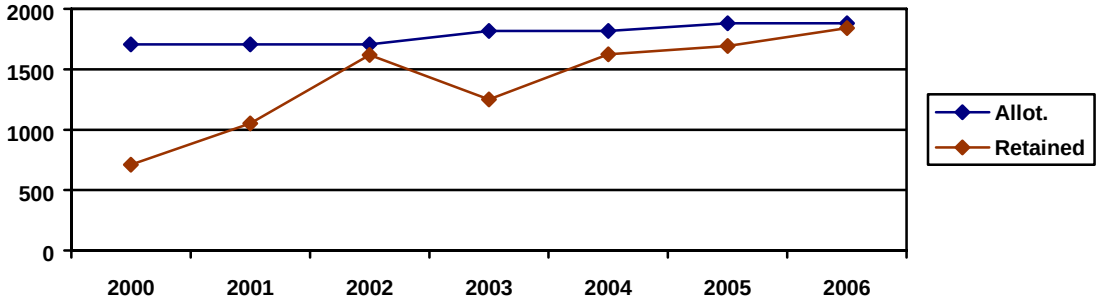
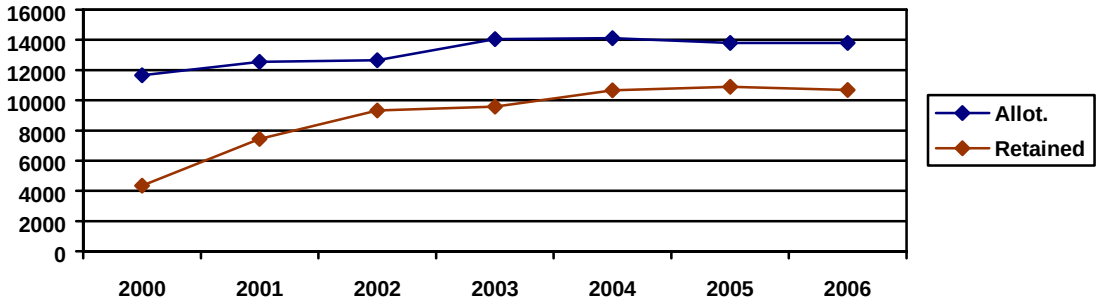


Figure C-16: Will County Allotment and Retained ATUs



C.3 Allotments and Expired ATUs

Figure C-17: Cook County Allotment and Expired ATUs

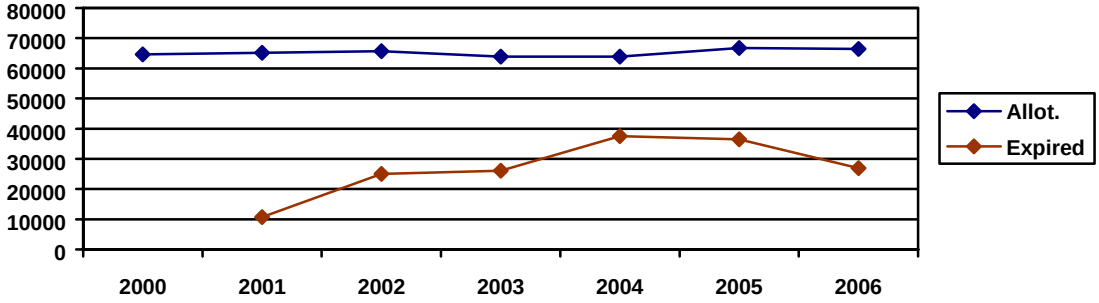


Figure C-18: DuPage County Allotment and Expired ATUs

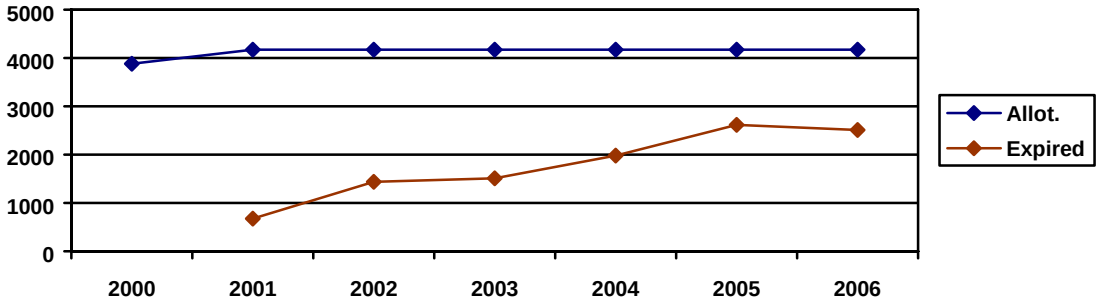


Figure C-19: Grundy County Allotment and Expired ATUs

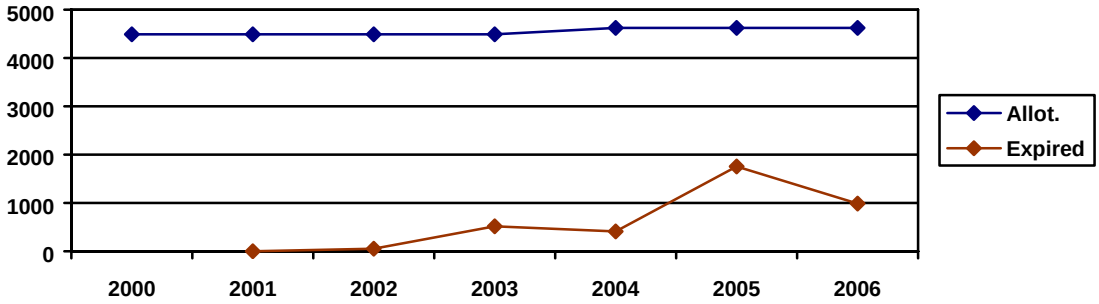


Figure C-20: Kane County Allotment and Expired ATUs

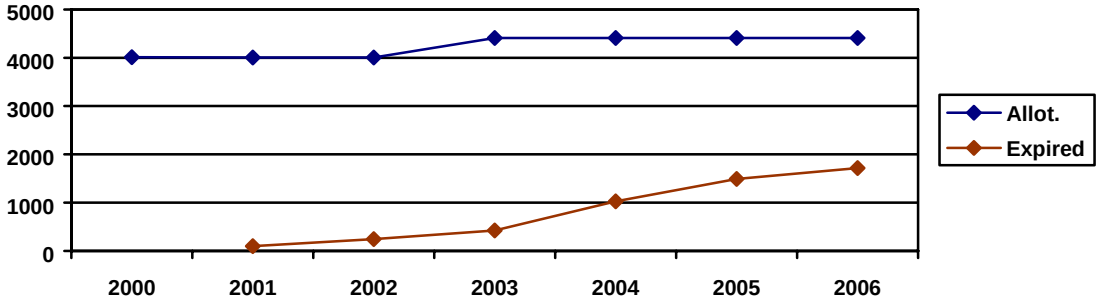


Figure C-21: Kendall County Allotment and Expired ATUs

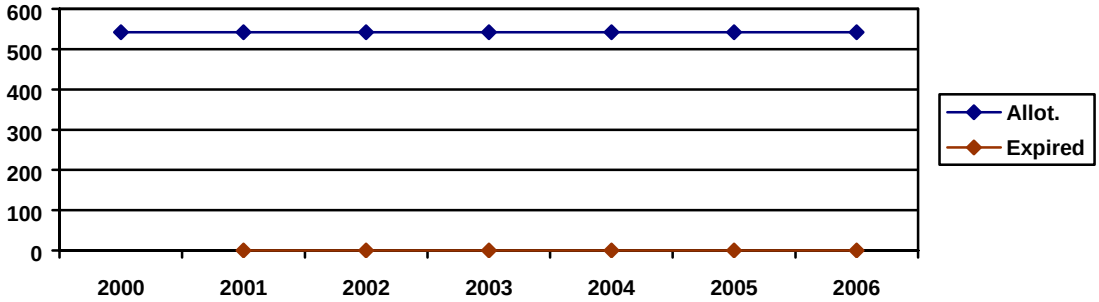


Figure C-22: Lake County Allotment and Expired ATUs

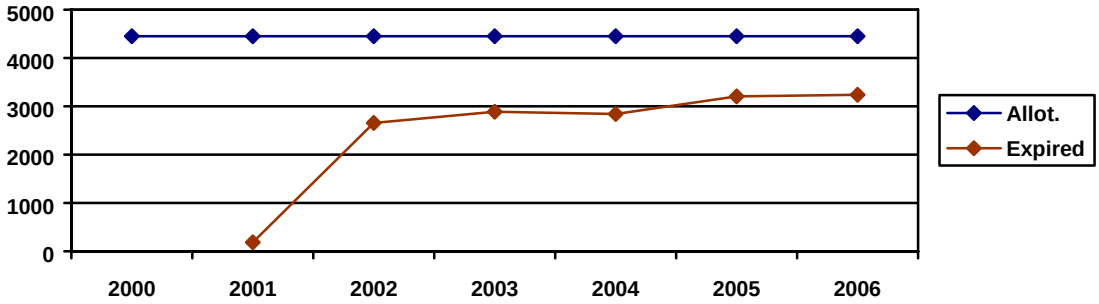


Figure C-23: McHenry County Allotment and Expired ATUs

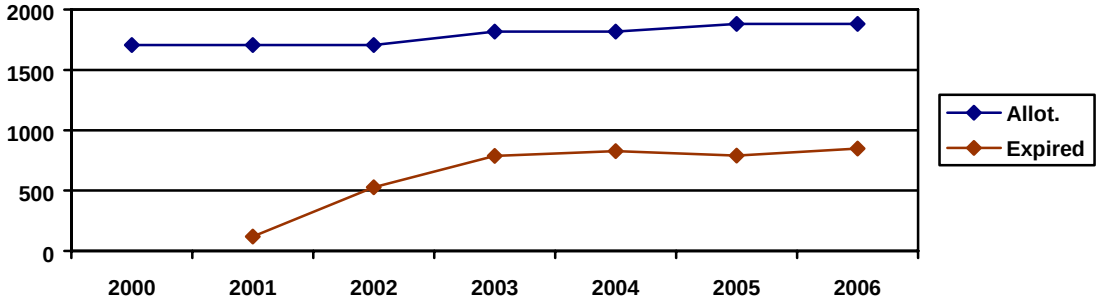
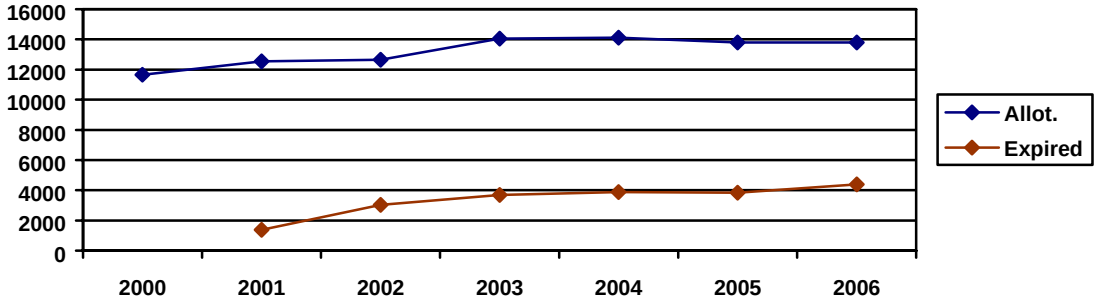


Figure C-24: Will County Allotment and Expired ATUs



C.4 Net ATUs Traded

Figure C-25: Cook County Net Traded ATUs

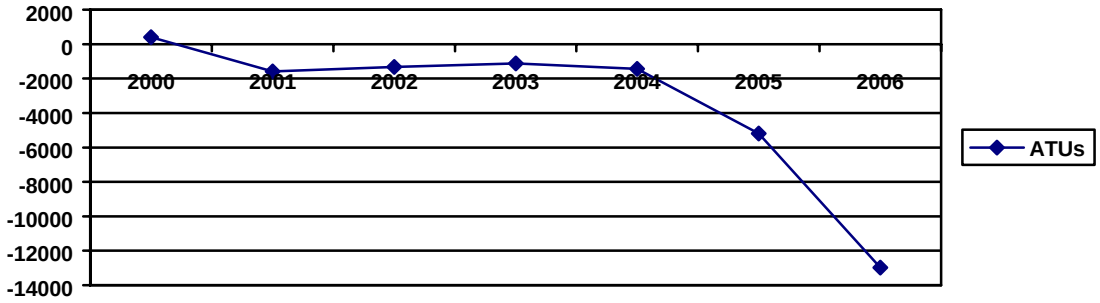


Figure C-26: DuPage County Net Traded ATUs

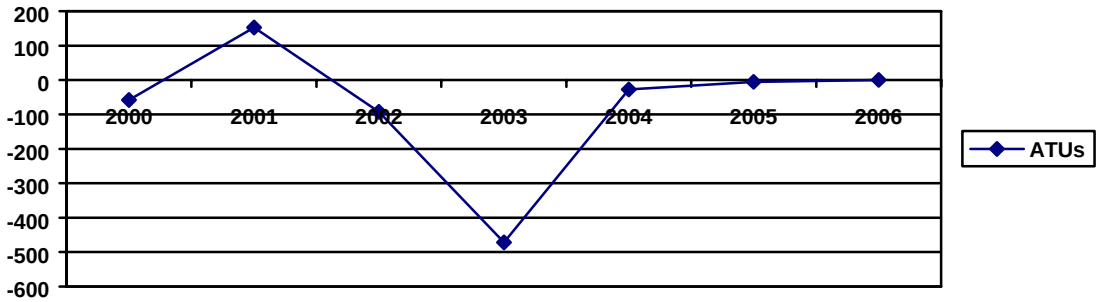


Figure C-27: Grundy County Net Traded ATUs

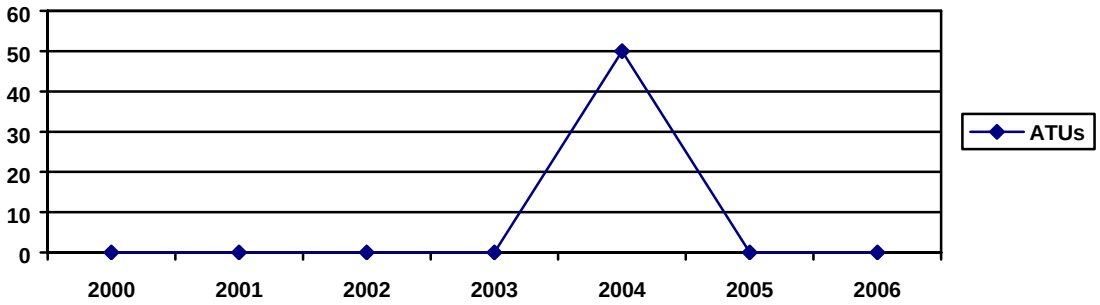


Figure C-28: Kane County Net Traded ATUs

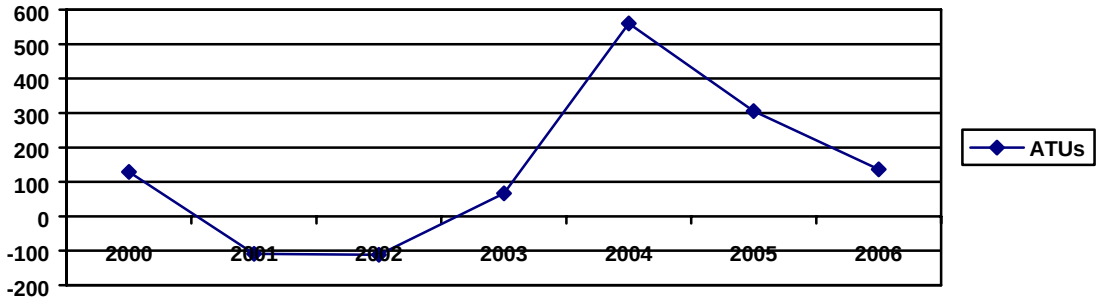


Figure C-29: Kendall County Net Traded ATUs

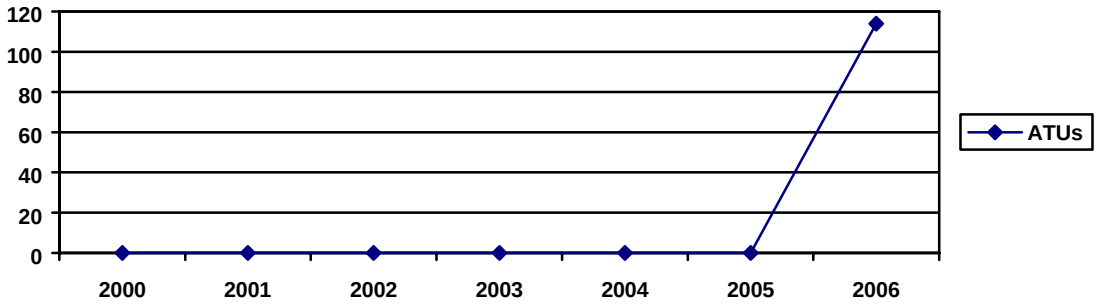


Figure C-30: Lake County Net Traded ATUs

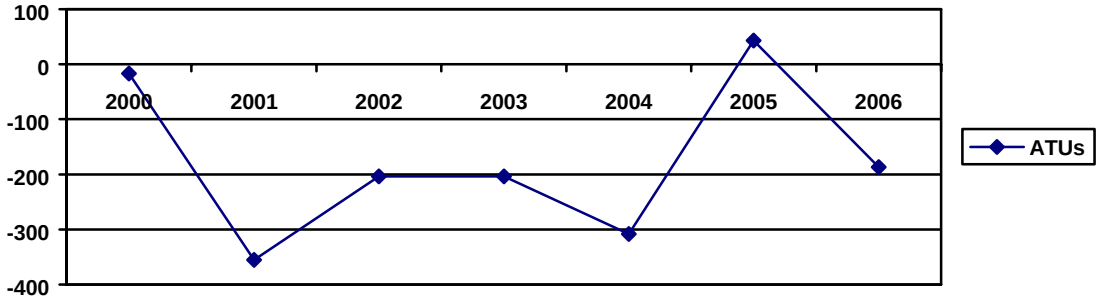


Figure C-31: McHenry County Net Traded ATUs

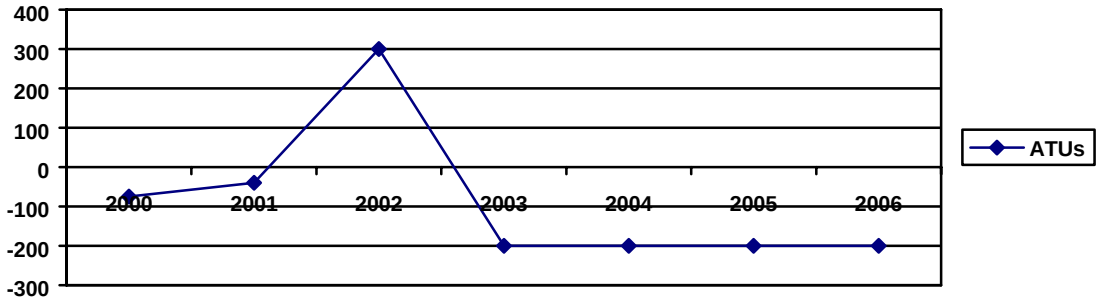
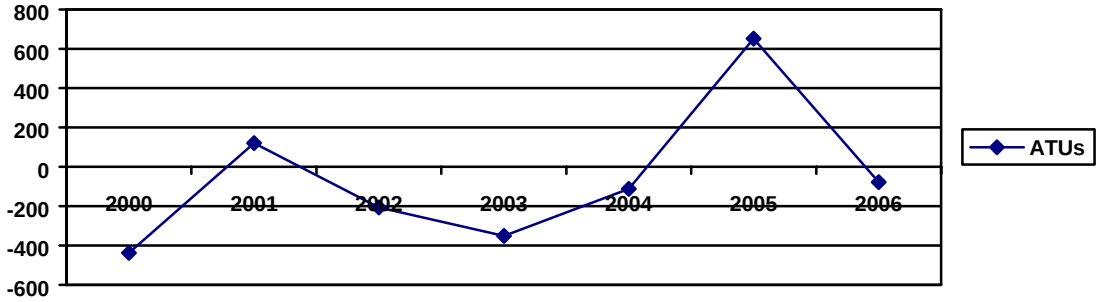


Figure C-32: Will County Net Traded ATUs



C.5 VOM Emissions and Reported HAPs

Figure C-33: Cook County Emissions and Reported HAPs (tons)

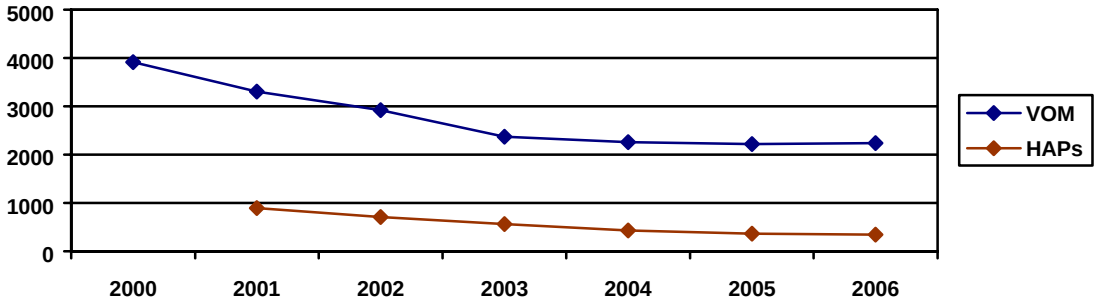


Figure C-34: DuPage County Emissions and Reported HAPs (tons)

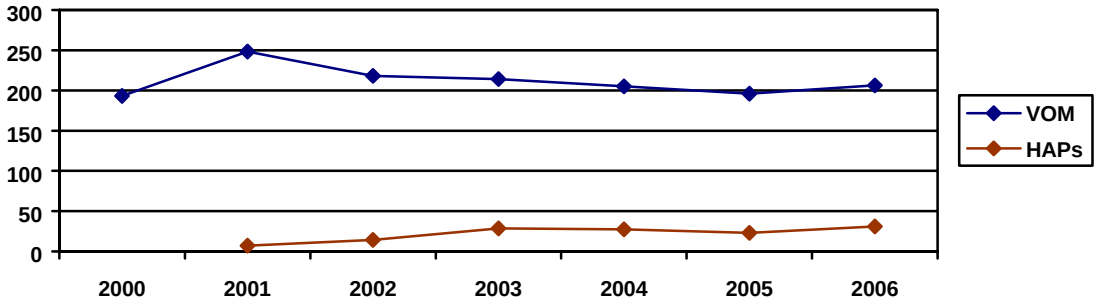


Figure C-35: Grundy County Emissions and Reported HAPs (tons)

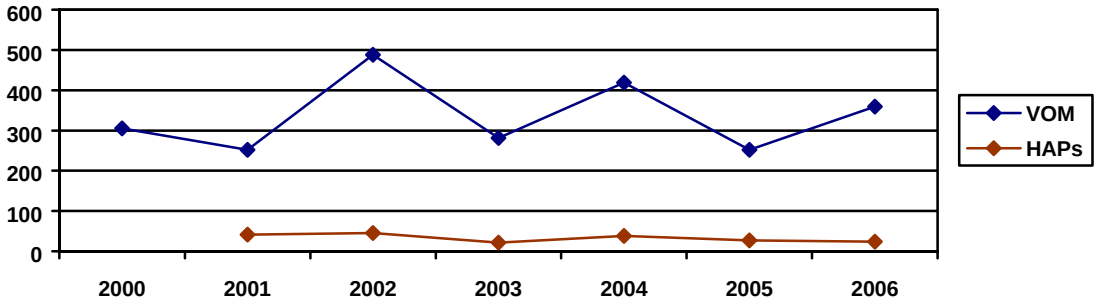


Figure C-36: Kane County Emissions and Reported HAPs (tons)

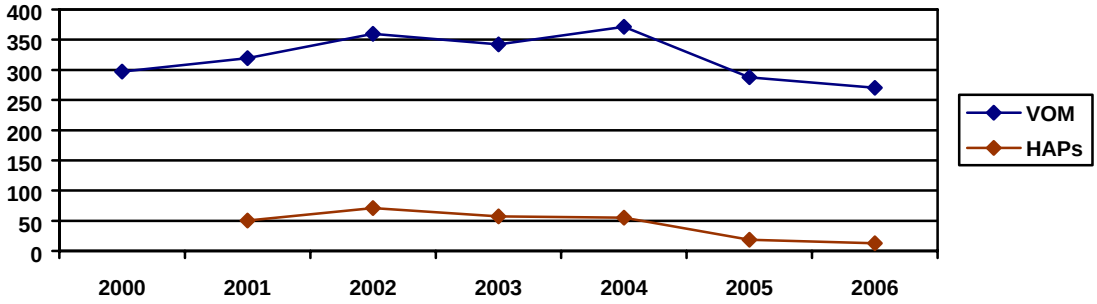


Figure C-37: Kendall County Emissions and Reported HAPs (tons)

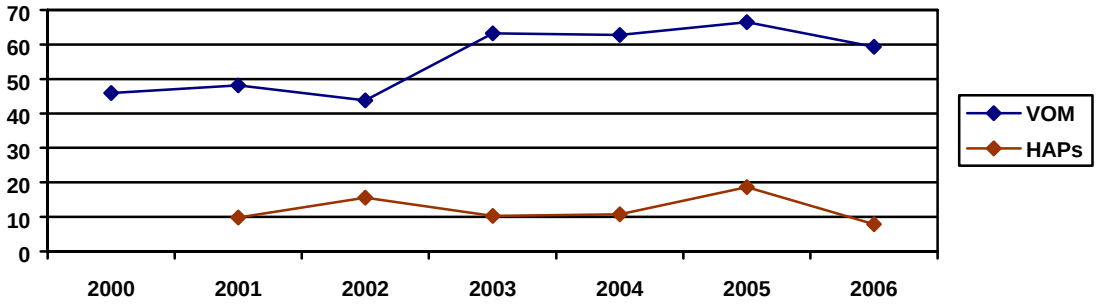


Figure C-38: Lake County Emissions and Reported HAPs (tons)

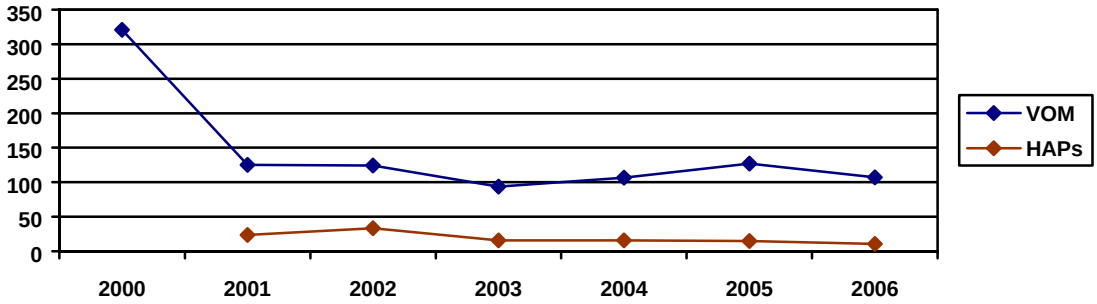


Figure C-39: McHenry County Emissions and Reported HAPs (tons)

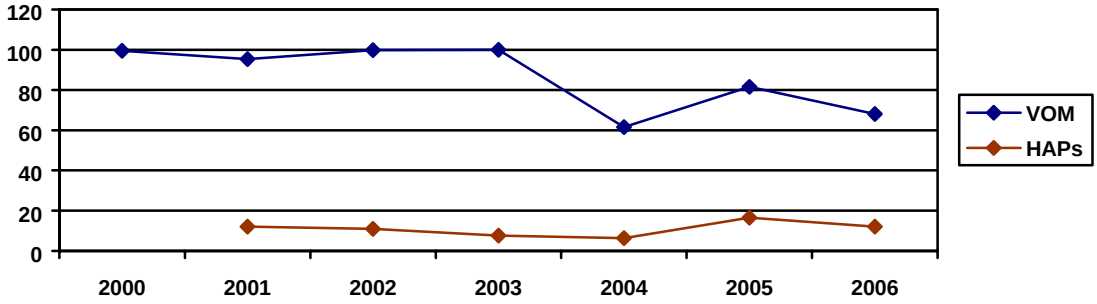
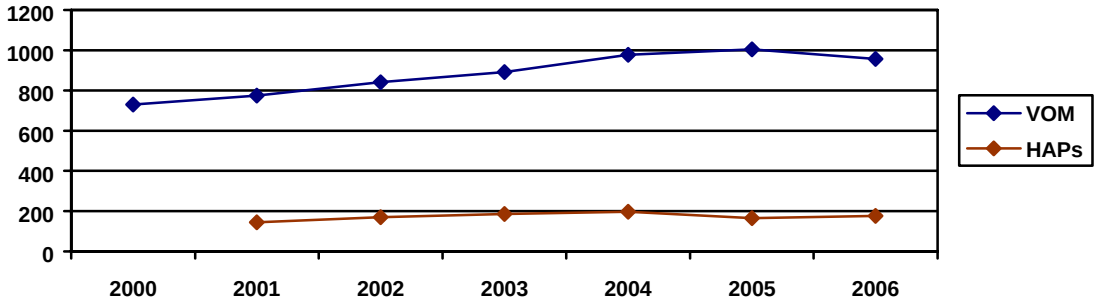


Figure C-40: Will County Emissions and Reported HAPs (tons)



C.6 Reduction from Baseline and Allotment

Figure C-41: Cook County Reduction from Baseline and Allotment (%)

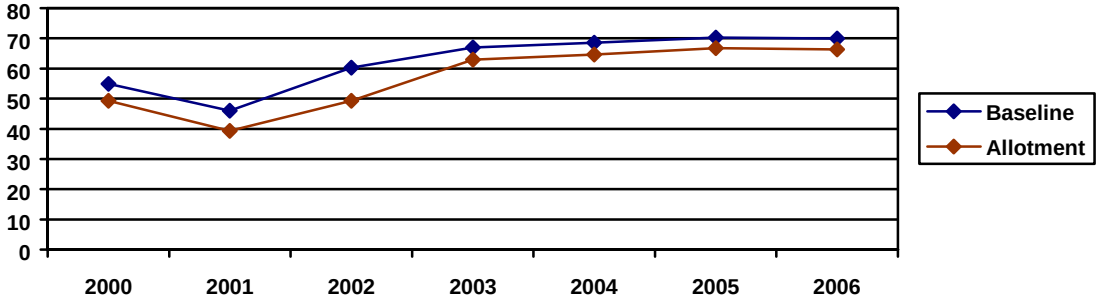


Figure C-42: DuPage County Reduction from Baseline and Allotment (%)

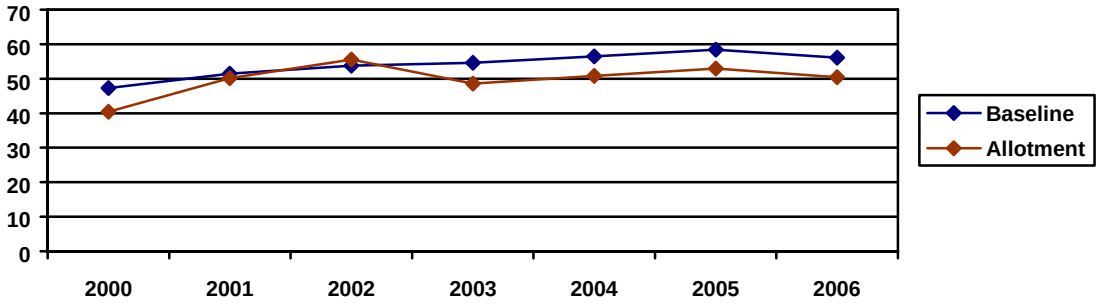


Figure C-43: Grundy County Reduction from Baseline and Allotment (%)

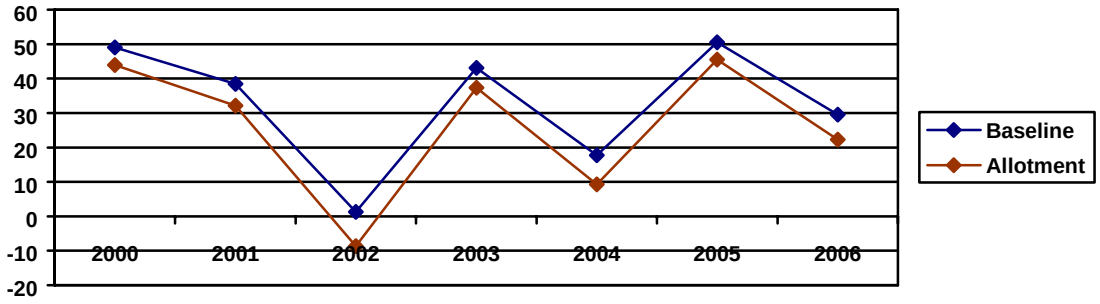


Figure C-44: Kane County Reduction from Baseline and Allotment (%)

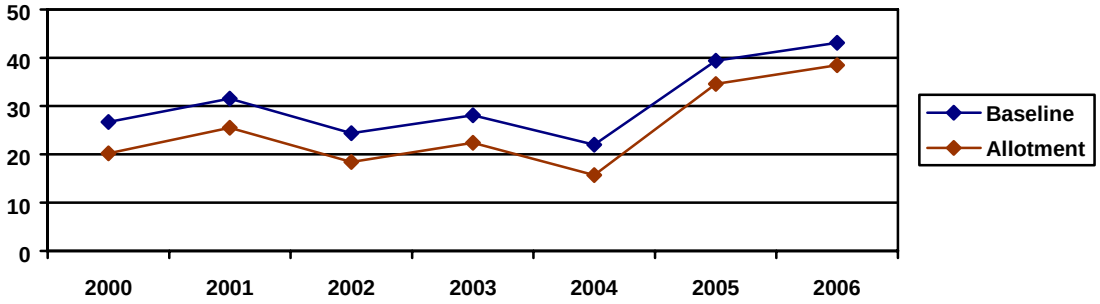


Figure C-45: Kendall County Reduction from Baseline and Allotment (%)

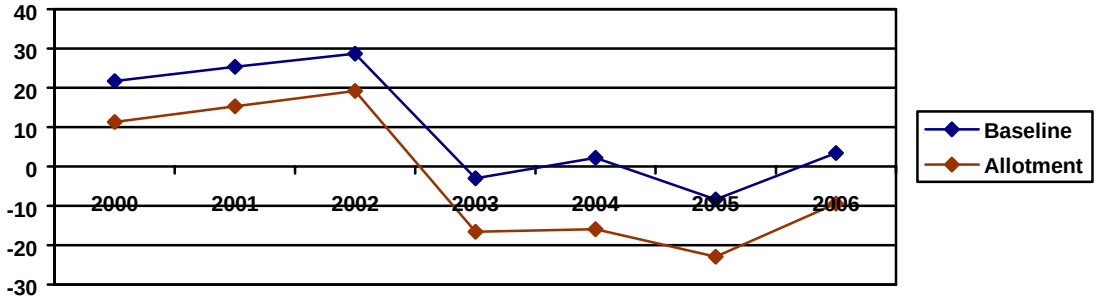


Figure C-46: Lake County Reduction from Baseline and Allotment (%)

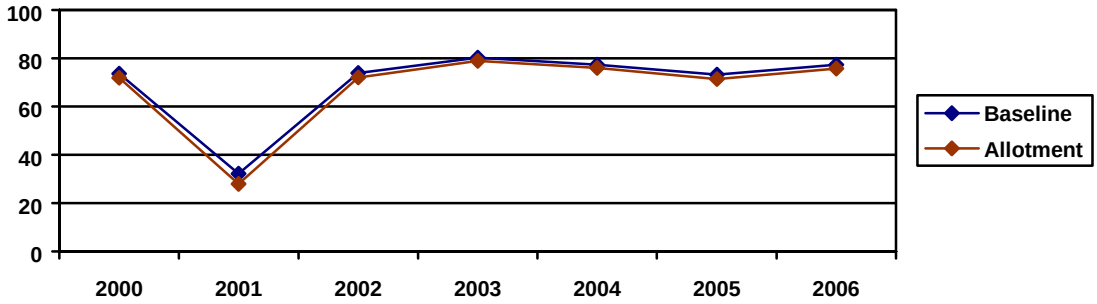


Figure C-47: McHenry County Reduction from Baseline and Allotment (%)

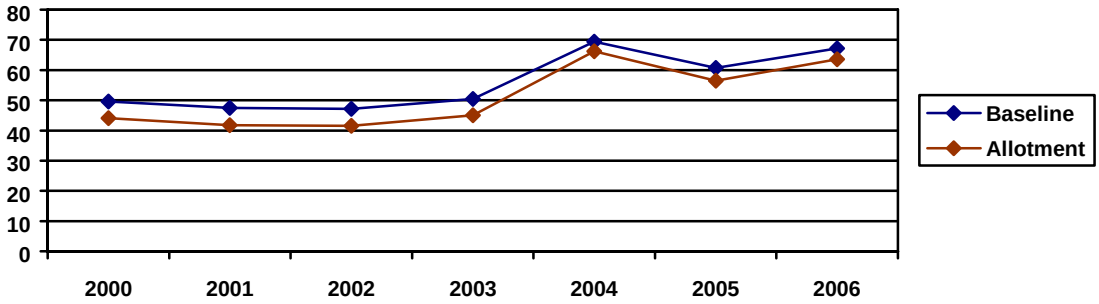


Figure C-48: Will County Reduction from Baseline and Allotment (%)