Illinois
Environmental
Protection Agency
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Office of Environmental Quality
1021 North Grand Avenue East
Springfield, Illinois 62706
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Annual Environmental Conditions Report

2002

PREFACE

Illinois continues to build a better partnership with USEPA that more clearly focuses on specific environmental progress goals and communicates the results to the public in a clearer and more concise fashion. The *2002 Annual Environmental Conditions Report* continues to reflect the performance measurement system jointly adopted by the Environmental Council of States and U.S. EPA. number of major accomplishments have been highlighted in this report:

- The U.S. EPA ruled that the Metro-East area now meets the health-based, one-hour ozone (smog) standard. This ruling came as a result of a petition by the Illinois EPA to classify the area as achieving the standard. The petition was based on air quality measurements and a thorough analysis, which verified that the state's pollution control program had achieved sufficient reductions to improve air quality conditions to the degree where the one-hour ozone standard is now attained. There is a U.S. EPA approved maintenance plan in place to ensure the area continues to attain the one-hour standard.
- Emissions Reduction Market System (ERMS) Program - The ERMS program, approved by the U.S. EPA, allows emission reductions to be officially credited towards the state's effort to achieve attainment of federal one-hour standard for ground-level ozone. The program has achieved its goals of significant reduction of pollutants while providing flexibility and cost-savings to the industrial participants during each of the three years it has been in operation. For the third annual performance year of this program, once again participating sources exceeded the reduction targets for VOM.
- Leaking Underground Storage Tank (LUST) Program - Illinois was one of only ten states to receive multiple U.S. EPA UST Fields Pilot Grants, which address abandoned or underused sites with underground storage tanks—the common type of brownfield site. Additionally, this was the second year, in over 16 years of the Illinois LUST Program, in which more LUST incidents were closed than new ones reported.
- Over $2 million in Municipal Brownfield Redevelopment grants were issued to 23 communities. These grants assist municipalities in redeveloping abandoned or underutilized properties so they can be returned to the tax roles.
- Of the total pollutant load discharged to Illinois' waters in calendar year 2002 by wastewater facilities holding Agency-issued National Pollutant Discharge Elimination System (NPDES) permits, 99.62 percent of the load was compliant, meaning it met or was below the levels allowed to be discharged by the NPDES permit. The percentage of compliant loads discharged in 2002 marks the seventh consecutive year of improvement. It is important to note that Illinois has already achieved in calendar year 2002 the planned 2005 program objective of 99.5 percent compliant load discharges.
- A recent amendment to the Environmental Protection Act included a provision to align the requirements of the state program with the national program. This amendment provides that the agreements we enter into at a state level may be executed with the participants of the National Environmental Performance Track program. This will allow the Agency to continue to work with the U.S. EPA in providing innovative alternative methods of regulation that bring about greater environmental benefits.

We hope this report provides useful information for the public and interest groups that have a stake in environmental protection.

Renee Cipriano, Director

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ANNUAL ENVIRONMENTAL CONDITIONS REPORT - 2002

INTRODUCTION

This annual environmental conditions report is prepared by the Illinois EPA to help focus attention on environmental results. As part of our annual performance agreement with United States Environmental Protection Agency (U.S. EPA), Region 5, the Illinois EPA commits to prepare and distribute this report. The 2002 Performance Partnership Agreement between Illinois EPA and U.S. EPA uses the performance measurement hierarchy ("SMART" chart) as a guide for program targets and measurements. In turn, this report reflects this measurement approach.

The report is structured around Illinois EPA's three major media programs, in addition to multi-media management. The Illinois EPA has tried to present the information contained in this report in a less technical, more user-friendly format. This format includes a master list of reference materials that are available as supplemental information in **Appendix A**. The materials in **Appendix B**, in many instances, provide the reader with more detailed analyses. **Appendix C** lists the acronyms used in this report.

PUBLIC REVIEW

The Illinois EPA continues to encourage interested persons to review this report and provide comments regarding our environmental performance. The current report is also available on the Agency's web site each year at http://www.epa.state.il.us/environmental-conditions.

MAJOR ACCOMPLISHMENTS

This section provides highlights for specific individual projects or accomplishments for the Illinois EPA during 2002.

Bureau of Air – Ozone attainment in Metro East Area

Quality-assured air monitoring data for 2000, 2001, and 2002 demonstrated that the Metro-East ozone NAA attained the one-hour standard for ozone. This area included the counties of Madison, Monroe and St. Clair.

On December 26, 2002, Illinois EPA submitted an ozone redesignation request and a maintenance plan for the Metro-East St. Louis NAA. This redesignation request was approved by U.S. EPA on May 12, 2003.

Illinois has vigorously implemented a variety of regulatory and voluntary programs impacting both industrial and mobile sources to reduce ozone precursor emissions. As a result, there have been substantial reductions in the amounts of those pollutants going into the atmosphere.

ERMS Program

Industrial facilities participating in the Emissions Reduction Market System (ERMS) reduced their volatile organic material (VOM) emissions by 48 percent below their allotted emissions during 2002.

Participating sources reduced VOM emissions by 38 percent compared to their allotted emissions in 2000, the first year of the program, and by 47 percent in 2001. Allotted emissions generally represent a 12 percent reduction from sources' baseline emissions or VOMs emitted in the mid-1990s.

The 172 participants for 2002 include the largest VOM sources in the region, representing 23 different industrial categories. VOMs contribute to the formation of ground-level ozone and also include many hazardous air pollutants. The ERMS program runs from May 1 through September 30, which correlates with the time of year when ozone formation occurs.

The ERMS program was approved by the United States Environmental Protection Agency in 2001, and allowed the emission reductions to be officially credited towards the State's effort to achieve attainment of the federal one-hour standard for ground-level ozone.

ERMS was the first program in the nation of its kind (a market-based cap and trade for VOMs) and has achieved its goals of significant reduction of pollutants while providing flexibility and cost-savings to the industrial participants during each of the three years it has been in operation.

Bureau of Land – Remediation and Brownfields Assistance Programs

Illinois EPA continues to work to enhance cleanup effectiveness and encourage economic redevelopment. Working with U.S. EPA, local governments, and other stakeholders, Illinois EPA can point to the following significant 2002 cleanup accomplishments within its six cleanup/redevelopment programs:

- Leaking Underground Storage Tank (LUST) Program
    - Illinois was one of only ten states to receive multiple UST fields pilot grant from the U.S. EPA.
    - This was the second year, in over 16 years of administration of the Illinois LUST Program, in which more LUST incidents were closed than reported.
- Superfund / Federal Facilities Programs
    - The Cleanups at the Kerr-McGee-Reed Keppler Park and the Tri-County Landfill sites were both completed in 2002. Construction is now complete at both sites.
    - The U.S. Navy transferred the last 10-acre parcel from the Naval Air Station Glenview to the Village of Glenview in 2002. The facility was selected for closure in 1993.
    - The CERCLA Non-Time Critical Removal Action of the Site 89 Pesticide Trench

was completed at the Savanna Army Depot NPL Site. This remedial activity removed an estimated 800 to 1,000 tons of 4,6-dinitro-o-cresol that was disposed at Savanna Army Depot in 1952 by the U.S. Department of Agriculture. The total project cost was initially estimated at $5.35 million, but those estimates were exceeded.

  - The final transfer of property from the Naval Air Station Glenview to the Village of Glenview was completed in 2002. The Base Realignment Act of 1993 slated the facility for closure, and military activities ceased at the facility in 1995. A total of 1028.2 acres were evaluated, remediated where necessary and transferred to the Village of Glenview. The redevelopment of the facility includes high-end, single-family residences, an 18-hole championship golf course, open space and industrial/ commercial retail space, all within the Village of Glenview. The Department of Navy spent $25 million in the investigation, remediation and transfer of the facility property.

- Site Remediation / State Response Action Programs
  - Voluntary cleanup enrollments increased by at least 6 percent over the previous year for the fifth straight year.
  - Response Actions at the Bath Landfill in Decatur protected the Sangamon River from environmental damage. A cap was constructed and interlocking flexible concrete armor units were installed along the river bank and planted with native shrubs to prevent waste from eroding from the landfill.
- Brownfields Assistance Program
  - Over $2 million in Municipal Brownfield Redevelopment grants were issued to 23 communities.

Bureau of Water - Persons Served by Compliant Water Supplies

During calendar year 2002, the percentage of persons served by Illinois community water supplies that were compliant with all health requirements was 93 percent. This compliance percentage represents over a four-percentage improvement from calendar year 1995 and reflects continued progress toward the calendar year 2005 goal of 95 percent. It is important that safe drinking water be free of contamination that has the potential to cause either short-term or long-term health effects. The compliance outcome is significant because a total of 10,603,318 persons in Illinois were provided safe drinking water from water supplies compliant with all health requirements during 2002. This represents an additional 797,873 persons served by compliant water supplies when compared to 1995.

River Miles Program

The number of river miles in good condition has increased from 34.7 percent in 1972 to 64.5 percent in 2002. This shows progress towards attainment of the goal of 67.5 percent of river miles assessed in good condition by 2005.

ENVIRONMENTAL PROGRESS AGENDA

Under the performance partnership system, the states and the U.S. EPA envision environmental management being increasingly driven by mutual determination of priorities and accountability for the results achieved. In this system, environmental goals and indicators are used as a tool to help program managers assess progress towards desired outcomes. Part of this process includes better characterization of environmental conditions.

Two considerations went into our selection of an agenda for environmental progress. First, the Illinois EPA wants goals, objectives, and related measures that are understandable. Second, we want to show important environmental quality trends wherever possible. The resulting goals and objectives for each program are summarized as follows:

AIR QUALITY MANAGEMENT

Goal: Illinois should be free of air pollutants at levels that cause significant risk of cancer or respiratory or other health problems. The air should be clearer (i.e., less smog), and the impact of airborne pollutants on the quality of water and on plant life should be reduced.

Environmental Objectives:

1. Maintenance of 90 percent* "good" or "moderate" air quality conditions in the areas of the state outside the Lake Michigan and Metro-East 1-hour ozone non-attainment areas.
2. Maintenance of 90 percent "good" or "moderate" air quality conditions in the two 1-hour ozone nonattainment areas.
3. Maintenance of attainment status for pollutants other than ozone, especially in urban areas.
4. Attainment of the 1-hour ozone standard in the Chicago area by 2007 and in the Metro-East area by 2003.

LAND QUALITY MANAGEMENT

Goal: Safe waste management and restored land.

Environmental Objectives:

1. By 2005, reduce or control risk to human health and the environment at 90,000 acres with contaminated soil, contaminated groundwater, or unmanaged waste.

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*The Air Quality Index includes the 8-hr ozone standard. It also includes six categories of air quality: good; moderate; unhealthy for sensitive groups; unhealthy; very unhealthy; and hazardous.

2. By 2005, no significant release from waste management facilities that harm off-site groundwater, human health, or the environment.
3. By 2005, reduce the waste disposed in Illinois from in-state sources to 34 million cubic yards per year.

WATER QUALITY MANAGEMENT

Goals: ***Clean Water*** – Illinois' rivers, streams and lakes will support all uses for which they are designated, including protection of aquatic life, recreation and drinking water supplies.

Safe Drinking Water – Every Illinois public water system will provide water that is consistently safe to drink.

Groundwater – Illinois' groundwater resources will be protected for designated drinking water and other beneficial uses.

Environmental Objectives:

1. Waterways with "good" water quality conditions will increase 5 percent from 2000 levels by the year 2005. (Stream mileage in "good" condition for aquatic life use reported in the cycle 2000 305(b) report was 62.5 percent).
2. The percentage of lakes in "good" or "fair" condition will remain constant from 2000 to the year 2005. (Lake acreage in "good" or "fair" condition for overall use reported in the cycle 2000 305(b) report was 97.0 percent).
3. The percentage of Lake Michigan open shoreline miles in "good" condition will remain constant from 2000 to the year 2005. (Lake Michigan shoreline mileage in "good" condition for open waters aquatic life use reported in the cycle 2000 305(b) was 100 percent).
4. The percentage of the population served by community water supplies (CWS) who receive drinking water with no short-term (acute) or long-term (chronic) adverse health effects increases to over 95 percent by the year 2005 (an increase of 5 percent).
5. A declining trend of groundwater contaminants in CWS wells will occur through the year 2005.

Smoke from a facility

MULTIMEDIA MANAGEMENT

Goals: Adverse consequences resulting from toxic chemical releases are avoided, where possible, or otherwise minimized.

Environmental improvements will result from voluntary actions being taken by businesses, communities and the public.

Environmental Objectives:

1. Toxic chemical hazards will be reduced over the next five years.
2. Better environmental performance is demonstrated over the next four years by participants in non-regulatory, structured situations.

ENVIRONMENTAL QUALITY CONDITIONS

The environmental data that is presented in this report comes primarily from sources (e.g., units, facilities, and sites) that are monitored in some manner or from direct monitoring of air, land and water quality. Environmental information about sources is usually available due to some specific regulatory requirement. The environmental performance of these monitored sources does influence some environmental conditions in Illinois and is a good reflection of progress for environmental protection. The overall utility of this type of information is related to the relative proportion of environmental impacts that are within the scope of the regulatory programs.

Information from direct monitoring is mostly a governmental service that is frequently linked to ambient environmental quality standards. Various types of monitoring networks or systems are operated to collect and analyze environmental samples for designated parameters. These systems are often designed to serve various environmental protection purposes that have a high priority. Thus, the environmental data that is generated is designed to satisfy these purposes and may have limited applicability for other purposes, such as environmental research. Taken in context, however, these environmental data are still valuable indicators of environmental conditions and, in turn, our efforts to improve those conditions. A more detailed explanation of these measures is provided in **Appendix B**, where certain technical features are more fully described.

We continue to feature "green boxes" in the text to highlight key program performance. In this way, we hope to make the picture clearer and more meaningful for the reader.

Water sampling in a lake

AIR QUALITY MANAGEMENT

Goal: Illinois should be free of air pollutants at levels that cause significant risk of cancer or respiratory or other health problems. The air should be clearer (i.e., less smog), and the impact of airborne pollutants on the quality of water and on plant life should be reduced.

The U.S. EPA has established national ambient air quality standards for six criteria pollutants: carbon monoxide (CO); lead (Pb); sulfur dioxide (SO_2); nitrogen oxides (NOx); particulate matter (PM); including particulate matter of 10 microns or less (PM_{10}) and particulate matter of two and one-half microns or less ($PM_{2.5}$ or fine PM); and ozone, including a 1-hour and an 8-hour standard. Illinois currently attains the national air quality standards for all of these pollutants except $PM_{2.5}$ and the 1-hour ozone standard in Chicago and the 8-hour ozone standards.

In July 1997, U.S. EPA promulgated additional air quality standards for fine PM ($PM_{2.5}$) and 8-hour ozone. However, in May 1999, the federal Court of Appeals for the District of Columbia Circuit stayed the enforcement of these two new standards, although it ordered the States to continue certain activities related to the new standards. In March 2001, the United States Supreme Court upheld the validity of the fine PM and 8-hour ozone standards, but remanded the case to U.S. EPA to more fully articulate its implementation policy for the 8-hour ozone standard. Although the fine PM standard is technically effective, it cannot serve as a basis to limit air pollution from any individual source until several preliminary steps are completed, including design of a monitoring network, actual monitoring for fine PM, analyses of monitoring samples, and U.S. EPA promulgation of nonattainment areas and implementation policies. Thus, there is currently no regulatory schedule for implementing the fine PM and 8-hour ozone standards. Illinois has continued deployment of our fine PM monitoring network and is collecting data. Monitoring for 8-hour ozone is also ongoing and Illinois has submitted its proposed designations for 8-hour ozone nonattainment areas to U.S. EPA. Because the monitoring data for fine PM is incomplete, and implementation of the 8-hour ozone standard is uncertain, this data will not be fully reported in this *2002 Environmental Conditions Report*. However, data relative to the new standards has been used in calculating the "Air Quality Index."

Illinois tracks emissions from stationary sources through Annual Emissions Reports, which are required by both the federal Clean Air Act and state law. Detailed information regarding this requirement is included in **Appendix B**. Illinois also tracks the impact of emissions on air quality through its ambient air quality monitoring network. This *Environmental Conditions Report* includes data collected by the monitoring network. A description of the various components of the entire monitoring network and their purposes is also included in **Appendix B**.

Fire and smoke at a power plant

AIRSHED CONDITIONS

Environmental Objectives:

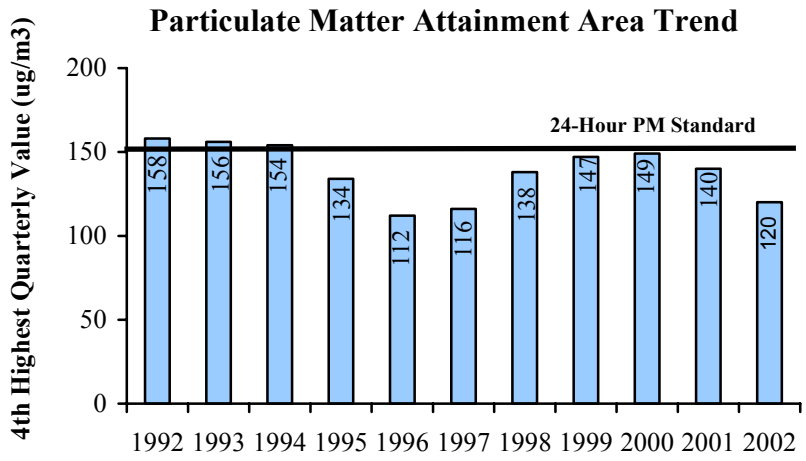
1. Maintenance of 90 percent* "good" or "moderate" air quality conditions in the areas of the state outside the Lake Michigan and Metro-East 1-hour ozone nonattainment areas.
2. Maintenance of 90 percent "good" or "moderate" air quality conditions in the two 1-hour ozone nonattainment areas.
3. Maintenance of attainment status for pollutants other than ozone, especially in urban areas.
4. Attainment of the 1-hour ozone standard in the Chicago area by 2007 and in the Metro-East area by 2003.

Ozone levels in Chicago have improved significantly since 1988

Maintenance of National Air Quality Standards (Attainment Areas)

Where the state attains an air quality standard, activities within the state must be controlled so that the attainment status is maintained. In some cases, attainment is determined by the third or fourth highest ambient air quality value at a monitor during a three-year period. Where this is the case, the figures in this section indicate that the value presented is for the three-year period ending in that year. Thus, the value for 2001 represents the average of monitored levels in 2000, 2001 and 2002. **Figure 1** shows that for a number of years, Illinois had several areas that did not attain the PM_{10} national air quality standard; now, all of Illinois attains the PM_{10} standard.

Figure 1



*The Air Quality Index includes the 8-hr ozone standard. It also includes six categories of air quality: good; moderate; unhealthy for sensitive groups; unhealthy; very unhealthy; and hazardous.

Figure 2 shows the ambient air quality levels of SO_2 reported as the second highest daily level (measured at all monitors) monitored in the entire state. Additionally, all of Illinois' utilities subject to the U.S. EPA's Acid Rain Program for SO_2 emissions are in compliance with that program.

Figure 2

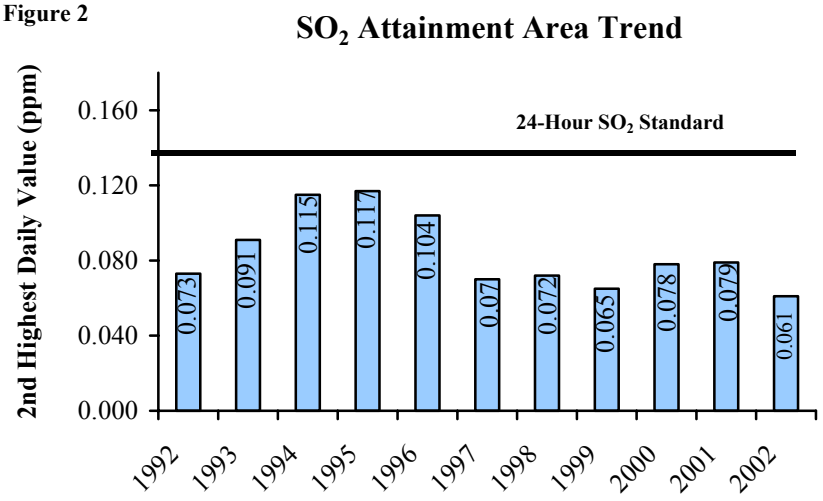
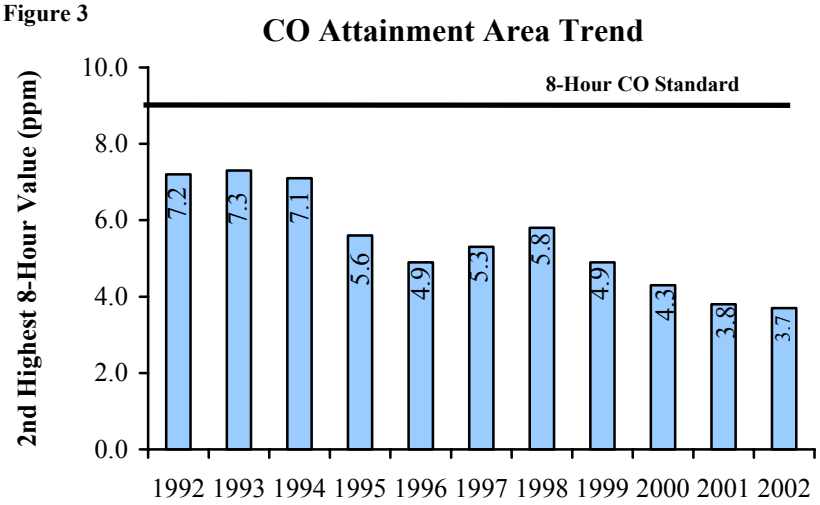
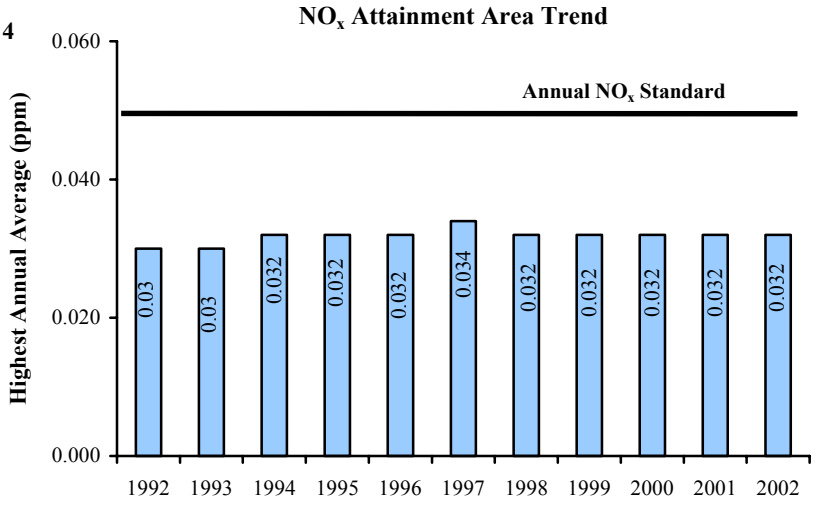


Figure 3



Nationally, ambient air levels of CO tend to be problematic in urban areas rather than rural areas. Illinois is one of only a few states with large urbanized areas that does not have nonattainment areas for CO as illustrated in **Figure 3**. Illinois' ambient CO levels are considerably below the national air quality standard. Attainment with the national standard is determined by the second highest level of CO during any eight-hour period during the year.

Figure 4



NOx ambient levels, in **Figure 4** have remained fairly steady during the past decade. The NOx levels in the state is well within the national standard.

Figure 5 shows that the ambient air levels of lead have remained fairly steady in recent years.

Figure 5

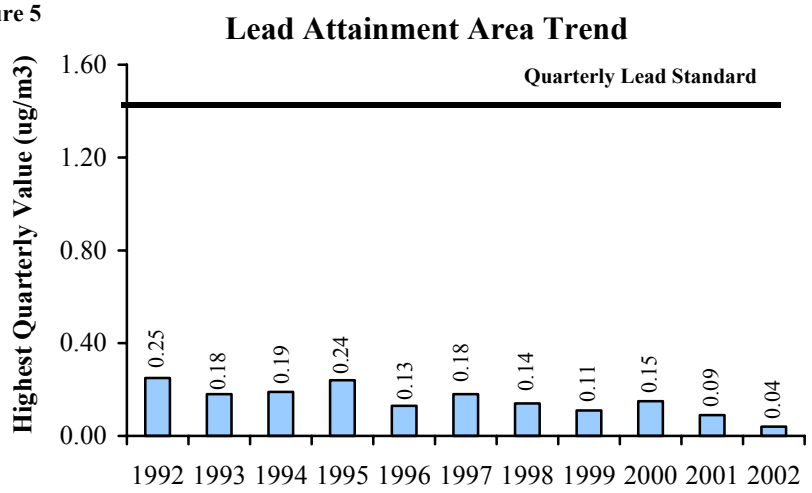
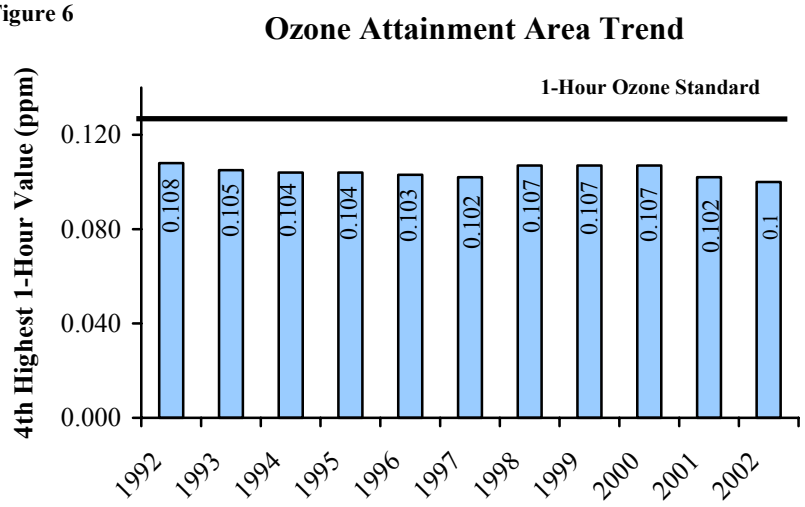


Figure 6

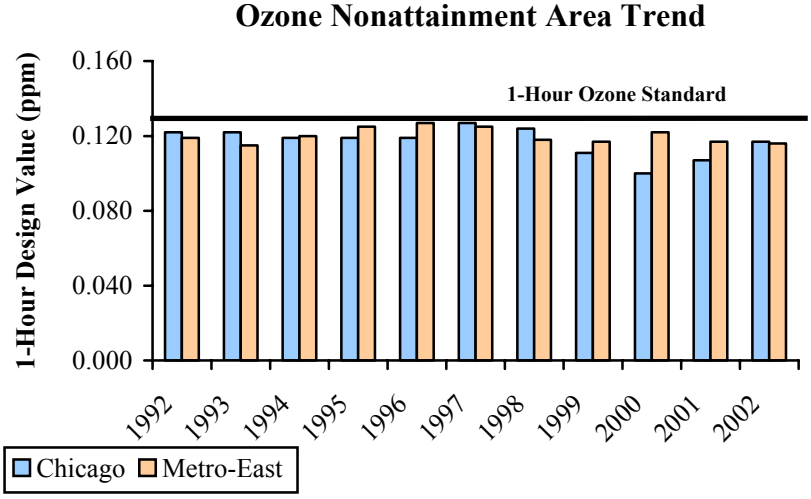


The trend in 1-hour ozone air quality levels in the areas of the State attaining the standard is presented in **Figure 6**.

Reduction in Ozone Levels (Nonattainment Areas)

Our actual progress in affecting ozone levels in nonattainment areas is evident in **Figure 7**, which presents the actual monitored 1-hour ozone levels in the Lake Michigan and Metro-East nonattainment areas.

Figure 7



In 1990, the Clean Air Act was amended to provide specific direction regarding nonattainment area ozone. Trends are generally downward, particularly since implementation of control measures in the nonattainment areas beginning in 1991. A number of those measures were implemented nationally, such as reductions in the levels of certain compounds in consumer products (e.g., paints) and improvements to vehicle engines and exhaust systems, thus benefiting the attainment areas as well as the nonattainment areas. There has been a slight increase in ozone levels since 1998 for the Metro-East area due to elevated levels of ozone measured in Jersey County, which is downwind of the nonattainment area.

Meteorologists are able to predict when the weather patterns are likely to be conducive to the formation of ozone. Since the number of ozone-conducive days has tended to remain fairly constant, a measure of our progress towards attaining the 1-hour ozone standard is to examine the number of days in each ozone season that exceeds the standard compared to the number of ozone-conducive days.

Figures 8 and **9** illustrate our progress towards attaining the 1-hour standard for the Lake Michigan and Metro-East areas, respectively. The progress towards attaining the 1-hour standard seen in both Lake Michigan and Metro-East from 1996 through 2001 is significant, particularly compared to 1988, when we had 70 ozone-conducive days and 20 exceedance days in the Lake Michigan area and 48 ozone-conducive days and 12 exceedance days in the Metro-East area. In 2002, there were 4 ozone exceedance days for the Lake Michigan area and one exceedance day in the Metro-East area.

Figure 8

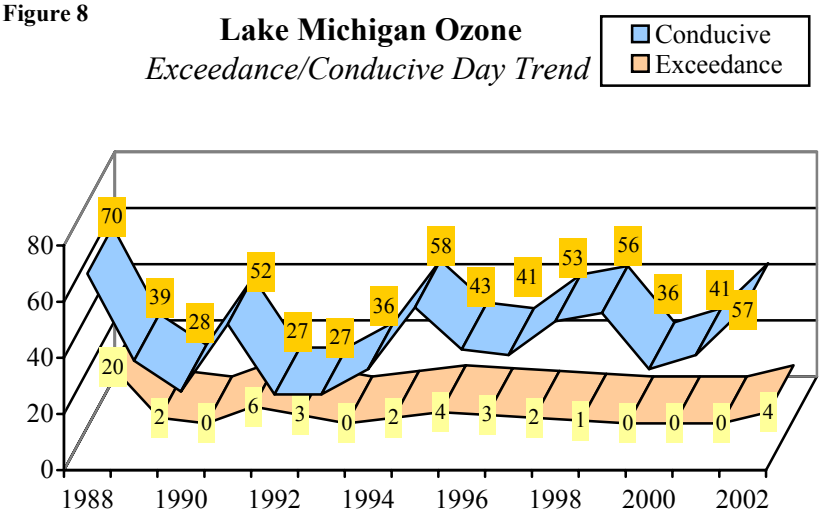
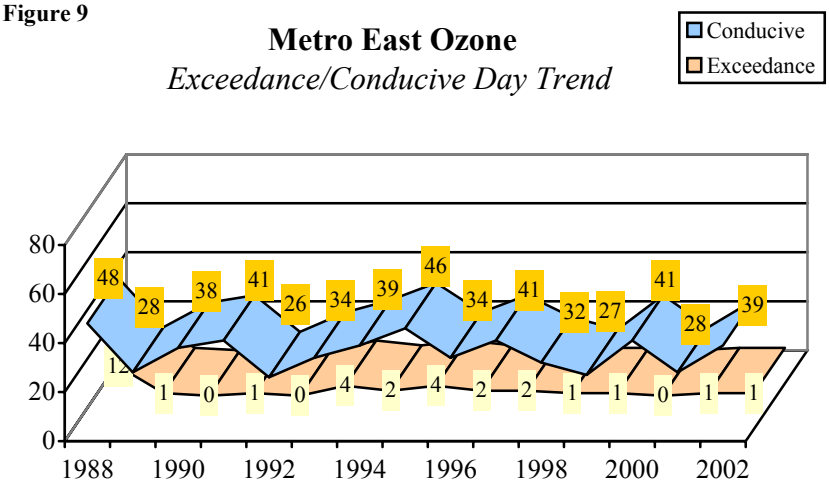


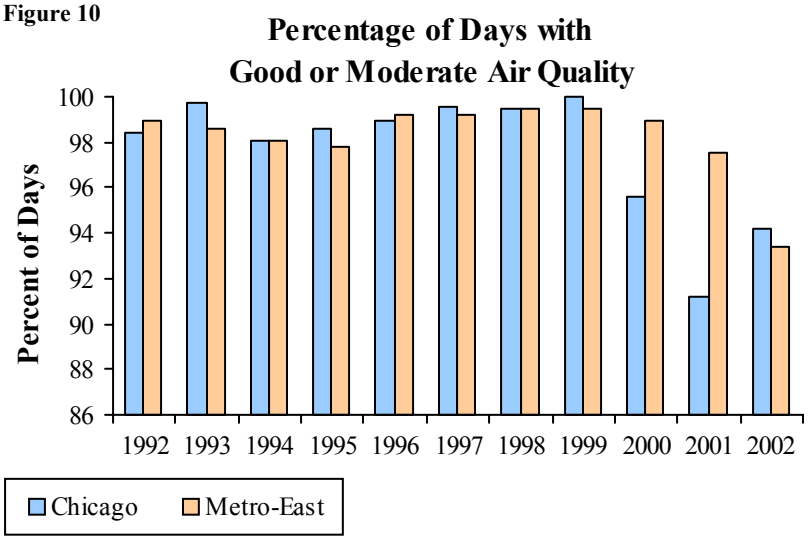
Figure 9



The bar chart in **Figure 10** provides information regarding the percentage of time each year that the Lake Michigan and Metro-East ozone nonattainment areas have experienced air quality that is at or below the national standards for all six criteria pollutants. Since ozone and $PM_{2.5}$ are the only pollutants for which the state continues to experience exceedances of the standard, they are the pollutants that tend to cause air quality to be less than moderate. Other metropolitan areas of the state have experienced good to moderate air quality nearly 100 percent of the time in recent years.

The specific means for determining this comprehensive look at all pollutants in an airshed is measured by the Air Quality Index (AQI), which is described in more detail in **Appendix B**.

Figure 10



PROGRAM PERFORMANCE

Program Objectives:

1. VOM emissions in the Chicago nonattainment area will be reduced by at least an additional 68 tons per day by 2002, from a 1996 baseline*.
2. NOx emissions in areas of the state outside the Chicago nonattainment area will be reduced by at least an additional 105 tons per day (tpd) by 2002, from a 1996 baseline*.
3. Reductions in emissions of hazardous air pollutants.

**Note: Illinois is progressing in reducing emissions of VOM and NOx to meet this air program performance objective. Although a 2002 milestone inventory will not be available until 18 to 24 months from the end of 2002, with regard to NOx reductions, the target reduction of 105 tpd from the 1996 milestone year may not be achieved due to delays in the implementation of the NOx SIP Call at the federal level. The additional NOx reduction of 105 tpd will likely not be achieved until the new NOx SIP Call implementation date of 2004. Reductions of VOM emissions since 1996 currently exceed the 68 tpd commitment level contained in the program objective. All of the reductions achieved between milestone year 1996 and 2002 will be verified once the 2002 periodic emission inventory is completed in late 2003 or early 2004.*

Reduction of VOM and NOx Emissions

The Chicago and Metro-East areas are designated as nonattainment for both the 1-hour and 8-hour ozone standards. Ozone is formed by the photochemical reaction of volatile organic materials (VOM), nitrogen oxides (NOx), and to a lesser extent, carbon monoxide (CO) in the presence of sunlight on very warm summer days. VOM is emitted by a number of types of sources, including industries, vehicles, consumer products, and plants.

Thick black smoke from an asphalt fire

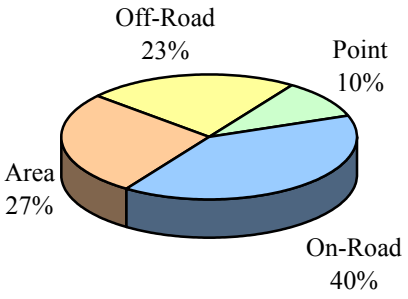
As required by the Clean Air Act amendments of 1990, Illinois EPA compiles actual periodic milestone emissions inventories every three years beginning in 1996. Compiling complete, quality assured periodic emission inventories takes approximately 18 to 24 months after all the necessary data is collected and processed. Emissions estimates presented in the Annual Environmental Conditions Report for the interim years other than 1996, 1999, 2002, 2005, and 2008 are interpolated from projected values. Meeting program objectives and goals are based on the quality assured actual emissions estimates presented in the periodic milestone emissions inventories.

The pie charts in **Figure 11** show the relative distributions of VOM emissions in Chicago and outside the Chicago nonattainment areas, respectively, for stationary point sources such as from industries, on-road mobile sources, off-road mobile sources such as heavy machinery, and area sources such as drycleaners and gas stations.

Figure 11

2001 VOM Emissions / Chicago Nonatttainment Area

Total Ozone Season Emissions = 86,480 tons



2001 VOM Emissions / Outside Chicago Nonattainment Area

Total Ozone Season Emissions = 180,040 tons

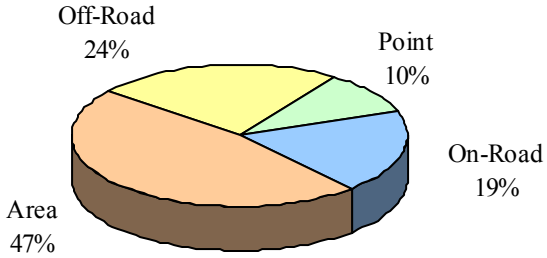
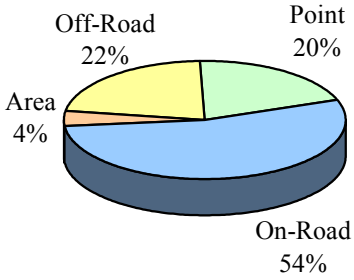


Figure 12 illustrates the relative distribution of NOx emissions in the Chicago non-attainment area and outside the Chicago nonattainment area. NOx is largely a product of combustion.

Figure 12

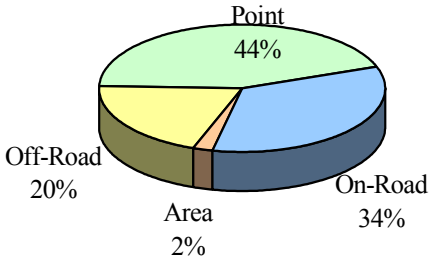
2001 NOx Emissions / Chicago Nonatttainment Area

Total Ozone Season Emissions = 121,520 tons



2001 NOx Emissions / Outside Chicago Nonattainment Area

Total Ozone Season Emissions = 219,470 tons

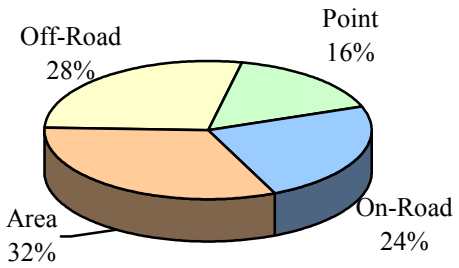


Therefore, large emitters of NOx include fossil fuel-fired power generators, industries that use fossil fuels to create heat, and engines.

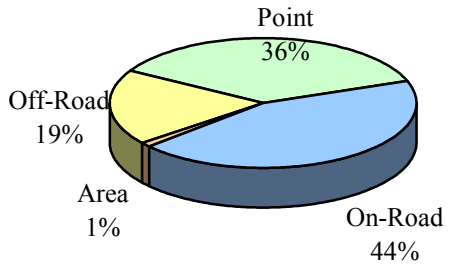
Figure 13 shows the VOM and NOx emissions in the Metro-East area respectively.

Figure 13

2001 VOM Emissions / Metro-East Nonatttainment Area
Total Ozone Season Emissions = 12,070 tons



2001 NOx Emissions / Metro-East Nonattainment Area
Total Ozone Season Emissions = 18,300 tons



Studies have shown that region-wide reductions of NOx emissions will have a significant impact on ozone levels in the nonattainment areas within the region because ozone is transported, or carried by weather, to areas other than where its precursors were emitted. In October 1998, U.S. EPA issued a call for state implementation plans (SIPs) to reduce NOx emissions in 23 jurisdictions in the eastern U.S. Illinois engaged in an extensive effort with our stakeholders to develop the required, NOx SIP Call. The Illinois EPA submitted several rulemakings to the Illinois Pollution Control Board to address the NOx SIP Call and these rules have been adopted. Illinois' NOx SIP Call has been submitted and approved by U.S. EPA. The NOx SIP Call will be implemented in May 2004.

Our air quality modeling analyses have found that the NOx emission reductions achieved from the regional implementation of the NOx SIP Call, along with the current program to reduce VOM emissions, will yield attainment in the Lake Michigan and Metro-East nonattainment areas for the 1-hour and 8-hour ozone standards.

Emissions Reduction Market System

The Illinois EPA completed the third year of operation for an innovative VOM emissions trading program. The Emissions Reduction Market System (ERMS) started operation in the Chicago ozone trading area in May 2000. Illinois was the first state in the nation to adopt this type of cap and trade program for VOM. The ERMS program is designed to operate on a seasonal basis, from May 1 through September 30, to correlate with the time of the year when ozone formation occurs. The program allows trading among participating sources in order to meet a reduced cap on their overall VOM emissions.

Emissions trading provides a cost-effective way for companies to comply with reduction requirements necessary to help meet the ozone standards. There were 172 sources participating in the VOM emissions trading marketing in 2002. Participating sources are issued allotment trading units (ATUs) each year for their seasonal emissions by the Illinois EPA. In 2002, a total of 98,164 ATUs (9,712.4 tons) were allotted to sources, of which 51,164 ATUs (5,116.4 tons) were used, as shown in **Figure 14**.

Figure 14

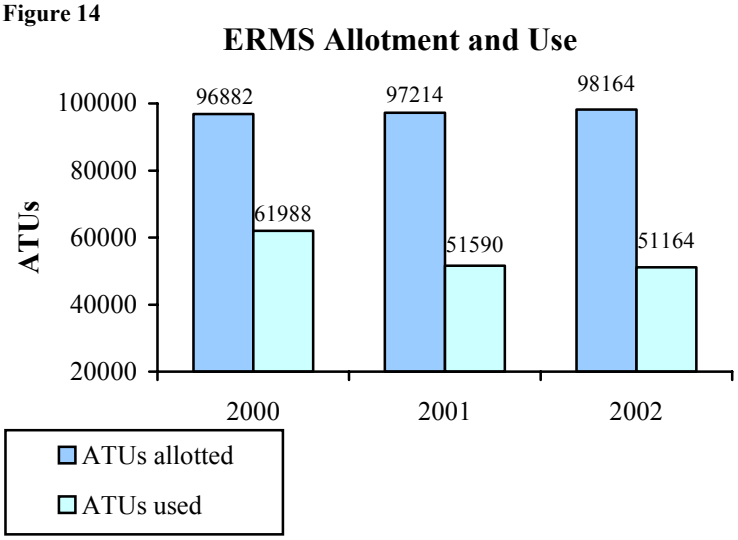
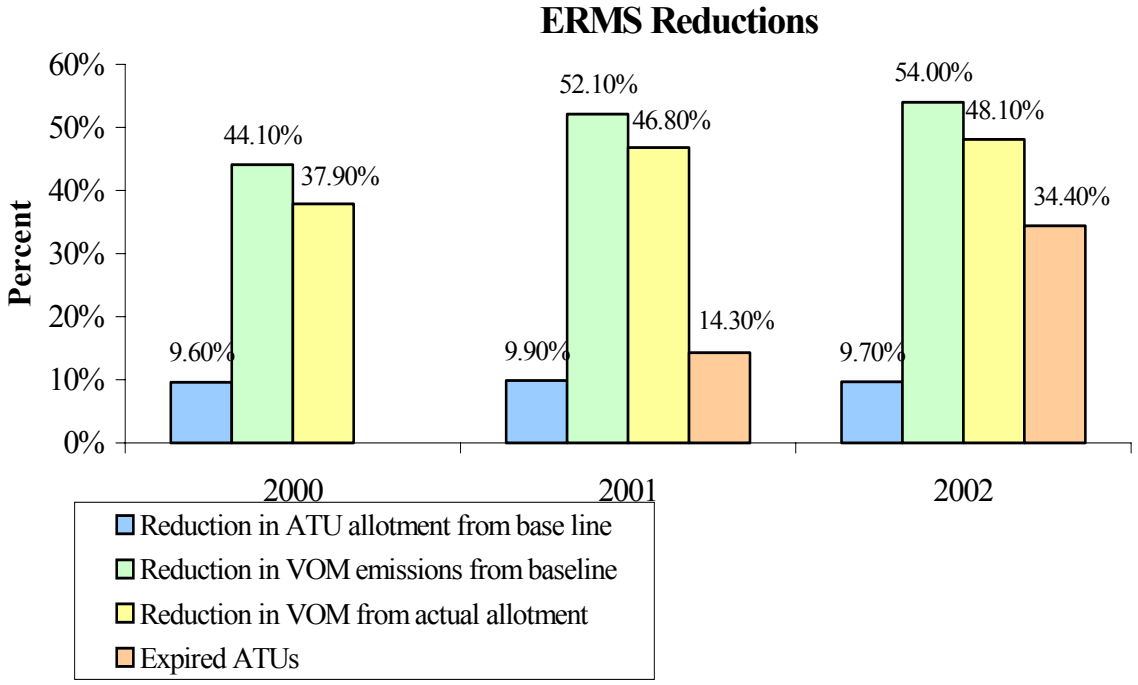


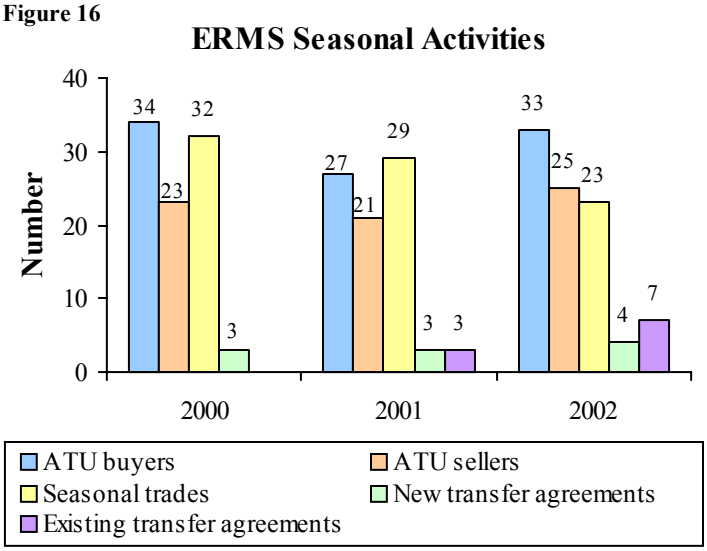
Figure 15 shows the percent reductions from the baseline and allotment during the last three years.

Figure 15



The third year of ERMS as shown in **Figure 16** produced 23 seasonal trades, 4 new long-term transfer agreements, added to the 7 long-term transfer agreements already in effect. The trades involved a total of 25 sources as sellers and 33 as buyers, with 4,483 ATUs changing hands. This amounts to 4.6 percent of the total ATUs for the area, and 8.8 percent of the ATUs retired for compliance purposes.

Figure 16



An innovative feature of the ERMS program is the ability of sources to permanently retire ATUs by donating or selling them to special participants in the program. Two of the seasonal trades in 2002 involved the donation of ATUs for environmental benefit.

A number of key findings for the third year of this program are as follows:

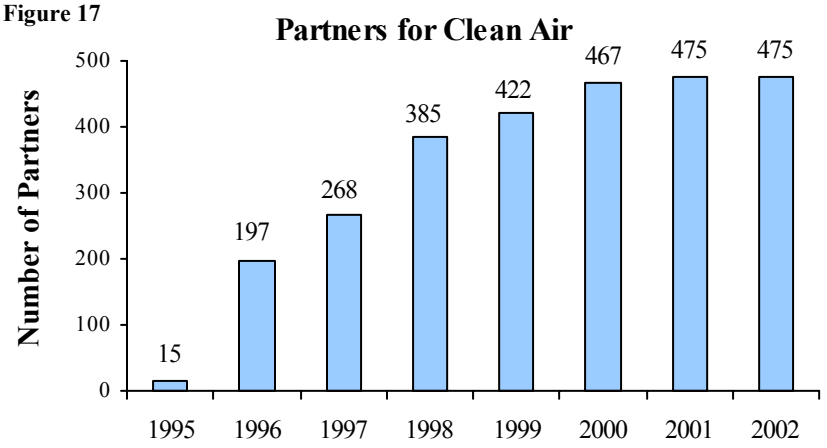
1. The allotment shows a 9.7 percent reduction from the original baseline for sources.
2. Sources were able to find trading partners, there was a sufficient supply of available ATUs, and market prices were conducive to trading.
3. Alternative ATU generation did not play a role in market performance.
4. The reconciliation and compensation processes performed as designed and operated in a timely and effective manner.
5. Overall, sources in the ERMS program emitted 54.0 percent less VOM than their baselines would have allowed them to emit, and 48.1 percent less than their actual ATU allotment for 2002.
6. Trading did not appear to influence HAP emissions.
7. ATUs equivalent to 34.4 percent of those allotted to participating sources in 2002 expired without being used.

Voluntary Reductions of Ozone Precursor Emissions

The Partners for Clean Air is a voluntary organization of industries and other entities in the Chicago area that take certain actions on Ozone Action Days. The Agency forecasts Ozone Action Days based upon weather and air quality information and notifies the Partners. The Partners (with their employees) then take actions to help reduce air pollution. Such actions include staggered work hours to reduce rush hour traffic, telecommuting, and suspension of landscaping activities that involve use of small engines such as lawnmowers.

The number of Corporate Partners, shown in **Figure 17** is now 475, from only 15 at the beginning of the program in 1995. The Agency's public education efforts have also increased public awareness of actions that individuals can take to reduce ozone formation on Ozone Action Days. The Partners' Top Ten Tips for Ozone Action Days are included below. The Partners for Clean Air accounted for an estimated 20.0 tons of VOM emissions reduced each ozone action day. We believe the efforts of the Partners and other individuals have been important in reducing the number of ozone exceedance days.

Figure 17



Ozone Action Days - Top 10 Tips for Individuals to Reduce Their Contributions to Ozone Formation

1. Limit driving by ridesharing, carpooling, walking, or biking.
2. Use public transportation.
3. Avoid excessive car idling and jack-rabbit starts.
4. Refuel cars only after 7:00 p.m.
5. Avoid using gasoline-powered recreational vehicles.
6. Defer lawn mowing and gardening chores that use gasoline-powered equipment.
7. Postpone oil-based paint and solvent use.
8. Barbeque with electric starters, not fluid starters.
9. Defer use of household consumer products that release fumes or evaporate easily.
10. Conserve energy in your home.

Mobile Source Programs

Illinois has several mobile source programs for vehicles, fuels, and fueling activities. Additionally, new highway projects that are federally funded must demonstrate that the project will result in emissions from vehicles consistent with the level that can be supported by the airshed.

Enhanced Vehicle Inspection and Maintenance Program

In February 1999, Illinois launched operation of its Enhanced Vehicle Inspection and Maintenance (I/M) program, required by the Clean Air Act. The program relies on the use of the IM240 transient emissions test allowing for the measurement of vehicle exhaust emissions at various speeds and loads by stimulating actual in-use conditions on a dynamometer. The IM240 test, coupled with the evaporative system integrity test (i.e. gas cap pressure test), and the use of the On-Board Diagnostic (OBD) testing on newer vehicles, provide for greater emissions reductions than the basic program it replaces. During 1999, Illinois tested 1.6 million vehicles, 9.7 percent of which failed the initial test. In 2000, 1.5 million vehicles were tested, 8.5 percent failed the initial test. In 2001, 1.7 million vehicles were tested, 13.5 percent of which failed the initial test. In 2002, 1.7 million vehicles were tested, 12.9 percent of which failed the emissions test. The increased failure rates beginning in February 2001 resulted from introduction of final IM240 exhaust emissions standards for 1988 and newer vehicles.

A vehicle undergoing inspection and maintenance

Vehicle repairs sufficient for vehicles to pass on retest or receive a waiver resulted in the reduction of 9,380 tons of VOM during the 2002 ozone season in the Chicago area, compared to what would have been emitted without the program*.

During July 2002, Illinois EPA began implementation of OBD I/M testing, which will eventually replace tailpipe testing on all 1996 and newer vehicles equipped with second-generation OBD systems. U.S. EPA's OBD I/M rule allows states to phase-in OBD testing utilizing "clean-screening" and second chance exhaust testing for up to two years (one test cycle). Illinois has elected to use this option. Beginning July 2002, vehicles passing the OBD I/M test no longer receive the IM240 or idle exhaust emissions test. Owners of vehicles failing the OBD I/M test are given the option to have the vehicle repaired or continue to receive the tailpipe test. Through the end of March 2003, over 467,000 vehicles have passed the OBD I/M test in Illinois, resulting in the elimination of approximately 60,000 exhaust emissions tests per month. The OBD I/M test can be performed much quicker than the traditional tailpipe test, resulting in significant improvements in motorist convenience in the form of shorter test and wait times.

Currently, approximately 8 percent of vehicles fail the OBD I/M test. Over 95 percent of motorists have elected to receive the second chance tailpipe test available during the phase-in period, which ends January 1, 2004. Approximately 90 percent of these vehicles pass the less stringent second chance tailpipe test.

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*This is a significant reduction from the values reported in previous reports. This figure reflects the use of MOBILE6 emissions factors.

Reformulated Gasoline Program

Reformulated Gasoline (RFG), a federally-administered program, is required in the nine areas of the country that had the worst air quality in 1990, which included the Chicago metropolitan area. RFG must meet certain federal standards for VOM, NOx, and air toxic emissions. RFG has resulted in significant reductions in VOM and toxic emissions in the Chicago area and provides a significant contribution to the improvement in air quality.

Clean Fuel Fleets Program

The Clean Fuel Fleets Program (CFFP) is a federal program required in ozone nonattainment areas classified serious and above. Therefore, the program is required in the Chicago non-attainment area. The program applies to owners of fleets of 10 or more vehicles, and requires that when a fleet owner replaces vehicles, a percentage of those vehicles must meet at least low emission vehicle or LEV standards. The CFFP has resulted in a reduction of more than 1000 tons of VOM annually (3 tons per day) from more than a thousand fleets that are required to be in the program.

Stage I and II Vapor Recovery Program

The Stage I Vapor Recovery program affects all retail and private gasoline dispensing facilities located in Boone, Peoria, Rock Island, Tazewell, Winnebago, Madison, St. Clair, Monroe, Cook, DuPage, Kane, Lake, McHenry, and Will counties, Oswego Township in Kendall County, and Goose Lake and Aux Sable Townships in Grundy County. Its purpose is to capture, as well as minimize, pollutant vapors from releasing into the atmosphere while the delivery vessels unload gasoline products into the underground/aboveground storage tanks.

The Stage II Vapor Recovery program is also required in Illinois but only affects counties in the Chicago area, including Cook, DuPage, Kane, Lake, McHenry, and Will counties as well as Oswego Township in Kendall County and Goose Lake and Aux Sable Townships in Grundy County. It targets gasoline vapors from vehicle refueling operations at gas dispensing facilities. The Stage II system consists of special nozzles and coaxial hoses at each gasoline pump that captures vapors from the vehicle's tank and routes them to the station's underground or above-ground storage tank during the refueling process. In 2002, there were 1,878 gasoline facilities that have Stage II systems.

Illinois Alternate Fuels Rebate Program

The Illinois Alternate Fuels Rebate Program provides rebates for businesses, local governments, organizations, and individuals in the State of Illinois who (1) acquire an alternate fuel vehicle – "Original Equipment Manufacturer (OEM) Vehicle Rebate," (2) Convert an existing conventional vehicle to an alternate fuel vehicle – "Conversion Rebate," or (3) purchase domestic renewable fuel to operate an alternate fuel vehicle – "Fuel Cost Differential Rebate."

The amount of rebate is 80 percent of the additional cost of acquiring an alternate fuel compared to the cost of the same type of conventional vehicle and 80 percent of the cost of

conversion, up to $4,000. For the domestic fuel rebate, which has been established for E-85, the amount is up to $450 per vehicle each year for a consecutive three-year period.

Alternate Fuel Rebates have been issued for natural gas, propane, and electric vehicles, as well as for E-85 fuel. Among those receiving rebates are local governments, small businesses, universities, and individual citizens. The Illinois EPA has issued $1,807,847 in rebates for 526 clean alternate fuel vehicles to 74 recipients since the beginning of the program in 1999.

"Green Pays on Green Days" Educational Program

The Illinois EPA partnered with the Partners for Clean Air, local businesses, U.S. EPA, the City of Chicago and media groups to sponsor a summer long ozone educational program called "Green Pays on Green Days." Through Green Pays on Green Days, residents of the Chicago metro area, including the counties of DuPage, Cook, Kane, Will, Lake, McHenry, Grundy and Kendall, were able to enter the contest by pledging to take one or more "Green Actions" to reduce air pollution. By taking the "clean air pledge," citizens were entered into drawings for environmentally friendly prize packages. Prize packages were awarded each day the air quality in the Chicago area was forecasted to be "green" or good. The program ran from May 27, 2002 through September 2, 2002.

Individuals were able to complete pledge/entry forms in a variety of ways, including online at www.NBC5.com, through mail-in entry cards available on Green Pays on Green Days posters throughout the area, and on the weather page of the *Chicago Sun-Times* Friday edition. The *Sun-Times* entry form also included a clean air fact and tip of the week designed to educate readers on air quality issues. The Green Pays on Green Days program was promoted through several Chicago area festivals with appearances by clean air superhero, Breathe Easy Man.

The key feature to the Green Pays on Green Days program was the national Air Quality Index. Each day, the Illinois EPA forecasted the following day's air quality, which was featured each morning on WMAQ TV/NBC5 Chicago and on the daily *Chicago Sun-Times* weather page. The Air Quality Index is a six-color system that classifies air quality from "good" or "green" through increments down to "hazardous" or "maroon."

In its first year, Green Pays on Green Days was very successful, receiving more than 41,000 pledges from Chicago area residents. Additionally, the program received national recognition from the U.S. EPA as a recipient of the 2002 Clean Air Excellence Award.

Emissions from Mobile Sources

Due to the Federal Motor Vehicle Program, motor vehicle emission standards have decreased allowable emissions by more than 90 percent since 1970. With the implementation of the upcoming Tier 2 standards, emissions from cars, light duty trucks and sport utility vehicles will be further reduced. However, nationwide motorists are taking more, and longer, vehicle trips. This increase in vehicle miles of travel threatens to reverse the trend in decreasing emissions from on-road motor vehicles. In order to address this situation, the Clean Air Act requires that transportation activities in air quality nonattainment areas must not cause new air quality violations, add to existing violations, or delay timely attainment of the national ambient air quality standards. Therefore, transportation plans and programs must conform, or be consistent, with the area's State Implementation Plan (SIP).

Control strategy SIPs that are intended to demonstrate attainment or compliance with CAA Rate of Progress requirements must contain a motor vehicle emissions budget for the subject planning year. A motor vehicle emissions budget defines the total allowable emissions of a specific pollutant allocated to highway and transit vehicles. In order to demonstrate conformity with the motor vehicle emissions budgets, emissions from the implementation of a transportation plan or transportation improvement program must be less than or equal to the budget level. Both the Chicago and Metro-East transportation plans currently conform to the specific area's SIP motor vehicle emissions budgets.

Figures 18 and 19 on the next page reflect that total VOM emission levels from motor vehicles in the Chicago and Metro East ozone nonattainment areas, respectively, have decreased significantly. These emissions estimates were developed using U.S. EPA's MOBILE5b motor vehicle emissions factor model. The Illinois EPA is now transitioning to use the newer MOBILE6 model. It is expected that, although this model may generate different emissions estimates, overall motor vehicle emissions will continue to decrease. As previously noted, increased vehicle miles of travel will result in additional emissions. The charts also reflect the actual vehicle miles of travel growth levels monitored by the Illinois Department of Transportation. The driving behavior of the motoring public can have a large impact on the overall level of mobile source emissions. By properly maintaining their vehicles, minimizing additional vehicle trips, and ride sharing, or taking transit where possible, the improvement in total motor vehicle emissions will continue.

Figure 18

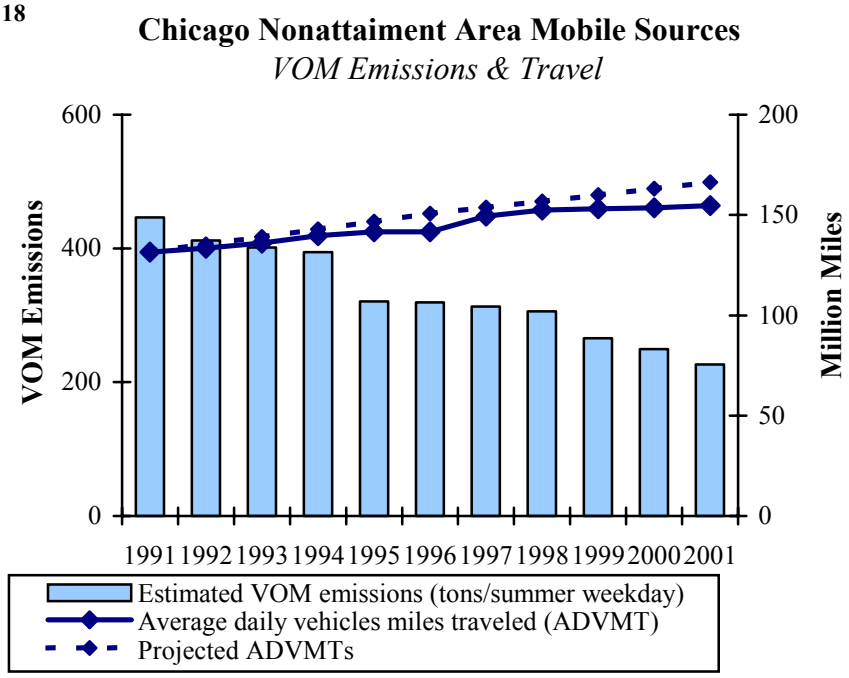
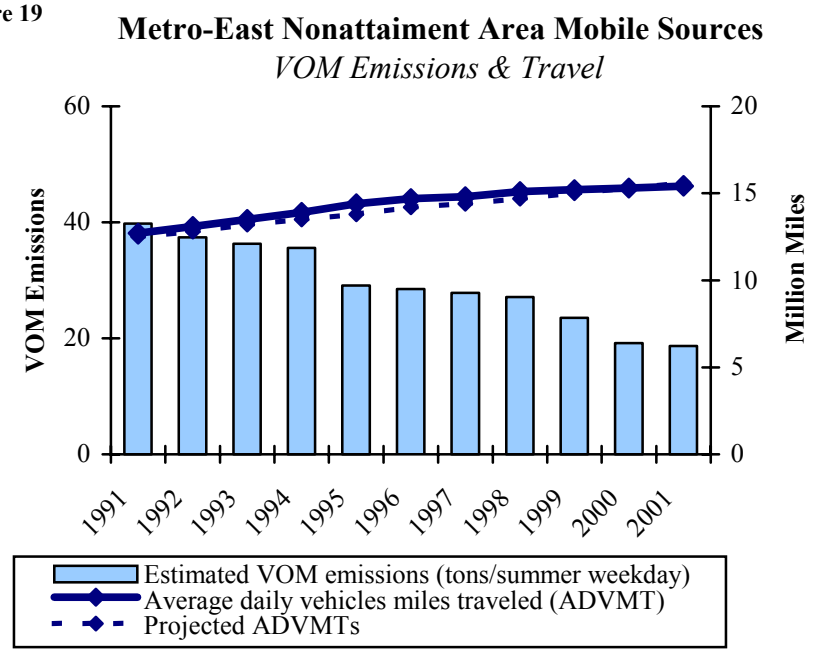


Figure 19



Illinois Green Fleets Program

The Illinois Green Fleets Program was launched in the summer of 2001 as a voluntary mobile source, marketing, and education program. Fleets throughout the State that use clean, domestic fuels and vehicles are provided recognition by being designated as an "Illinois Green Fleet" and additional marketing opportunities for having a clean and green fleet.To date, 40 corporate, small business, and local government fleets in Illinois have been designated as green fleets for using natural gas, ethanol (E-85), propane, biodiesel and electricity as motor vehicle fuels. Prospective green fleets complete an annual survey and provide information on how many alternative fuel vehicles (AFVs) are in the fleet, the amount of alternative fuels used, whether they refuel at a private or retail fuel site, and their overall alternative fuel plan.These fleets are designated as a 1-star, 3-star, and the highest level, a 5-star green fleet based on a scoring system compared to established criteria that emphasizes the use of alternative fuels. In addition, the Illinois EPA has established a website, distributes a quarterly newsletter and conducts conferences each year to have our "green fleets" share information and their experiences with colleagues that may be interested in clean, alternative fuels and vehicles. In 2003, the Illinois Green Fuels and Illinois Green Dealers programs will be added to recognize and promote public fuel stations that sell clean fuels along with certified dealerships that sell and service AFVs.

LAND QUALITY MANAGEMENT

Goals: Safe Waste Management and Restored Land

Environmental Objectives:

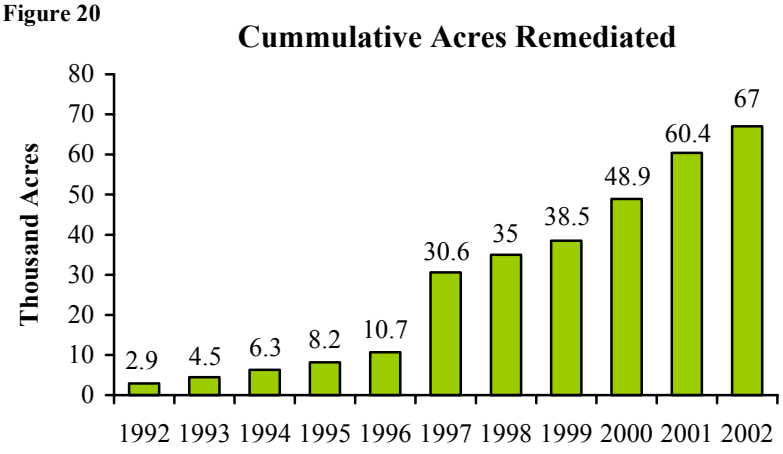
1. By 2005, reduce or control risk to human health and the environment at 90,000 acres with contaminated soil, contaminated groundwater or unmanaged waste.
2. By 2005, no significant releases from waste management facilities that harm off-site groundwater, human health, or the environment.
3. By 2005, reduce the waste disposed in Illinois from in-state sources to 34 million cubic yards per year.

SITE CONDITIONS

Acres of Land where Human Health Risk is Reduced or Controlled

Remediated sites are contaminated properties at which health risks have been successfully reduced or controlled. In 2002, over 2,700 acres were remediated as a result of the Illinois EPA's Clean Land Program. **Figure 20** shows that, since 1981, over 67,000 acres have been remediated. This is 74 percent of the first environmental objective of 90,000 acres remediated by 2005.

Figure 20



Groundwater

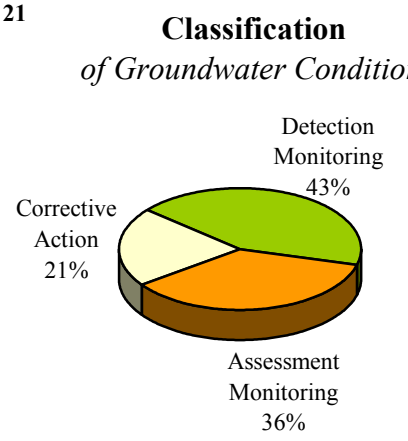
A modern sanitary landfill is designed to completely contain wastes so contaminants cannot escape to pollute air or water. Safe containment of garbage and its byproducts relies in part on a landfill liner, which consists of impermeable plastic, compacted clay or both. The liner is placed below a bed of gravel with a network of pipes that collects leachate, which is pumped out of the landfill for treatment and disposal. The liner and collection system must provide that the groundwater, within a specified distance of the landfill, will not degrade the groundwater in the uppermost aquifer. Network of groundwater monitoring wells are installed around the landfill's perimeter to ensure the liner and leachate collection system is working properly.

One of Illinois EPA's primary goals is to protect groundwater resources near landfills and other waste handling facilities. Facilities' groundwater monitoring programs are classified into four groups, which include:

1. Facilities in detection monitoring - These facilities routinely monitor their groundwater as required by a permit and have not detected contaminants above a regulatory standard;
2. Facilities in assessment/compliance monitoring - These regulated facilities have detected a contaminant in the groundwater and are reviewing or assessing the situation to determine if corrective action is necessary, or to determine if the design and operation of the facility is within expected operating parameters and therefore no remedial action is needed;
3. Facilities undertaking corrective action - These facilities have determined that remedial action is necessary as a result of assessment/compliance monitoring; or
4. Facilities that are unknown or unclassified at this time - There is currently no available information on the groundwater at these sites.

The review and analysis of these groundwater monitoring programs should allow us to focus efforts on those unknown or unclassified facilities and those facilities that have been too long in assessment/compliance monitoring and which may need to take more focused actions.

Figure 21



The ultimate goal is for all sites to be in, or return to, detection monitoring since these sites are not currently known to have groundwater problems. The Illinois EPA currently monitors 61 operating waste-disposal facilities listed in Appendix B. **Figure 21** indicates that, in 2002, 26 (43 percent) of these, are in detection monitoring, 22 (36 percent) are in assessment monitoring, and 13 (21 percent) are in corrective action. These percentages have not changed considerably from the previous year.

Municipal Solid Waste

Municipal solid waste is the term used to describe the garbage discarded by households, stores, offices, factories, restaurants, schools and other institutions. Usually, the waste is disposed of in an Agency-permitted landfill. Increasing amounts are being handled through other means of solid waste management, such as recycling and composting, but not incineration. The current trend is toward fewer, but larger, regional landfills and the development of a more efficient waste transportation infrastructure. Whether it was the result of tougher environmental rules, business considerations, or a combination, one thing is clear: in the past 16 years, the number of active landfills has fallen from 146 in 1987 to 52 in 2001. Most of these landfills have larger capacities and serve a larger area.

Mergers and consolidation of waste management companies have resulted in more private operations and fewer publicly owned landfills. Wastes from the Chicago metropolitan area are usually transported into other states, such as Wisconsin and Indiana, and the northern and central Illinois area counties.

To deal with the volumes of waste, transfer stations were sited and established in the Chicago suburbs. A transfer station is a waste handling facility consolidates wastes for transfer to a landfill. The number of transfer stations in Illinois is expected to increase as the number of landfills in the state decreases. Transfer stations accepting waste and recyclables in Illinois numbered 80 in 2001. Sixty-eight percent (54) of the state's 80 transfer stations are located in the Chicago Metropolitan Region. **Figure 22** shows the trend in the number of landfills and transfer stations.

Figure 22

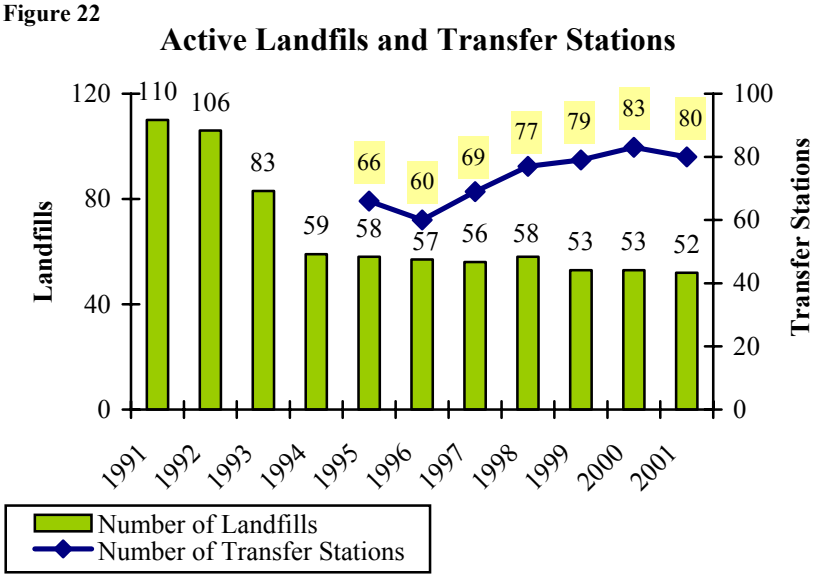
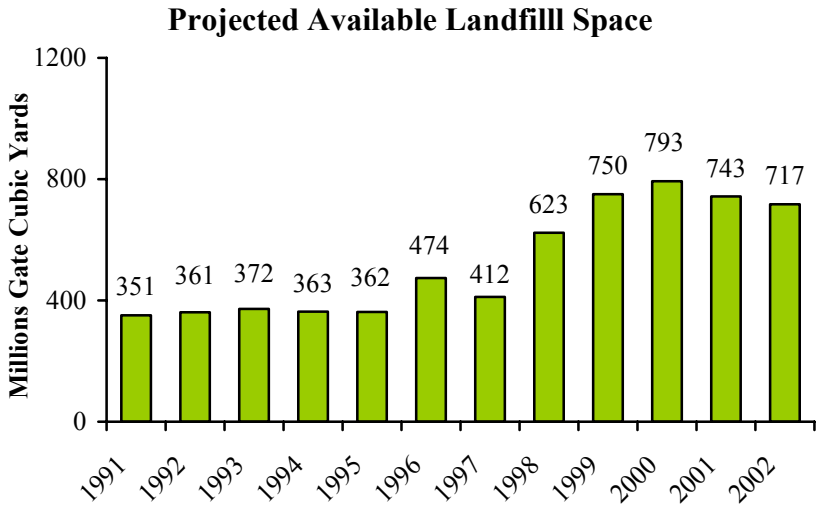


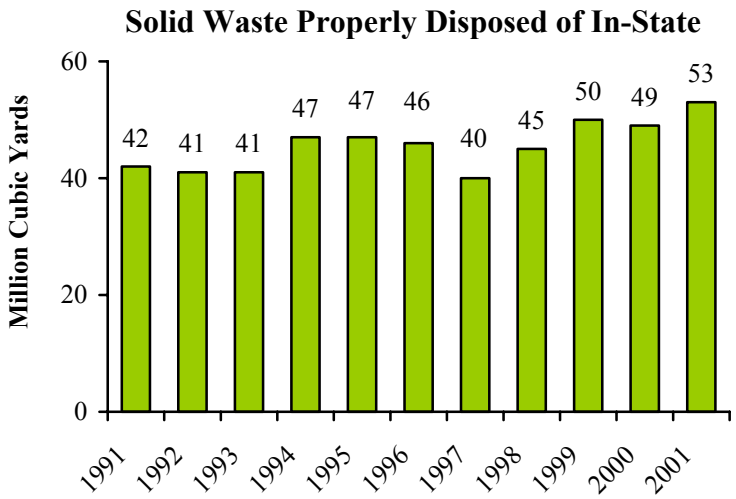
Figure 23

Landfill capacity, however, has increased during the same 10-year period as shown in **Figure 23**. In 2001, projected capacity (shown as 2002 data) dropped 3.5 percent from 743.4 to 717.3 million cubic yards as a landfill opened near East. St. Louis.



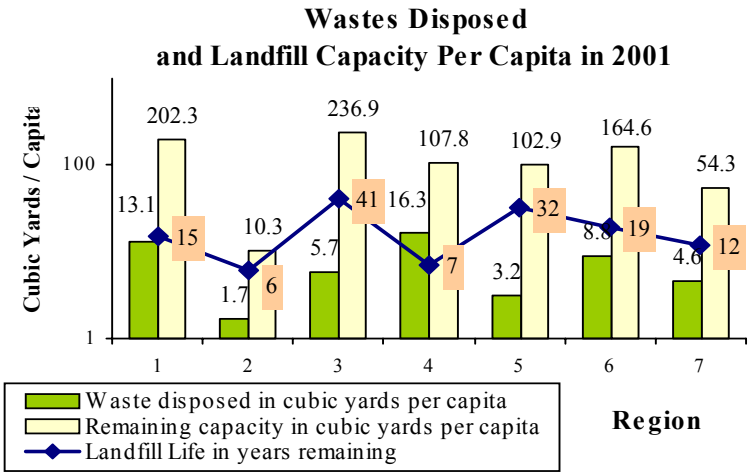
The amount of recycled waste in Illinois voluntarily reported by local recycling coordinators in 2001 was 15.6 million tons or 6.9 pounds per capita per day (pcd). The volume of waste disposed in Illinois landfills in 2001 was 50.0 million cubic yards as shown in **Figure 24.**

Figure 24



The Illinois EPA began tracking municipal solid waste disposed in landfills beginning in 1987 as required by the Illinois Solid Waste Management Act. The volume of wastes from 11 other states disposed in Illinois landfills has averaged approximately five million cubic yards annually over the past five years. In 2001, out-of-state wastes accounted for nine percent of the total disposed in Illinois landfills. The five states adjacent to Illinois: Missouri (71 percent), Iowa (18 percent), Indiana (5 percent), Kentucky (1 percent) and Wisconsin (3 percent) contributed 98 percent of the total waste imports. Prior to 1992, the volume of out-of-state wastes disposed in Illinois was not evaluated. **Figure 25** shows the amount of waste disposed and landfill capacity on a per capita and landfill life expectancy basis for each region of the state.

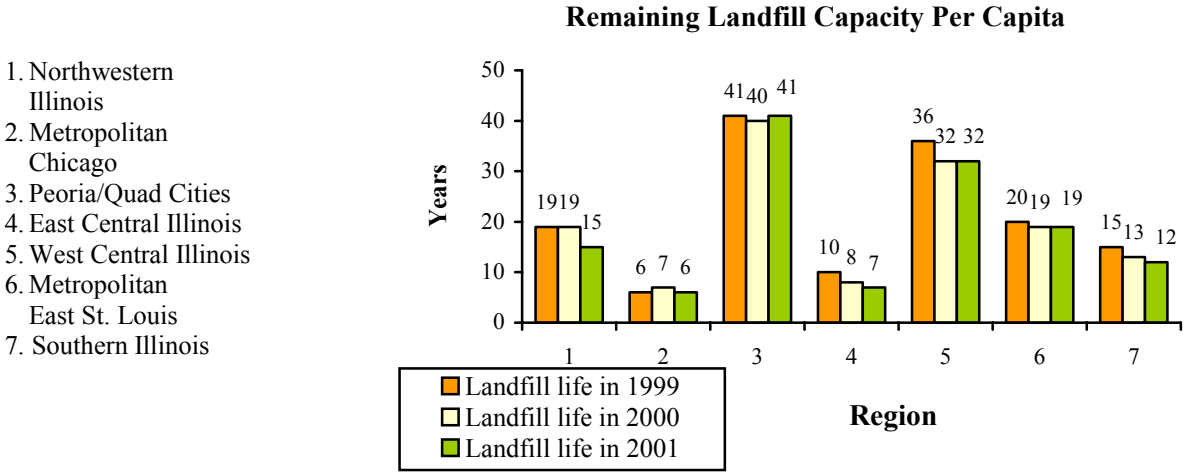
Figure 25



1. Northwestern Illinois
2. Metropolitan Chicago
3. Peoria/Quad Cities
4. East Central Illinois
5. West Central Illinois
6. Metropolitan East St. Louis
7. Southern Illinois

Figure 26 shows the amount of remaining landfill capacity remaining per capita for each of the regions of the state over the past three years.

Figure 26



PROGRAM PERFORMANCE

Program Objectives:

1. By 2005, reduce the annual amount of hazardous waste managed at commercial treatment/ disposal facilities by 10 percent.
2. By 2005, 25 percent of the municipal waste stream generated in Illinois will be recycled.
3. By 2005, 60 percent of operating waste management facilities will be in detection monitoring.
4. By 2025, 95 percent of waste management sites with groundwater monitoring systems will have no significant releases that harm off-site groundwater, human health, or the environment.
5. By 2005, 90 percent of RCRA-regulated and inspected sites will be in full compliance within 90 days of the inspection date.
6. By 2005, ensure proper closure and post-closure of all inactive landfills.
7. By 2005, 16,424 sites (about 93,475 acres) will be remediated.
    - 14,900 state and federally regulated Leaking Underground Storage Tank sites (26,075 acres)
    - 1,453 voluntary cleanup sites (9,600 acres)
    - 20 identified abandoned landfills (796 acres)

A Leaking Underground Storage Tank (LUST) site

- 37 National Priority List sites (6,000 acres)
- 9 Federal facility sites (62,801 acres)

Reduction of the Quantity and Hazardous Nature of Waste Generated

One of the Illinois EPA's objectives is to reduce both the amount and hazardous nature of waste generated in Illinois. To achieve this goal, the following programs are relied upon.

Compliance Assistance Surveys

The Illinois EPA provides assistance to smaller companies by performing preliminary inspections that help a company evaluate their complicated waste management systems. If a significant environmental problem is found, then enforcement is initiated quickly. Otherwise, the company is given a reasonable time to attain compliance. This program is referred to as a Compliance Assistance Survey.

In calendar year 2002, 235 Compliance Assistance Surveys were conducted. No regulatory deficiencies were observed during 113 of the 235 surveys. At 40 facilities, compliance was achieved during the Compliance Assistance Survey. Therefore, the compliance rate observed through the Compliance Assistance Surveys was 65 percent.

Pollution Prevention (P2)

The IEPA regional offices conduct many inspections and compliance assistance activities at hazardous waste generators annually. The sites are provided with P2 feedback surveys, which summarize the P2 opportunities found by the inspector. The Office of Pollution Prevention technical staff accompanied the regional staff on several other site visits to facilities that generate hazardous wastes. During 2002, 311 opportunities for P2 were found at 106 sites throughout Illinois.

Source Reduction

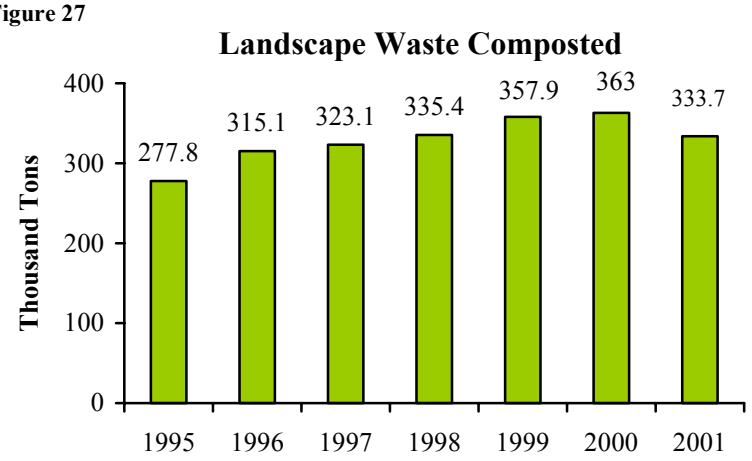
Although the goal of waste reduction remains, more waste is generated and disposed in Illinois than the previous years. Many factors may account for these increases. The two most likely factors are increased population/households in the state and the economy with higher levels of production. Since household waste is proportional to the number of households and the number of people, as the population increases, so does the amount of waste. Likewise, as the number of items manufactured goes up (e.g. cars) the industrial waste generated also goes up (in the example, waste paint, plastic trim scrap, etc.).

Landscape Waste

On July 1, 1990, landscape waste disposal in Illinois landfills was banned to conserve available landfill capacity and encourage alternative uses (e.g., soil amendment for gardens, mulch for landscaping, etc.). Since then, the number of active compost facilities has begun to approach the number of active landfills, and may exceed them in a few years. The quantity of landscape

waste collected at these facilities peaked at 438,262 tons in 1993. **Figure 27** shows 333,701 tons of landscape waste was collected at 43 facilities in 2001. The reduction from the peak in 1993 may be attributable to: (1) increased backyard composting; (2) more people leaving grass clippings on their lawns; and (3) increased land application at agronomic rates of landscape waste on farms. The landscape waste collected at these facilities is reduced through composting or chipping. Material recovered is used for landscaping, landfill cover, land reclamation, or gardens.

Figure 27

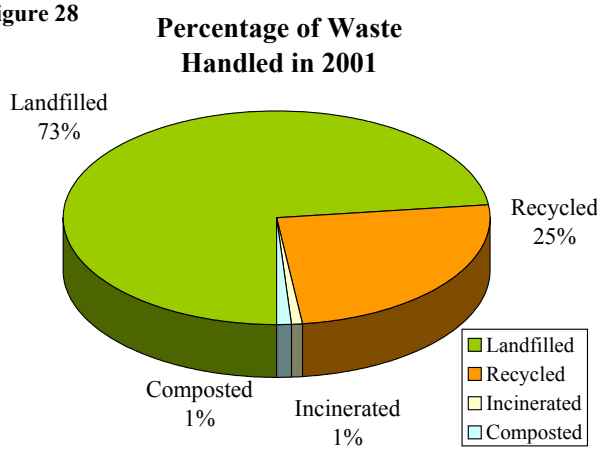


Landscape wastes processed in 2001 represent only about two percent of total wastes landfilled in Illinois that year. While this percentage is small, it is important to note that composting kept almost 334,000 tons of wastes out of landfills, each ton of waste not landfilled is a ton of landfill capacity preserved.

Recycling and Reuse

The Illinois EPA plays a peripheral role in controlling and promoting recycling; other state agencies have been given the direct charge and authority to affect market development and support recycling programs. The Illinois EPA plays a significant supporting role in regulating waste management options, other than recycling, and in collecting fees on pollution control activities. These actions provide incentives and disincentives for citizens, business and industries to recycle their wastes rather than dispose of them. Twenty-five percent of the wastes handled in 2001 are recycled as indicated in **Figure 28**, which is the same as the previous year.

Figure 28



Waste generation and recycling figures were prepared during the solid waste planning process and are updated for changes in population.

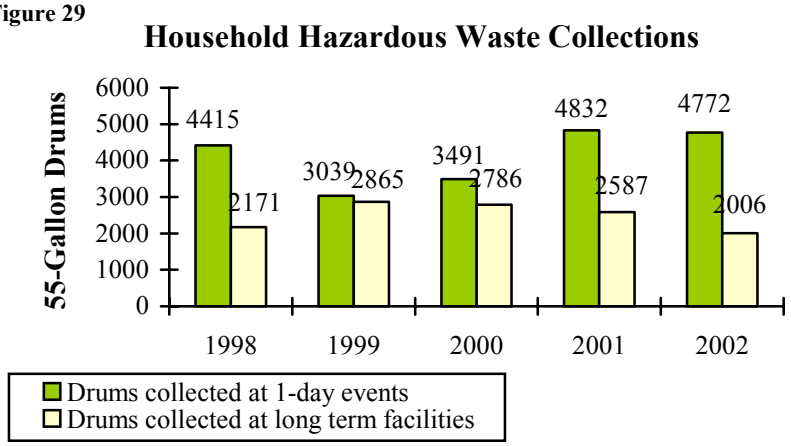
The Illinois EPA does provide some direct recycling services. These programs each focus on a different client base to address a different need. All these systems provide an outlet to deal with a waste in an environmentally friendly manner.

Household Hazardous Waste Collections

The Illinois EPA's Household Hazardous Waste Collection Program, with the assistance of local governments, diverts residential waste containing hazardous materials (e.g., waste oils, petroleum distillate-based solvents, liquid paints, pesticides, etc.) from solid waste landfills through one-day collection events and long-term collection facilities. Residents are encouraged to bring their household hazardous waste to a collection center selected by the Illinois EPA and the local community. The waste is identified, packaged, then recycled or, when necessary, transported to permitted hazardous waste disposal facilities.

Since 1989, a total of 278 one-day collection events have been conducted. Unfortunately, the demand for this service far exceeds state resources available to fund an event in all communities requesting a collection. Over 28 communities have pending applications requesting the Illinois EPA to sponsor a one-day collection event in their community. In 2002, the Illinois EPA co-sponsored 31 one-day collection events, resulting in the proper disposal of 4,772 fifty-five gallon drums of toxic materials. Over 24,100 households participated in 24 counties at an approximate total cost of $1,923,076 (contributing co-sponsor communities contributed a total of $384,907.78; the Illinois EPA provided $1,538,169. The increased number of participants at one-day collection events indicates the need for long-term collection facilities as shown in **Figure 29**.

Figure 29

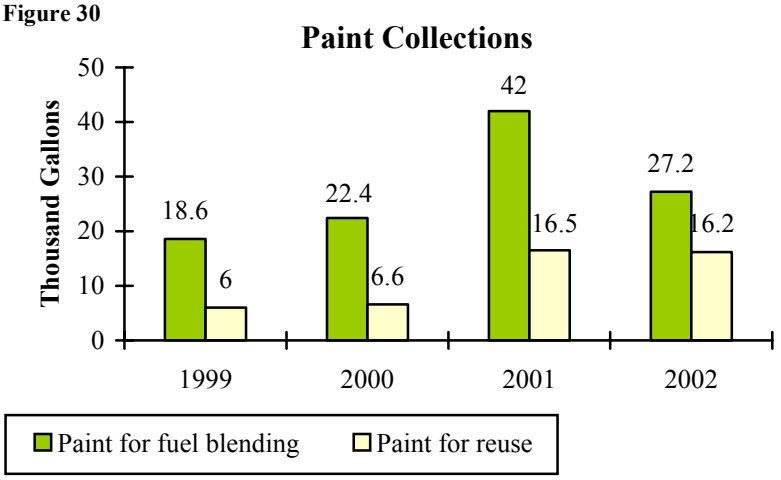


Illinois EPA also provides financial assistance in the transportation and disposal of household hazardous waste at two long-term collection facilities located in Naperville and Rockford. Both facilities accept household hazardous waste on weekends throughout the year. Participation at long-term collection facilities remains strong in Naperville and is still increasing in Rockford. In SFY02, 1,205 and 801 drums of household hazardous waste were collected at the Naperville and Rockford facilities, respectively.

Paint Collections

The most common type of material received at Illinois EPA household hazardous waste collections is paint. To reduce the amount of paint collected, the Illinois EPA and paint retailers created the Partners for Waste Paint Solutions program in 1995. This program allows consumers the opportunity to return paint products to a paint retailer participating in the program. The paint is either reused or disposed. In 2002, 17 Partners for Waste Paint Solutions bulked 499 fifty-five gallon drums of waste paint (27,229 gallons) for fuels blending. These same partners processed 3,240 five-gallon pails (16,200 gallons) for reuse, as shown in **Figure 30**.

Figure 30



These collection programs provide many benefits beyond the collection and disposal of household hazardous waste. These programs include public education elements that identify: (1) household wastes containing chemicals that make their disposal in municipal waste landfills or incinerators undesirable; (2) safe use and storage procedures for household hazardous materials; (3) consumer practices to reduce the amount and toxicity of household products discarded (e.g., buying only the amounts needed, finding less hazardous substitutes, etc.).

School Hazardous Waste Collections

The Illinois EPA provides school districts with hazardous educational waste collections in addition to one-day household hazardous waste collection events. Since its inception in 1996, 121 high schools have participated. More than 257 drums of educational hazardous wastes (e.g., laboratory wastes, expired chemicals, unstable compounds, and toxic or flammable materials) were collected and disposed at an approximate cost of $84,291. In 2002, 52 drums of hazardous educational waste from 34 high schools were collected and disposed at an approximate cost of $34,187.

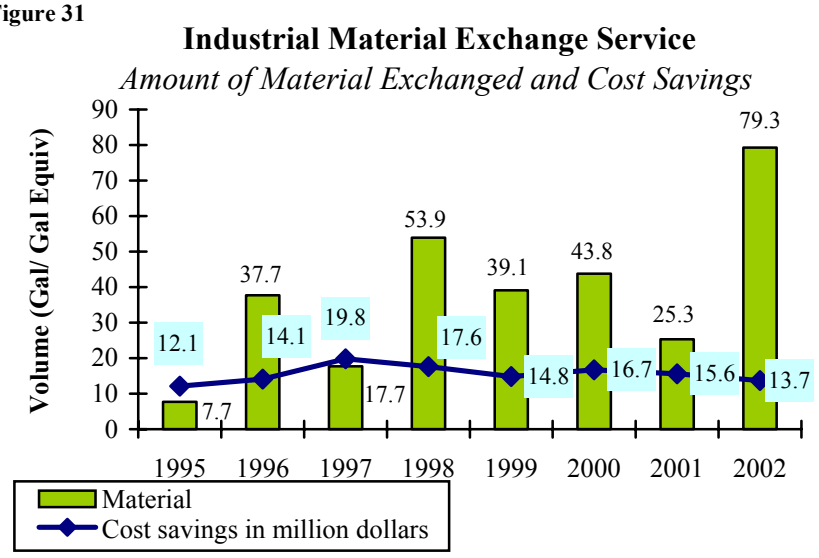
Industrial Material Exchange Service

The Illinois EPA's Industrial Material Exchange Service administers an information exchange for hazardous and non-hazardous waste by-products, off-spec items, and overstocked or damaged materials with a potential for industrial reuse. This service publishes a bimonthly directory for 25,000 subscribers nationwide. The directory lists both materials available and materials requested. After a business responds to a listing, the service puts this business in contact with the business offering or requesting the material. The final transaction and

transportation of materials are left to the businesses involved. Since 1981, more than 573 million gallon-equivalents of material have been diverted from disposal at an estimated cost savings of $218 million to industry.

Figure 31 shows that in 2002, the service diverted 79.3 million gallon-equivalents of potential waste for industrial reuse at an estimated cost savings of approximately $13.7 million to industry.

Figure 31



Used and Waste Tires

On July 1,1994, the Illinois legislature banned whole tires from disposal in Illinois landfills. The purpose of that legislation was to (1) ensure used and waste tires are collected and are put to beneficial use or properly disposed; (2) provide for the abatement of used and waste tire dumps and associated threats to the public health and welfare; (3) encourage the development of used and waste tire processing facilities and technologies, including energy recovery; and (4) provide for research on disease vectors associated with used and waste tires, and the diseases they spread. The Illinois EPA's two primary responsibilities, via funding from the Used Tire Management Fund, are (1) to undertake preventive, corrective or removal actions at used and waste tire dumps; and (2) the performance of inspection and enforcement activities for used and waste tire sites. The Illinois EPA conducts approximately 100 individual waste tire abatement activities and more than 1000 inspection activities annually at tire retailers, used tire storage/ processing facilities, and waste tire disposal sites, and used tire transportation locations.

Since 1990, more than 200 million used and waste tires were properly disposed through private markets in Illinois. More than 11 million used and waste tires (5.5 percent of the total) were abated by the Illinois EPA's Used Tire Unit contractor program. The used and waste tires disposed in Illinois are shredded and processed into either supplemental fuel that is burned in public and private utility boilers for energy recovery or crumb rubber that is used in a variety of applications including the remanufacturing of recycled rubber products and athletic turf top dressing. A small percentage is used to manufacture stamped rubber parts, playground and equestrian flooring, and other various products.

In 2002, the Illinois EPA, via their waste tire cleanup contractors, removed 14,046.47 tons of waste tires at a cost of $1,789,570, which represents the equivalent of 1,123,717.21 passenger car tires.

Proper Management of Waste

The Illinois EPA has inspected facilities and evaluated compliance for nearly two decades. In calendar year 2002, the Illinois EPA conducted 286 inspections at permitted solid waste facilities (landfills, transfer stations, etc.). Violations were observed during 69 of the inspections. Therefore, the compliance rate among solid waste facilities is 76 percent. The Illinois EPA conducted 75 inspections at hazardous waste treatment, storage, and disposal facilities in calendar year 2002. Of these facilities 43 were in compliance at the time of the inspection. Therefore, the compliance rate among hazardous waste facilities is 57 percent.

Landfill

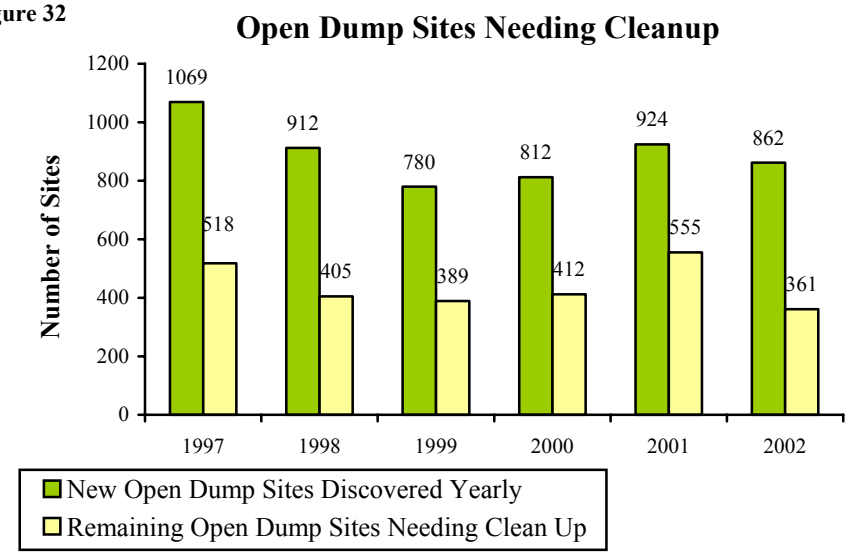
During 2002, the Illinois EPA conducted 758 inspections at used tire facilities (494 used tire storage-exempt "retailer" facility inspections; 226 used tire storage facility inspections; and 33 waste tire disposal inspections). The compliance rate among used tire storage-exempt "retailer" facilities was 75 percent and the compliance rate among used tire storage facilities inspected was 41 percent. Both of these figures represent the compliance rate at the time of the initial inspection. These figures do not reflect the efforts that Illinois EPA undertakes after the inspection to return the facility to compliance with all applicable environmental requirements. Therefore, as of this date, the compliance rate among those used tire facilities inspected in 2002 is significantly higher than indicated above.

Open Dumping

Open dumping of waste is an illegal activity and poses a variety of health, safety and environmental threats; fire and explosion; source of toxic gases; injury to children playing on or around the dump sites; habitat for disease-carrying mosquitoes, flies, and rodents; damage to natural resources; and decrease in the quality of life to nearby residents and the local community. In addition, open dumps encourage more open dumping.

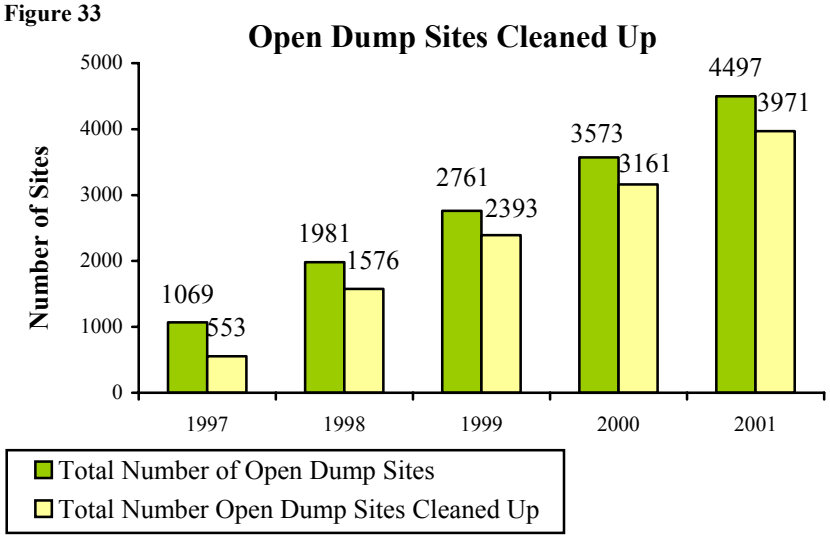
Figure 32 shows that in 2002, the Illinois EPA received 1034 complaints resulting in the discovery of 862 open dumpsites by the Illinois EPA, in partnership with 20 delegated partners. Compliance and enforcement actions resulted in the cleanup of 501 sites (40 percent) of these sites discovered in 2002. Since 1997, the backlog of open dumpsites needing cleanup is being maintained at 12 percent due to sites being added and dropping off.

Figure 32



Since 1997, 4497 open dumpsites have been discovered, from which 3971 (88 percent) have been cleaned up, as shown in **Figure 33**. About 50 percent of the open dumps are cleaned up within 12 months of their discovery. Approximately 493,284 cubic yards of waste were removed and properly disposed from these open dumps during 1997-2002.

Figure 33



Closing Non-Active Units

The Illinois EPA identified a concern regarding landfills that had stopped accepting waste but had apparently failed to meet the regulatory obligation of properly closing (including closure certification to Illinois EPA). Landfills that are not properly closed could be creating an environmental danger.

The Illinois EPA originally identified 67 non-hazardous waste landfills and one hazardous waste landfill that apparently fell into this category. Of the 67 non-hazardous waste landfills identified, 14 facilities were found to have been certified closed, certified through post-closure, or wrongly identified as part of the list. This leaves 54 non-hazardous waste landfills that no longer accept waste and must be properly closed.

A Non-Hazardous Waste Landfill

Since 2001, all of these landfills have been inspected. The findings from these inspections have been reviewed and enforcement actions taken to assure that "closure" of the landfills can be certified and the necessary post-closure activities, i.e., groundwater monitoring, are occurring. To date, 40 of the non-hazardous landfills remain in some stage of enforcement. The remainder have been certified closed or are currently in a post closure care period.

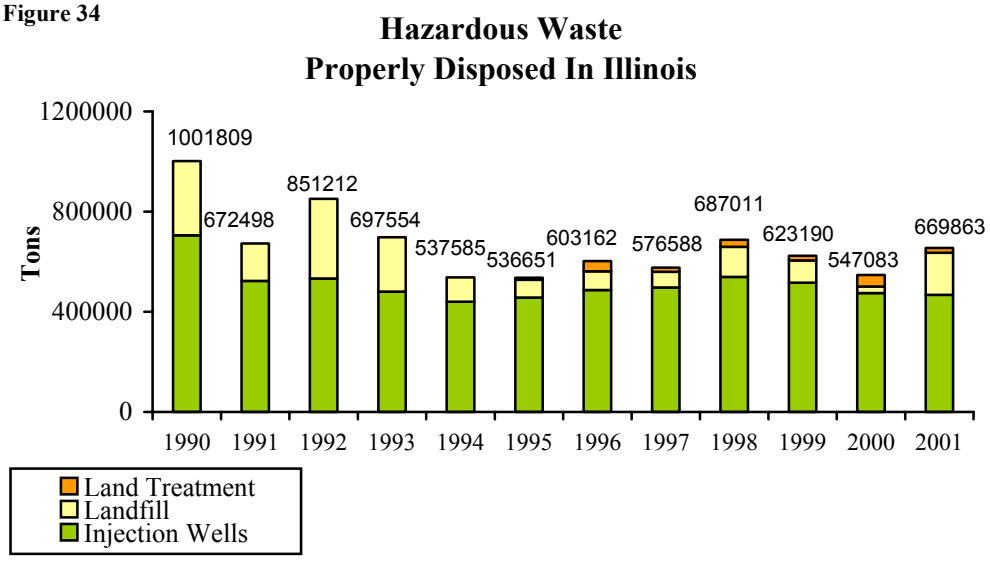
Hazardous Waste

The Illinois EPA ensures facilities engaging in hazardous waste management processes (e.g., disposal, treatment and storage) meet safe waste management standards. Over 1.4 million tons of hazardous waste was managed at Illinois hazardous waste management facilities in 2001.

Appendix B shows that approximately 669,863 tons of hazardous waste were disposed in Illinois. The remaining 0.8 million tons of hazardous waste was either incinerated, treated (with the residuals managed as a pollution control waste) or recovered.

Figure 34 shows that in 2001, hazardous waste was disposed of in Illinois at two private underground injection wells (467,692 tons), two commercial landfills (167,918 tons), one on-site landfill (14,917) and a land treatment unit (19,336 tons).

Figure 34



Sites Where Health Risks are Identified

Superfund sites

Restoration of contaminated properties depends on systematic site identification, investigation and remediation. These activities are administered by the Illinois EPA within seven site categories (1) Leaking Underground Storage Tank sites, (2) Superfund sites, (3) State Response Action sites, (4) Site Remediation Program sites, (5) Federal Facility sites, (6) Resource Conservation and Recovery Act sites, and (7) site assessment sites.

LUST sites are properties where petroleum or hazardous substances have leaked from underground storage tanks and the Illinois Emergency Management Agency has been notified. Contamination is frequently discovered during tank upgrade and removal activities. The owner or operator is responsible for taking immediate action to prevent further release, evaluate the extent of contamination, establish remediation objectives and perform corrective action, as necessary. In 2002, over 616 LUST incidents were reported in Illinois (26 percent decrease from 2001).

USTField Grants

In 2002, Illinois was one of only 10 states to receive multiple UST field grants. Illinois EPA was awarded a $100,000 grant for Freeport to address two old abandoned gas/service stations and a $84,700 grant for Waukegan to address a former gas station.

Superfund sites are the most serious hazardous waste sites in the nation and are listed on the National Priorities List (NPL). These sites require coordinated remediation efforts between federal and state authorities. In 2002, no sites were added to the NPL, and the total of listed sites remained at 47. These sites undergo removal actions (i.e. short term solutions) and remedial actions (i.e., permanent remedies). Since 1982, removal and remedial actions have been completed at 41 (or 87 percent) of these sites.

Response action sites are properties where the remediation of hazardous substances is completed by the state. Responsible parties are offered an opportunity to remediate sites at their own expense to avoid punitive damages. These sites include the 33 abandoned landfills being remediated in part by a $50 million appropriation from special legislation. In 2002, Illinois EPA conducted remediation activities at over 73 sites in 48 communities.

Site Remediation Program sites are remediated voluntarily under Illinois EPA's supervision and approval. Since 1989, the Illinois EPA has enrolled 2,011 sites into the SRP, with 289 (or 14 percent) of these sites enrolling in 2002 (a 6 percent increase over last year).

Soil Sampling at a Superfund Site

Federal facility sites are government-owned properties requiring remediation due to past spills or hazardous waste disposal practices. These sites range from abandoned mines and artillery ranges in remote locations to major weapons production facilities adjacent to urban areas. The Illinois EPA provides guidance and oversight to the federal agencies responsible for remediating 50 sites in Illinois.

RCRA sites are those facilities permitted to treat, store or dispose hazardous waste. Past and present activities at these facilities have sometimes resulted in releases of hazardous substances into the environment. Owners and operators are responsible for the investigation and remediation of contamination from their facilities (i.e., perform corrective action). In 2001, eight sites were added to bring the total number of RCRA sites, which are undergoing or have completed corrective action in Illinois to 44.

Site assessment sites are uncontrolled or unregulated facilities that undergo evaluation for remediation under Superfund or for brownfields redevelopment. In 2001, Illinois EPA evaluated 14 sites for the NPL using the Hazard Ranking System (i.e., U.S. EPA screening tool to assign numerical values on the relative potential of a site to pose a threat to human health or the environment) and conducted environmental assessments at six brownfields sites.

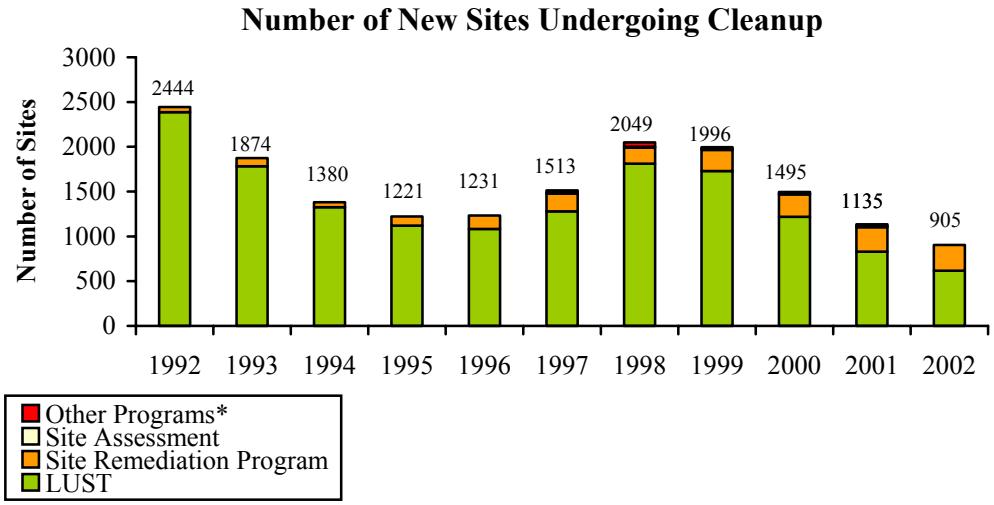
Downers Grove Groundwater Investigation

The Illinois EPA worked from May 2001 through January 2002 to sample private wells in unincorporated areas of Downers Grove and determine if groundwater contaminated with volatile organic solvents (VOCs) was threatening private drinking water wells. During that time, the U.S. EPA and the Illinois EPA began the investigation of possible source(s) of the VOC contaminants by sending letters requesting information and by interviewing businesses in and near the Ellsworth Industrial Park in Downers Grove. Preliminary physical investigations were also performed by both agencies to collect data to indicate which companies in the industrial park may have contributed to the groundwater contamination.

By the end of calendar year 2002, negotiations appeared hopeful, but no formal agreement with the PRP Group was reached. Tentative plans are to connect approximately 800 homes (currently on private wells) to the public water system. Under this arrangement, the residents would sign up with the Village of Downers Grove for a low-interest loan program (offered by the DuPage Water Commission to finance the connections), and the PRP Group would make the loan payments.

Figure 35 shows the number of new sites undergoing cleanup annually. In 2002, there were 905 new sites (a 20 percent decrease from the previous year).

Figure 35

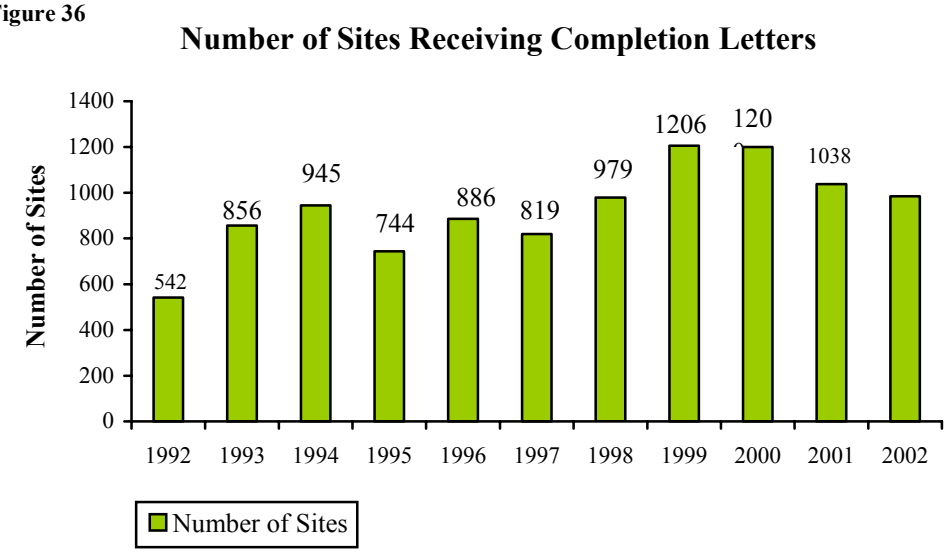


*Other programs include RCRA, Federal, State and Superfund facilities

Number of Sites Remediated

Once a site meets all cleanup program requirements, the Illinois EPA may issue a completion letter to the property owner or other persons as allowed by the cleanup program. The Illinois EPA issued a total of 985 completion letters in 2002, a five percent decrease from the previous years, as shown in **Figure 36**.

Figure 36



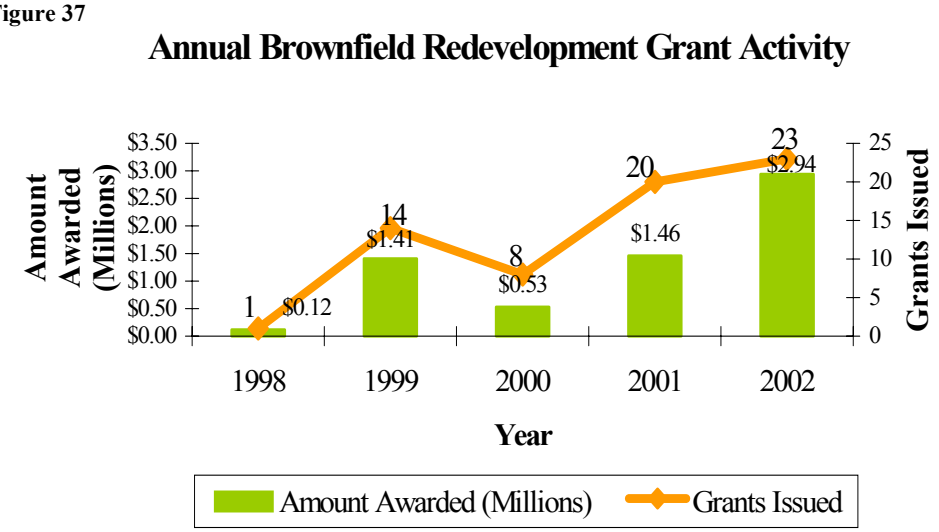
*Other programs include RCRA, Federal, State and Superfund facilities

Redevelopment of Abandoned Industrial and Commercial Properties

Abandoned or underused industrial and commercial properties that have not been purchased, sold or redeveloped because they are contaminated or presumed contaminated are referred to as brownfields sites. These sites are a community problem, reducing local employment opportunities and tax revenue, attracting vandals and open dumping, and lowering property values.

The Illinois EPA supports efforts to clean up brownfields properties so they may be put back into productive use. Besides offering technical assistance and innovative remediation methods, the Illinois EPA offers financial help for brownfields site investigations and remediation. **Figure 37** shows the grants awarded through the end of 2002.

Figure 37



Brownfields Revitalization Act – PL 107-118

Brownfields are abandoned, idled or underused industrial and commercial properties where expansion or redevelopment is complicated by real or perceived contamination. As businesses and industry avoid brownfield sites in favor of open spaces (i.e., new undeveloped locations in suburban and rural areas), resources shift from older communities to new ones. Abandonment of brownfields for open spaces results in urban blight, loss of habitat and farmland, reduced in infrastructure, and a deterioration of regional air quality as reliance on automobiles increase.

Uncertainties about owner liability and environmental costs are considerable disincentives to brownfields redevelopment and urban revitalization. To promote brownfields redevelopment, President Bush signed into law the Small Business Liability Relief and Brownfields Revitalization Act on January 11, 2002. This Act provides exemptions from Superfund liability for prospective purchases, innocent landowners and persons who clean up contaminated properties in compliance with state cleanup programs. The Act more than doubles the federal funds available to help states and communities restore brownfield sites through grant and revolving loan programs.

Many of the financial tools are designed for use by municipalities or private parties that did not cause the contamination but the communities are negatively affected by it. Since 1998, the Illinois EPA has offered technical and financial help to 89 communities to investigate brownfields as shown in **Figure 38 and 39.**

Figure 38 — Brownfields communities receiving financial assistance

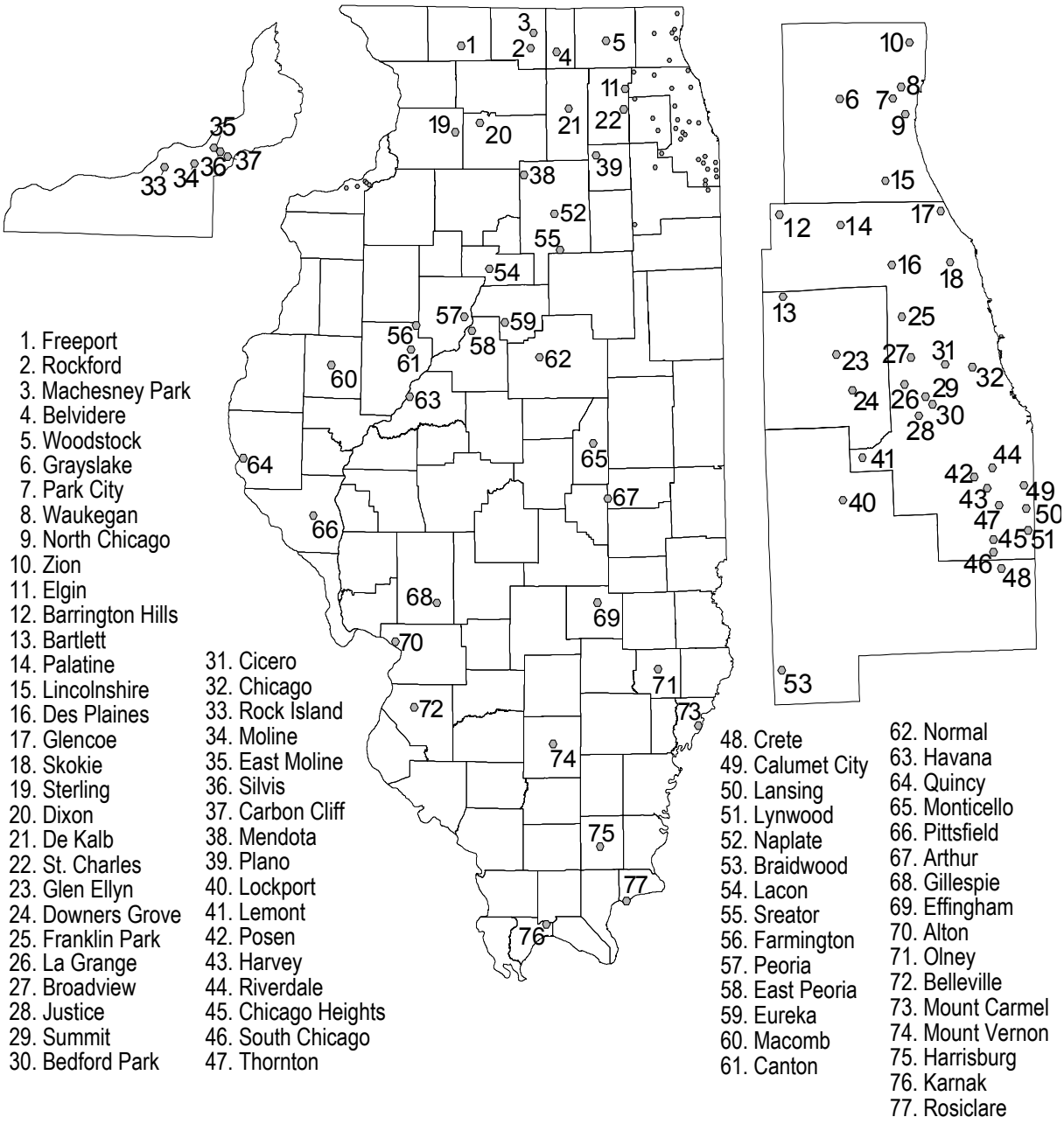
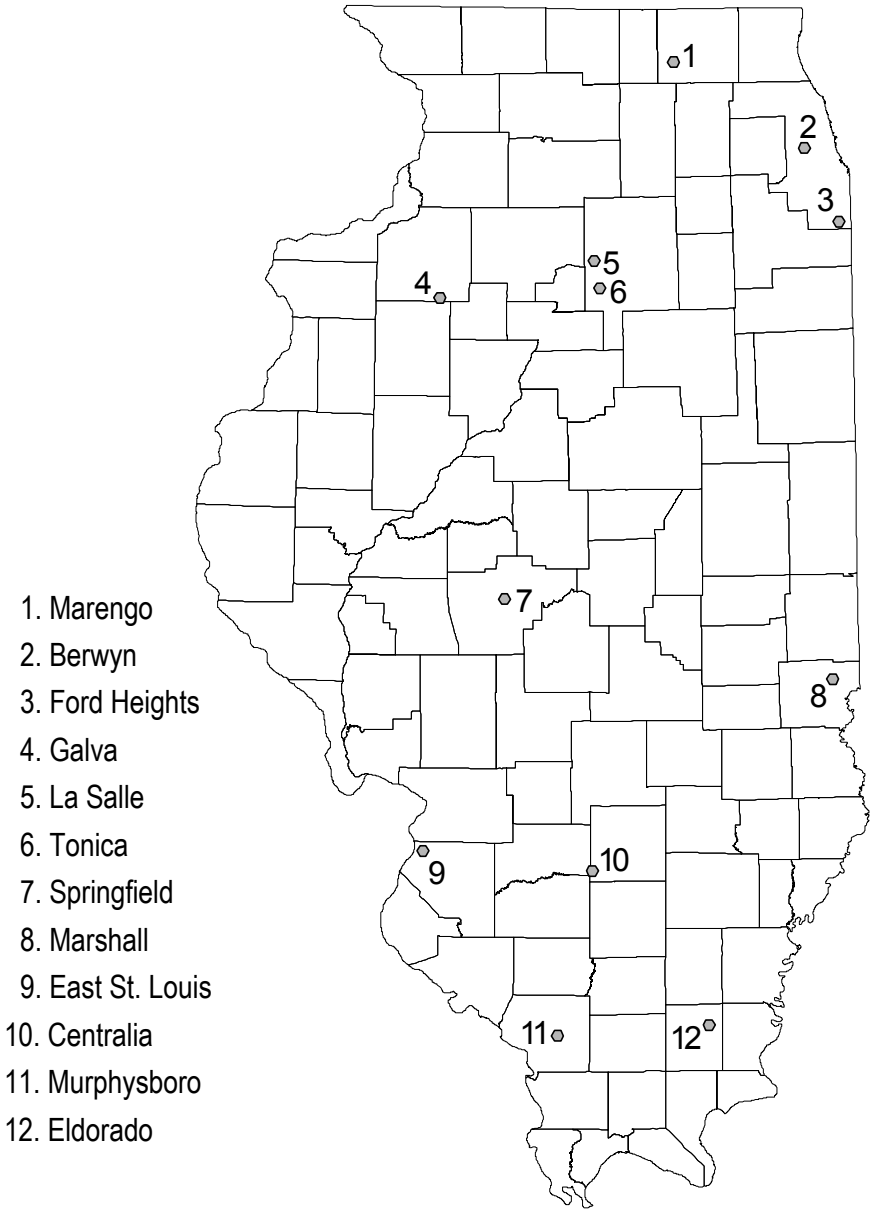


Figure 39 — Brownfields communities receiving technical assistance



1. Marengo
2. Berwyn
3. Ford Heights
4. Galva
5. La Salle
6. Tonica
7. Springfield
8. Marshall
9. East St. Louis
10. Centralia
11. Murphysboro
12. Eldorado

WATER QUALITY MANAGEMENT

Goals: ***CLEAN WATER*** – Illinois' rivers, streams and lakes will support all uses for which they are designated, including protection of aquatic life, recreation and drinking water supplies.

SAFE DRINKING WATER – Every Illinois Public Water System will provide water that is consistently safe to drink.

GROUNDWATER – Illinois' resource groundwater will be protected for designated drinking water and other beneficial uses.

WATERSHED CONDITIONS

A watershed is defined as the land area that drains into a river, stream, or lake; the watershed for a major river may encompass a number of smaller watersheds. The Agency has endeavored to identify five environmental objectives which together provide a general overview of the quality of watershed conditions within Illinois. This report begins with surface water and proceeds to groundwater.

Environmental Objectives:

1. Waterways with "good" water quality conditions will increase 5 percent from 2000 levels by the year 2005. (Stream mileage in "good" condition for aquatic life use reported in the cycle 2000 305(b) report was 62.5 percent).
2. The percentage of lakes in "good" or "fair" condition will remain constant from 2000 to the year 2005**.** (Lake acreage in "good" or "fair" condition for overall use reported in the cycle 2000 305(b) report was 97.0 percent).
3. The percentage of open shoreline miles in "good" condition will remain constant from 2000 to the year 2005. (Lake Michigan shoreline mileage in "good" condition for open waters aquatic life use reported in the cycle 2000 305(b) was 100 percent).

Routine sampling procedures

4. The percentage of the population served by community water supplies (CWS) who receive drinking water with no short-term (acute) or long-term (chronic) adverse health effects increases to over 95 percent by the year 2005 (an increase of 5 percent).
5. A declining trend of groundwater contaminants in CWS wells will occur through the year 2005.

Illinois – A Water Rich State

Illinois is blessed with abundant water resources. Approximately 87,110 miles of interior streams; 1,089 miles of border streams (Mississippi, Ohio, Wabash Rivers); 87,600 inland lakes and ponds (3,041 of which have a surface area of six acres or more); and 63 miles of Lake Michigan shoreline are available to Illinois residents for fishing, swimming, boating, public water supply, and various other uses. Principal aquifer areas in Illinois cover approximately 32,000 square miles or 58 percent of the state. Groundwater supports drinking water use for 4.1 million Illinois residents as well as other commercial, agricultural, industrial, mining, thermo-electric, and special resource uses.

The Clean Water Act – Assess Your Water Resources


Sampling

The Federal Clean Water Act (CWA), signed into law on October 18, 1972, is landmark legislation that has lead to national water quality improvements over the last 30 years. Section 305(b) of the CWA requires states to assess the quality of their water resources. In essence, this section of the CWA asks us if Illinois waters are "fishable" and "swimmable." Can you eat the fish you catch? Can the water be used as a source of drinking water?

To make these assessments, the Agency collects a wide variety of data. Water and sediment is tested for chemical contamination. Fish and macro invertebrates (aquatic bugs) are collected, counted and identified since the types of fish and bugs found are directly related to the quality of water they live in. Habitat and physical data are also collected – a cool-water, fast-moving, cobble-bedded stream is quite different and typically of better quality than a warm-water, slow-moving, silt-bottom stream. Phytoplankton (algae) and macrophytes (aquatic plants) are looked at in lakes.

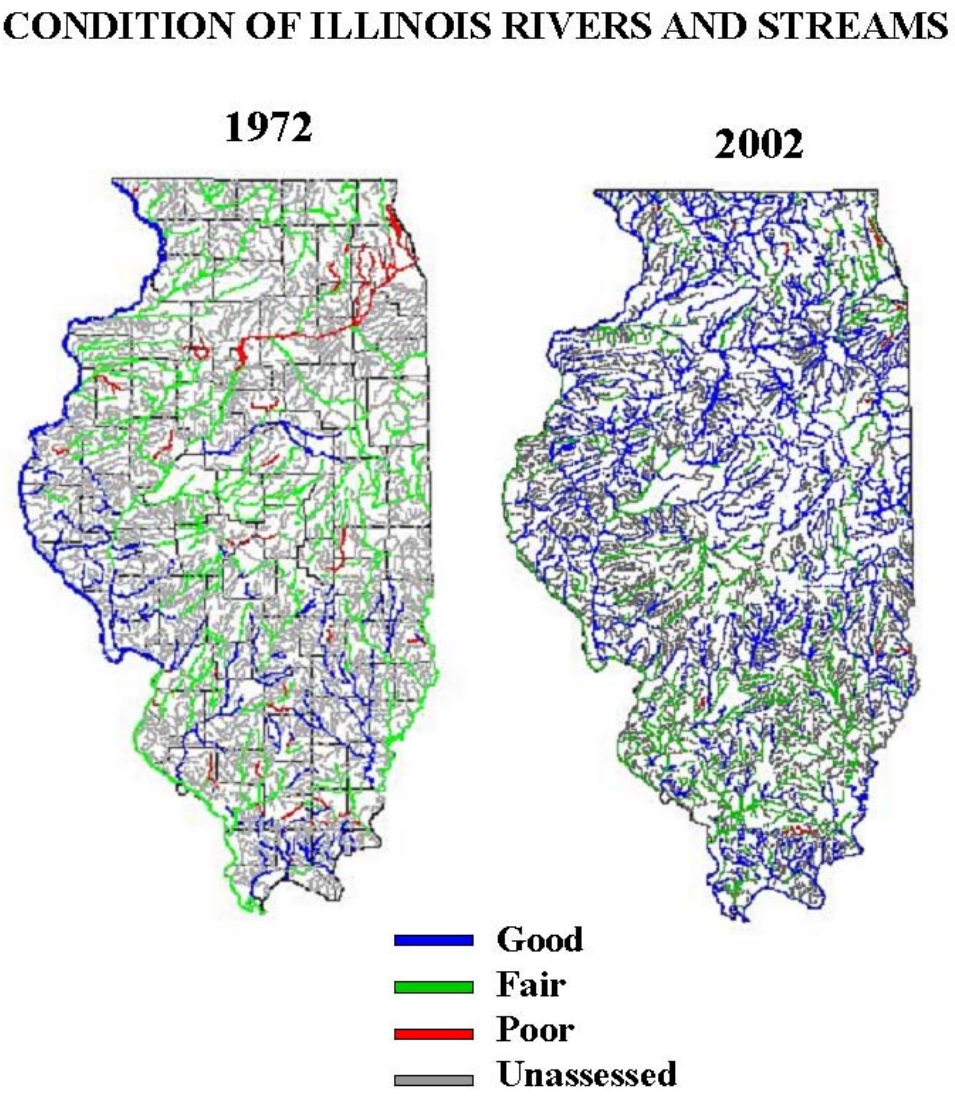
Data collected is assessed against established standards, criteria and other indices to determine if a lake, stream or groundwater should be characterized as "good," "fair" or "poor" for each use assessed. The Agency assesses six main uses in lakes and streams including aquatic life, fish consumption, swimming, public water supply, indigenous aquatic life and recreation. While the condition of every use is significant, extra information is provided below for aquatic life, fish consumption, swimming and public water supply uses.

Surface Waters – Are We Attaining Our Environmental Objectives?

Environmental Objective 1. Waterways in "good" water quality conditions will increase 5 percent from 2000 levels by the year 2005.

In 2000, 62.5 percent of Illinois rivers and streams were in "good" condition based on the aquatic life use assessment. In 2002, 64.5 percent were rated "good". This shows progress towards the goal of 67.5 percent by 2005. (Since 1972, the number of river miles in "good" condition for aquatic life use has increased from 34.7 percent to 64.5 percent in 2002.

Figure 40



Aquatic life use assessment of rivers and streams in 1972 and in 2002.

Environmental Objective 2. The percentage of lakes in "good" or "fair" condition will remain constant from 2000 to the year 2005.

In 2000, 97.0 percent of Illinois inland lakes were in "good" or "fair" condition based on the "overall use" assessment (an aggregated assessment of several individual uses). In 2002, 97.4 percent were rated "good" or "fair". This shows a relatively constant number of inland lakes that fully or partially support all uses. (Since 1972, the number of lake acres in "good" or "fair" condition has increased from 72.2 percent to 97.4 percent in 2002).

Environmental Objective 3. The percentage of Lake Michigan open shoreline miles in "good" condition will remain constant from 2000 to the year 2005.

In 2000, 100 percent of the 63 miles of Lake Michigan open shoreline were rated "good" for aquatic life use. In 2002, all 63 miles continue to maintain a "good" rating.

Assessment Results for All Uses

Table 1 below shows how the Agency assessed the quality of Illinois rivers and streams, inland lakes, and Lake Michigan for four major uses in 2002. When assessing aquatic life use, we primarily ask "Do the fish and aquatic bugs have a healthy environment in which to live?" For fish consumption use, "Are the fish safe to eat?" For swimming use, "Is the lake or stream environment safe to swim in?" And for assessing public water supply use, "Is the water of high enough quality that it can be used as a source of drinking water with conventional treatment?"

Table 1. Assessment Results for Various Water Resource Uses – 2002

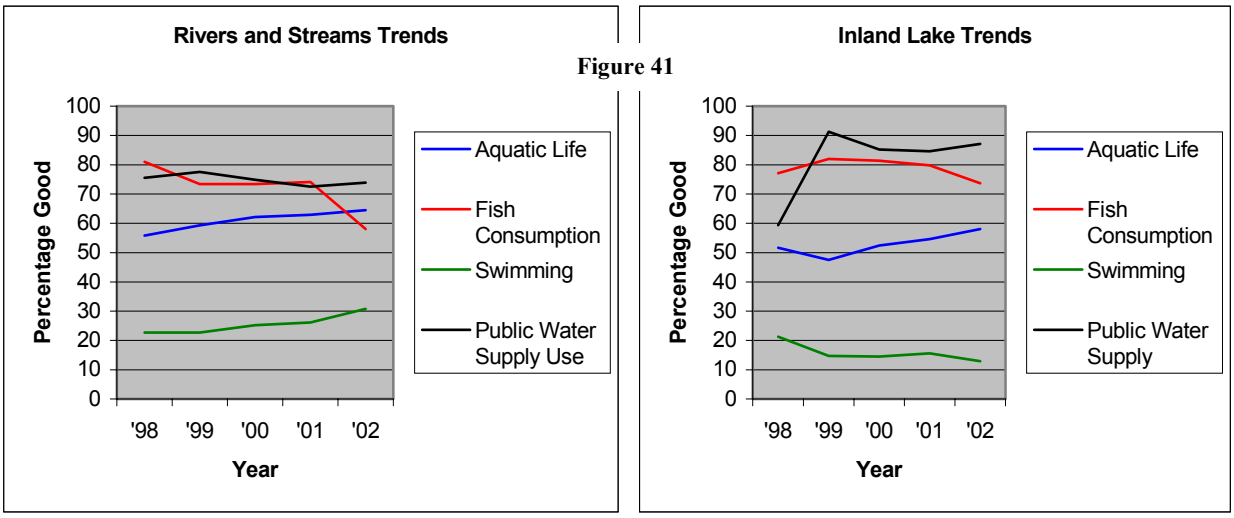
	Rivers and Streams (15,491 miles assessed)			Inland Lakes (148,134 acres assessed)			Lake Michigan (63 shore miles assessed)		
Use Assessed	*% Good*	*% Fair*	*% Poor*	*% Good*	*% Fair*	*% Poor*	*% Good*	*% Fair*	*% Poor*
Aquatic Life	64.5	34.1	1.4	58.1	41.9	0.0	100.0	0.0	0.0
Fish Consumption	58.1	37.5	4.4	73.7	26.3	0.0	0.0	0.0	100.0
Swimming	30.8	42.5	26.7	12.9	78.9	8.2	---	---	---
Swimming - Open Waters	---	---	---	---	---	---	100.0	0.0	0.0
Swimming - Lake Beaches	---	---	---	---	---	---	24.5	25.5	50.0
Public Water Supply	73.9	26.1	0.0	87.1	12.9	0.0	100.0	0.0	0.0

What Has Happened Over the Last Five Years?

A look at the number of rivers and streams and inland lakes rated as "good" for each of the four major uses assessed since 1998 provide additional water resource quality information (**Figure 42**). The reviewer should be cautioned, however, that the graphs do not represent a formal, statistically valid trends analysis. Thus, the appearance of either a positive or negative trend can be influenced by many things, including differences in annual monitoring activity; annual

weather conditions, particularly rainfall amount, frequency and intensity; changes in how data are assessed due to improved knowledge and technology; and changes in the standards or criteria used to determine whether the water resource should be judged as "good," "fair," or "poor."

Figure 41. Water Resource Assessment History – 1998-2002



Special Issues

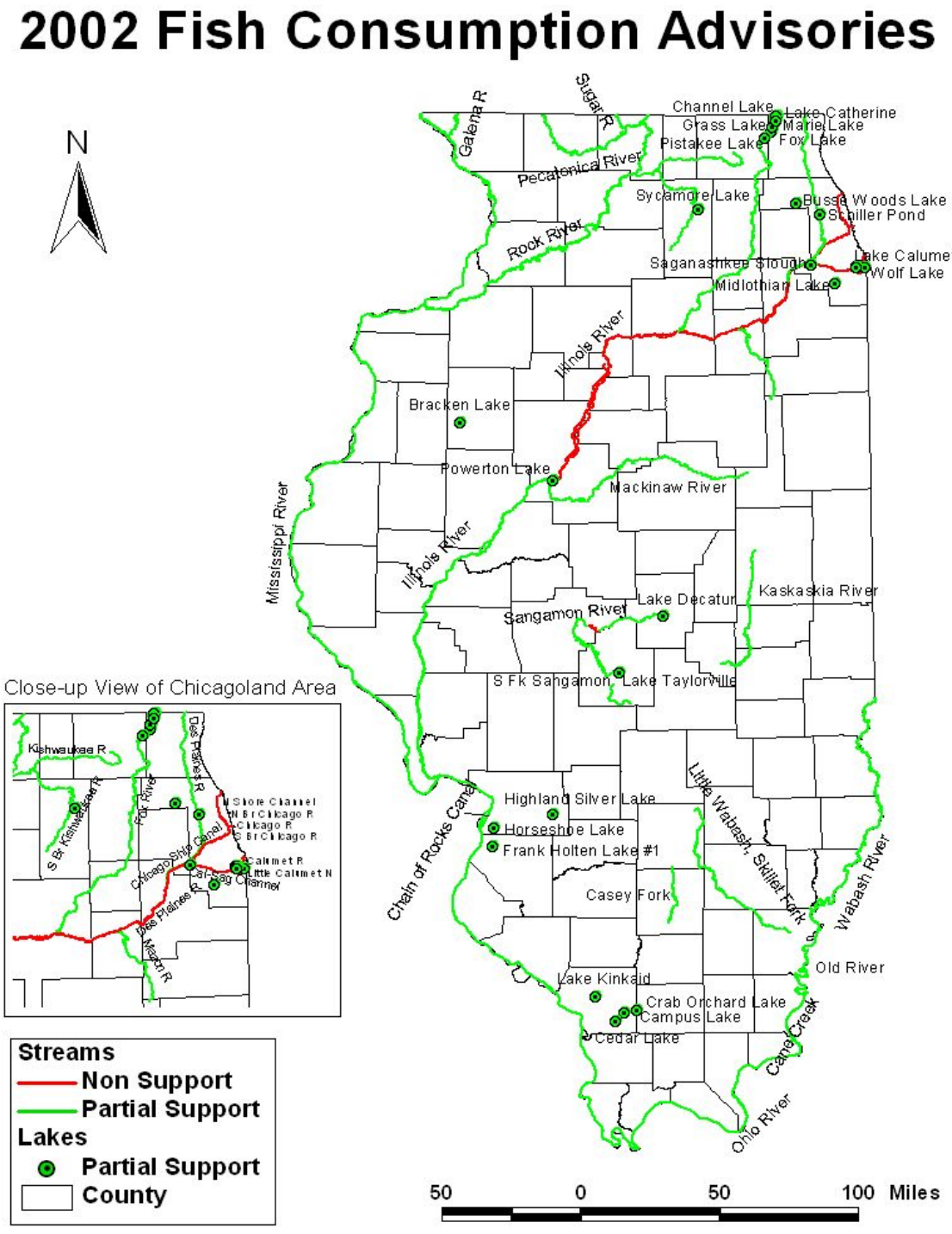
Fish Consumption Advisories and Mercury

Fish are able to accumulate contaminants and are thus a key indicator for determining water quality. Contaminant levels in fish are monitored through a cooperative effort between the Illinois Departments of Agriculture, Natural Resources, Nuclear Safety, Public Health, and the Illinois Environmental Protection agency. Fish samples are collected from streams, lakes, and impoundments and Illinois' portion of Lake Michigan. Pollutants causing advisories in Illinois fish include the pesticide chlordane, the industrial chemical polychlorinated biphenyls (PCBs) and the heavy metal mercury. Since bans have been imposed for these compounds (except mercury) during the mid- and late-70's, there has been a considerable reduction in the concentrations of these pollutants found in fish. The Agency expects this trend to continue over the next five years as a result of decreases in the levels of the contaminants remaining in the environment. As the Agency continues to collect samples and expand its fish contaminant monitoring program, more information will become available to set a specific numeric goal. **Figure 42** shows the lakes and streams where limited consumption is recommended, or where no consumption of certain species of fish is recommended.

Since 2002, there has been a statewide fish consumption advisory for mercury. The advisory recommends that women of childbearing age and children under 15 eat no more than one meal per week of predator species. Additionally, more stringent advisories are in place on seven water bodies as a result of high mercury levels in fish. This situation results mainly from a

change, as with other contaminants, from using an advisory level based on the U.S. Food and Drug Administration Action Levels for commercial fish to using Health Protection Values developed based on more recent health effects data. When this change was made, previously-detected levels of mercury in fish tissue from around the state became significant, compared to the Health Protection Value, triggering the need for a statewide advisory.

Figure 42



Advisory information for specific water bodies is available in the current Illinois Fishing Information Booklet published by the Illinois Department of Natural Resources, and on the Illinois Department of Public Health website, at http://www.idph.state.il.us/envhealth/fishadv/fishadvisory02.htm.

Lake Michigan Aquatic Life Use Quality and Swimming Beach Closures

Lake Michigan forms the northeastern portion of Illinois' border and serves as a center for recreation for many Illinois residents and others from around the world. As shown below in **Figure 43**, the quality of Lake Michigan has improved dramatically over the past 30 years. All 63 miles of open water Lake Michigan shoreline miles are considered to be in "good" condition for aquatic life use. However, resource quality from a swimming use perspective is a different story. In 2002, the Lake Michigan Federation issued a press release stating that Lake Michigan beach closings and advisories have increased dramatically since 1998 (**Figure 44**). The cause (s) for the increased number of closings has not been definitively determined, but the following possible reasons have been cited: seagull and other bird droppings, pet and vagrant human droppings, urban runoff (yards, roofs, roads, business and industrial sites), runoff from parks, contaminated sediments, bacterial contamination from swimmers, bacteria in beach sand, sanitary and combined sewer overflows, increased monitoring, and fluctuations in Lake Michigan water levels and rainfall. A study conducted by the Lake County Health Department and funded by the North Shore Sanitary District in 2002 determined that sea gull feces was the primary source of bacteria at four Lake Michigan beaches. A second wave of testing is planned for five beaches in summer 2003. Results will be reviewed by a variety of organizations including the state and Lake County Departments of Public Health, Illinois EPA, Lake Michigan Federation, Lake County Board, Chicago Medical School, North Shore Sanitary District and independent scientists.

Lake Michigan Beach Closings and Advisories

Figure 43

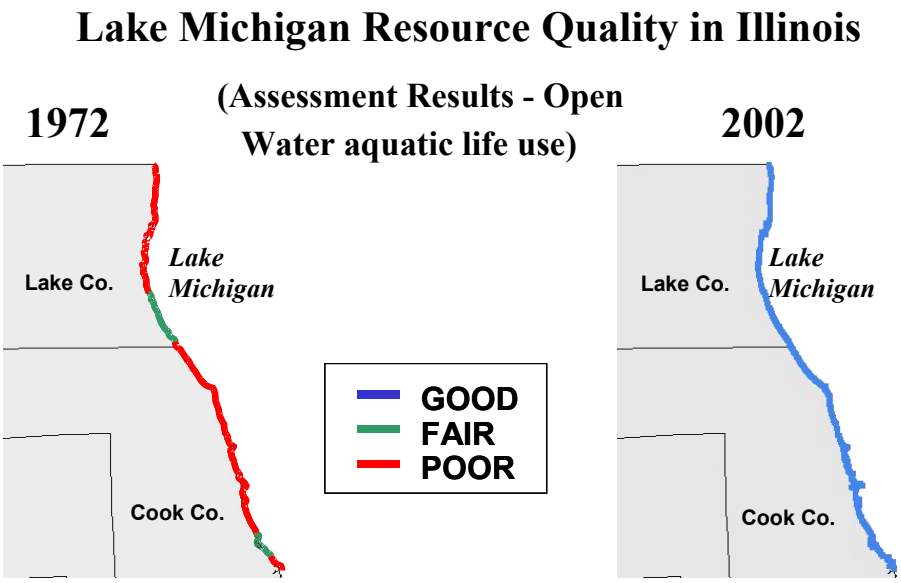
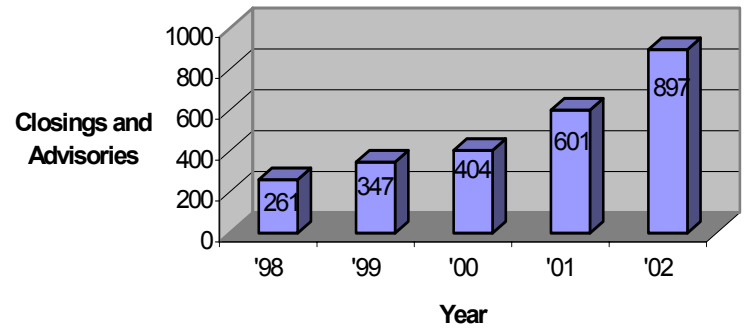


Figure 44



Illinois River

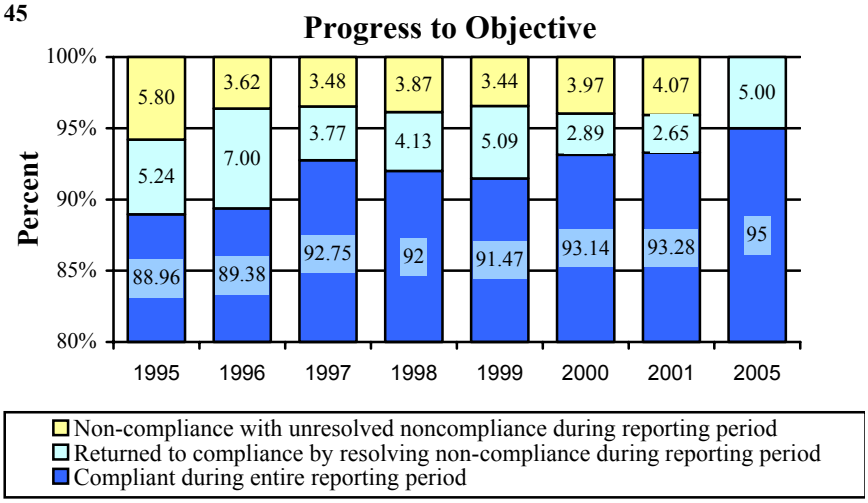
In the 1970s, the Illinois River was a dirty stream. The river was an environmental nightmare – a receptacle for trash and industrial waste, choked with silt and a haven for polluting barge traffic. But nearly 30 years of point source pollution control efforts, and more recent efforts to reduce nonpoint source pollution, have demonstrably improved water quality. As the water cleaned up, the fish returned. Thirty years ago, fisherman mostly caught catfish and carp. Today, anglers from throughout the Midwest flock there to catch walleye, sauger, crappie and largemouth, smallmouth and white bass. The Illinois River is a modern-day success story.

Environmental Objective 4. The percentage of the population served by community water supplies (CWS) who receive drinking water with no short-term (acute) or long-term chronic) adverse health effects increases to over 95 percent by the year 2005 (an increase of 5 percent).

Persons Served by Compliant Water Supplies

Safe drinking water should be free of contaminants that have the potential to cause either short-term or long-term health effects. During calendar year 2002, the percentage of persons served by Illinois community water supplies that were compliant with all health requirements, maximum contaminant levels, treatment techniques, or health advisories (that have been in effect for more than three years) was 93 percent. Progress toward the Year 2005 objective is illustrated as Percent Population Served by Community Water Supplies Compliant with Health Requirements as provided in **Figure 45**. The 2002 compliance percentage is over a four percentage improvement in compliance from calendar year 1995. Compliance efforts will continue to focus on minimizing the frequency and duration of excursions and the development of enforceable schedules for the implementation of corrective action plans to achieve sustained compliance.

Figure 45



The number of water supplies in full compliance with all health requirements during 2002 was 1,644, or 90 percent, of the community water supplies in Illinois.

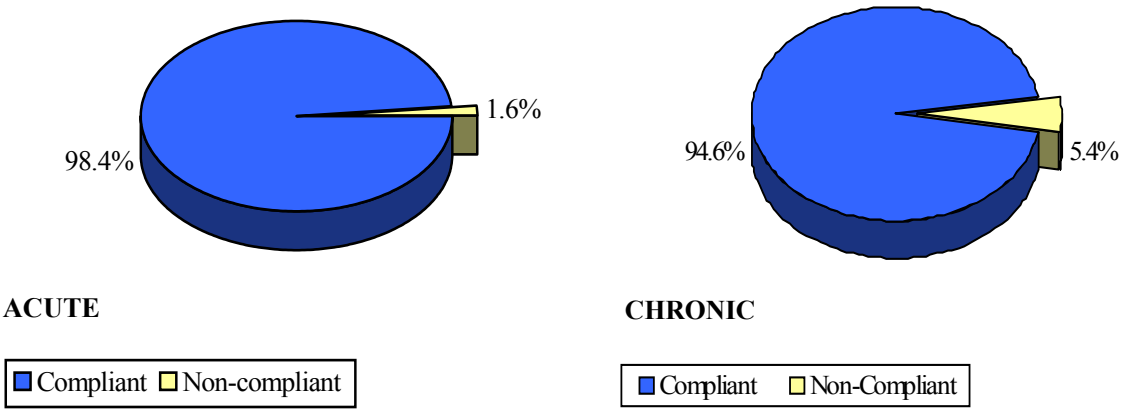
Persons Served by Compliant Water Supplies

During calendar year 2002, the percentage of persons served by Illinois community water supplies that were compliant with all health requirements was 93 percent. This compliance percentage represents over a four-percentage improvement from calendar year 1995 and reflects continued progress toward the calendar year 2005 goal of 95 percent. It is important that safe drinking water be free of contamination that has the potential to cause either short-term or long-term health effects. The compliance outcome is significant because a total of 10,603,318 persons in Illinois were provided safe drinking water from water supplies compliant with all health requirements during 2002. This represents an additional 797,873 persons served by compliant water supplies when compared to 1995.

Figure 46 shows that over 98.4 percent of the population served by Illinois community water supplies received drinking water in compliance with acute (short-term) health requirements, and over 94 percent were in compliance with chronic (long-term) health requirements. It is important to note that most non-compliance was short in duration, and the potential for health risk was minimized through prompt corrective action by the water supplies. Supplies with microbial problems (bacterial or turbidity non-compliance) are required to issue boil orders. Supplies exceeding the nitrate maximum contaminant level are required to provide bottled water for infants until the levels are consistently well below the maximum contaminant level.

Compliance with Acute and Chronic Requirements (2001 data)
(Percent of Population Served)

Figure 46



Lead and Copper Rule Compliance

The lead action level (15 parts per billion of lead) when exceeded in more than 10 percent of the water samples collected in consumers homes, requires the water supply to implement a treatment technique or enforceable procedure which would prevent anticipated adverse health effects and ensure that lead or copper is controlled in the drinking water.

In 2002, 1,789 water supplies, or approximately 98 percent of community water supplies were below the lead action level. These water supplies serve 99 percent of the population.

Generally, non-compliance is for a short period of time because the treatment is quickly adjusted to required ranges.

Environmental Objective 5. A declining trend of groundwater contaminants in CWS wells will occur through the year 2005.

There are approximately 5,534 groundwater dependent public water supplies in Illinois, of which 1,195 are community water supplies (CWS). To assess the groundwater resources in the state, the Illinois EPA utilizes aquifer classes that were developed by O'Hearn and Schock (1984). These "principal aquifers" are defined as sand and gravel (44 percent of the CWS wells), shallow bedrock (24 percent of the CWS wells) and deep bedrock (20 percent of the CWS wells) aquifers. In addition, 5 percent of CWS wells utilize multiple aquifers and are classified as mixed and 6 percent of the wells do not have sufficient geological information to determine their aquifer classification.

Based upon the evaluation conducted for the 2002 Illinois Water Quality Report, groundwater quality in CWS wells using sand and gravel, deep bedrock and mixed "principal aquifers" are experiencing steady-state or slightly decreasing levels of contaminant detections. However, the CWS wells using shallow bedrock aquifers show a slight upward trend in the number of wells that have an increase in levels of contamination.

PROGRAM PERFORMANCE

Program Objectives:

1. The total pollutant load discharged in the year 2005 will be 99.5 percent compliant with permit discharge limits.
2. Fifty percent of the community water systems in the state will have source water protection programs in place by 2005.
3. The percentage of groundwater recharge areas with protection programs established or under development will increase to 45 percent by 2005. Furthermore, 90 percent of the state's population utilizing community water supply groundwater sources will have protection programs in place, or under development, by the year 2005.

The program performance results follow the same sequence as used for the watershed conditions section. The Agency's effort to track the level of progress for maintaining clean and safe water in Illinois is described below.

Pollutant Load Discharged

Wastewater from an industry or a municipality can contain different levels of dissolved or suspended matter. All wastewater discharged from industrial or municipal sources into Illinois waterways must meet certain limits on pollutant discharges. These limits are set to assure compliance with water quality standards. Compliance with these permit limits is an indication of the minimization of potential stress being placed on our water resources.

Wastewater treatment

By identifying critical watersheds and facilities with significant levels of non-compliant loads the Illinois EPA prioritizes its efforts at eliminating the most significant pollutant loads impacting our water resources. This effort currently includes the evaluation and prioritization of 2,282 facilities in Illinois or all permitted wastewater facilities with discharge monitoring data available. (Data submitted in non-standard formats are currently not available electronically.) **Figure 47** illustrates the percentage of the total pollutant load discharged from all permitted facilities with discharge monitoring data which was compliant with permit discharge limits during 1995 through 2002.

The 2005 program objective of 99.5 percent was realized this year with a compliant load percentage of 99.62 percent for calendar year 2002. The percent compliant load has increased for seven consecutive years from 1995 to 2002 with an increase of 0.216 percent during 2002.

Figure 47

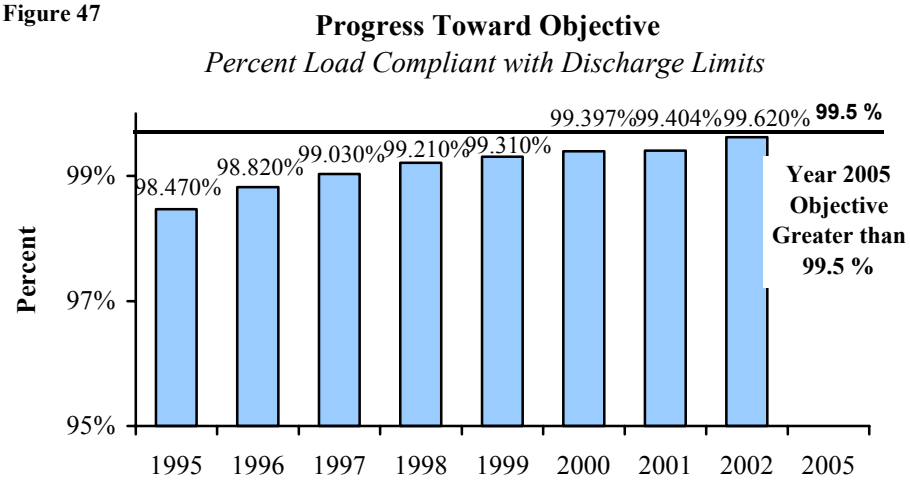


Figure 48

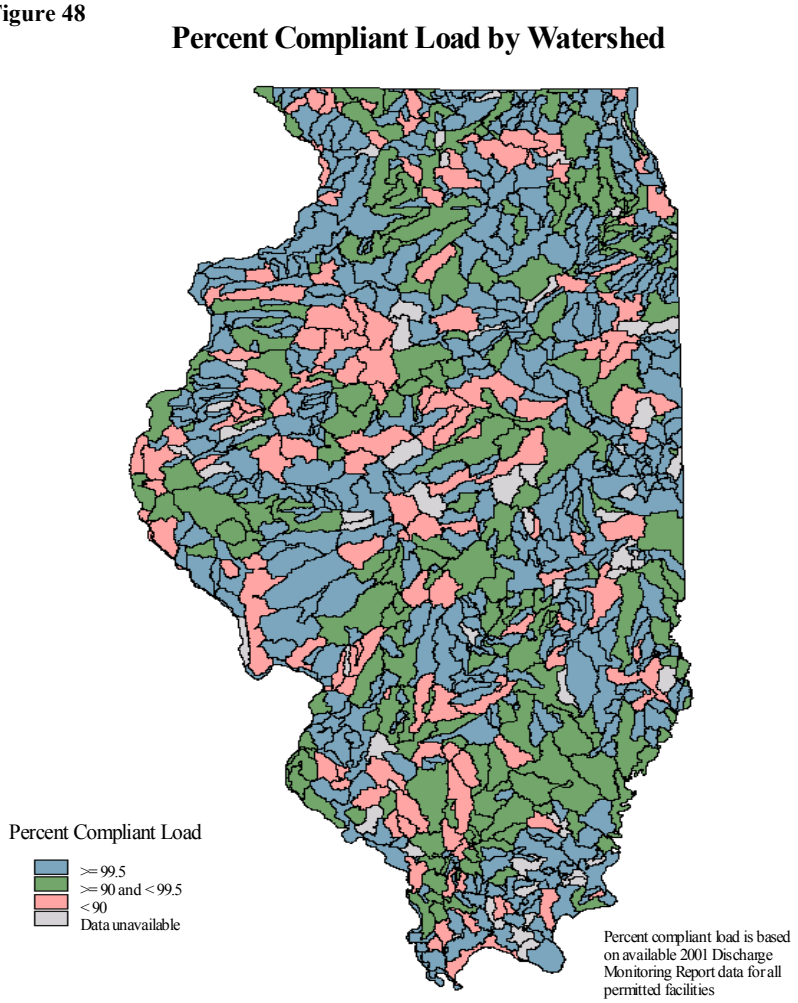


Figure 48 provides an illustration of the percentage of compliant load by watershed for all permitted facilities based on discharge monitoring data.

Conventional vs. Priority Pollutants

Further analysis of permit exceedances shows that over 99 percent of the non-compliant pollutant loading relates to conventional pollutants and less than 0.1 percent to priority pollutants (specific metal and organic chemicals).

Watershed Plans

The Illinois EPA continues to work towards a watershed approach in the development and implementation of its ground and surface water programs. The Agency coordinates watershed activities with other state and federal natural resource agencies. Watershed Implementation Plan development utilizing 104(b)(3) funds has been completed in 15 watersheds. Two additional Watershed Implementation Plan development efforts utilizing Clean Water Act Section 319 funds are complete. The Macoupin Creek (Lower Illinois River basin) and Little Vermilion River (Upper Illinois River Basin) Watershed Restoration Action Strategies (WRAS) were completed in May 2003. These documents are stakeholder-driven watershed plans tailored to address the causes and sources of impairment listed in the Illinois Water Quality (305 b) Report, and are currently being utilized to stimulate local interest and secure funding for Best Management Practice implementation to address the identified concerns. In addition to the two recently completed WRAS documents, the Agency is committed to using Clean Water Act Section 319 funds to implement WRAS and other comparable watershed plans that are submitted to and approved by the Agency. These watershed plans can vary from watershed to watershed, as the local issues vary. The intent of the watershed plans, however, is to protect and restore the water quality of Illinois' lakes and streams. Each of these plans is a locally led exercise identifying causes and sources of impairment, and unique resources and high quality areas that need protection. Each plan sets in place a schedule and course of action for implementing restoration/protection practices.

TMDLs in Illinois

Total Maximum Daily Loads are being developed for water bodies that do not meet the uses for which they have been designated, i.e., swimming, drinking water supply. Aquatic life use waters not meeting designated uses are considered impaired and are required by Section 303(d) of the federal Clean Water Act to have TMDLs developed. Illinois' impaired waters are identified in the Illinois 2002 Section 303(d) List.

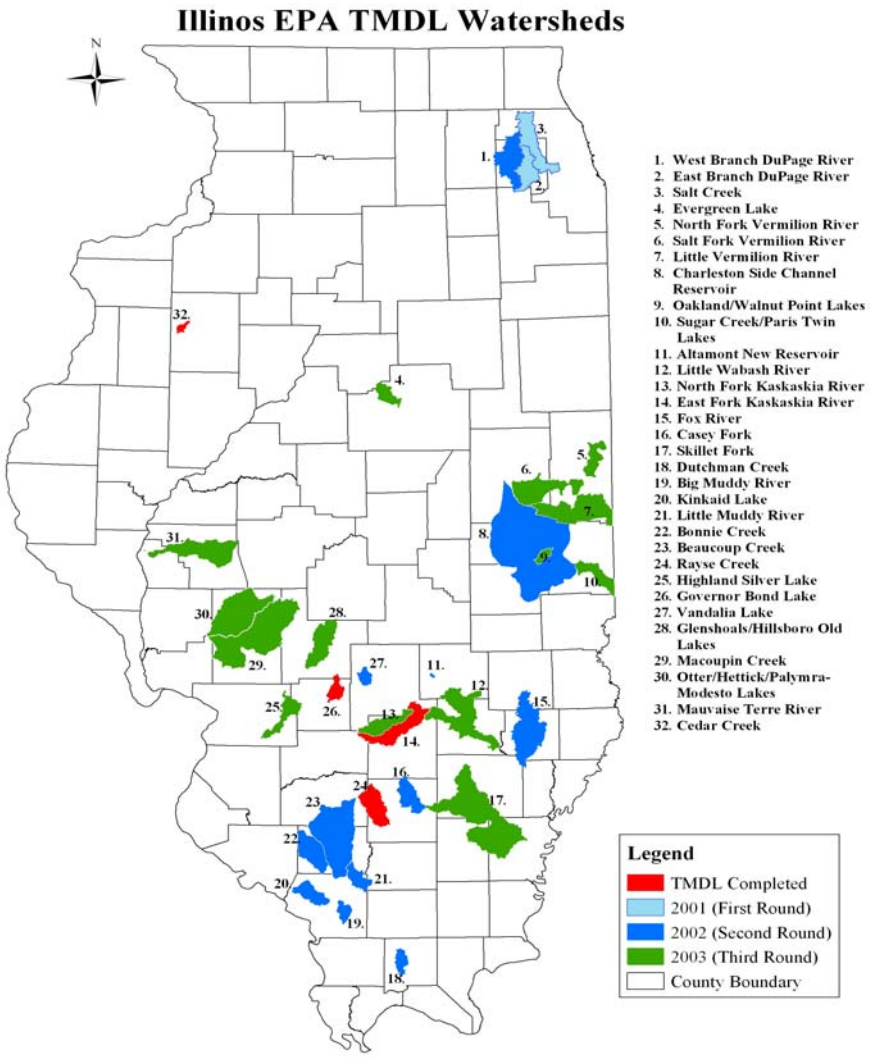
Illinois EPA contracts with consultants to develop TMDLs on a watershed basis. TMDLs were in the process of being developed for impaired water bodies in 15 watersheds (**Figure 49**). TMDLs have been completed and approved by U.S. EPA for Cedar Creek and Governor Bond Lake. The TMDL process consists of data collection and analysis, methodology development and model selection, model development and calibration, scenario development, development of an implementation plan, and public outreach. Included in the process are public meetings, the first of which is held at the beginning of each TMDL to notify the public of the watersheds for which TMDLs will be developed, to announce the consultant (s) selected for each watershed, to seek comments from the public, and to generate local support.

The second public meeting is held in the watershed at the beginning of the TMDL development process. These meetings consisted of explaining the TMDL program to the local watershed community, sharing the information/data collected and the methodology for development of the TMDLs. The main focus of the meeting is to seek public input, additional information/data, and generate local support.

When the TMDL has been completed, a final public meeting is scheduled. All comments received during the hearing are assembled and answered, and become the responsiveness summary attached to the final TMDL.

Of the 15 watersheds under TMDL development, three have been submitted to U.S. EPA for approval (Rayse Creek, East Fork Kaskaskia, and Charleston Side Channel Reservoir). The 12 remaining watersheds are in the final stages of development. An additional 15 watersheds have been selected for TMDL development beginning in the 2003-2004 timeframe. These 15 watersheds were selected from the high priority list of the state's 303(d) List. This round of TMDLs will be developed in three stages: data review, additional data collection, and modeling and implementation plan development. The second stage will consist of additional data collection, such as water quality monitoring, that will aid in filling data gaps for parameters such as water chemistry or flow. This stage was not performed for previous TMDL developments, and has been added in order to create a more robust and defensible TMDL.

Figure 49



Source Water Protection

Protection of Illinois' valuable groundwater resources is critical. During 1995, groundwater withdrawals averaged 953 million gallons per day (MGD). Groundwater in Illinois supports domestic (drinking water use), commercial, agricultural, industrial, mining, thermoelectric and special resource uses. Special Resource Groundwater is described as the groundwater contributing to highly sensitive areas such as dedicated nature preserves. In addition, groundwater in Illinois supports ecologically sensitive areas such as the Karst Plain located in Monroe, St. Clair and Randolph Counties.

- 70 percent of the groundwater-dependent CWS in the state withdraw water from confined aquifers that have natural geologic protection from surface and near surface activities
- 30 percent of the groundwater-dependent CWS in the state withdraw water from unconfined aquifers that are susceptible to pollution from land use and other surface activities

The Illinois EPA has made considerable progress in groundwater protection through such initiatives as the groundwater quality standards, Regional Groundwater Protection Planning Programs, regulated recharge area rulemaking, recharge area pollution prevention technical assistance, and the Safe Drinking Water Act Monitoring Waiver Program. Illinois continues to address the need for protecting groundwater by accomplishing the mission set forth in the Illinois Groundwater Protection Act and through federal, state and local partnerships to establish groundwater protection programs.

- Approximately 400,000 residences of the state are served by their own public wells
- Approximately 4.1 million people use groundwater as a source of public water supply in Illinois
- There are 5,534 groundwater dependent public water supplies in the state
- 1,195 of these public water supplies are community water supplies
- These community water supplies serve about 3.3 million people

These partnerships have utilized regulatory and non-regulatory programs to achieve success. Source water assessment and protection information is now available to the public through an Internet geographic information system (GIS).

As illustrated in **Figure 50**, Illinois EPA is measuring the population served by systems with protected unconfined and confined aquifer resources. Since approximately 1.2 million people in Illinois rely on susceptible unconfined aquifers for their source of drinking water, Illinois has placed added emphasis on the protection of these groundwater systems.

Figure 50

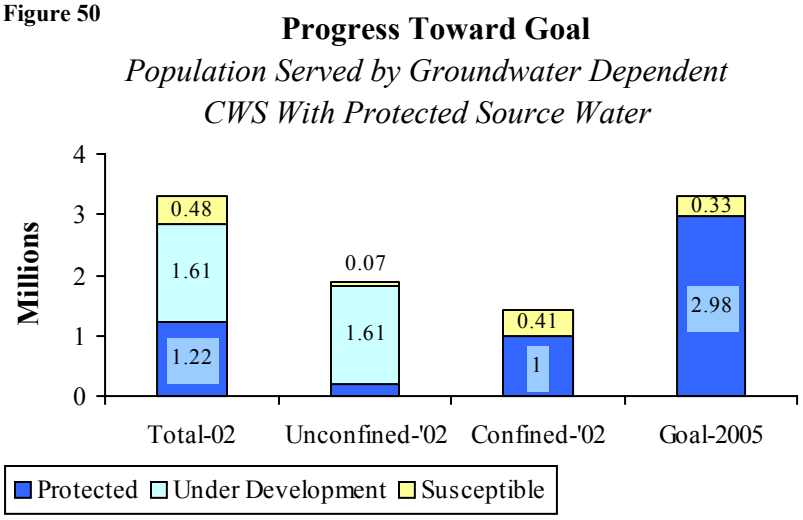
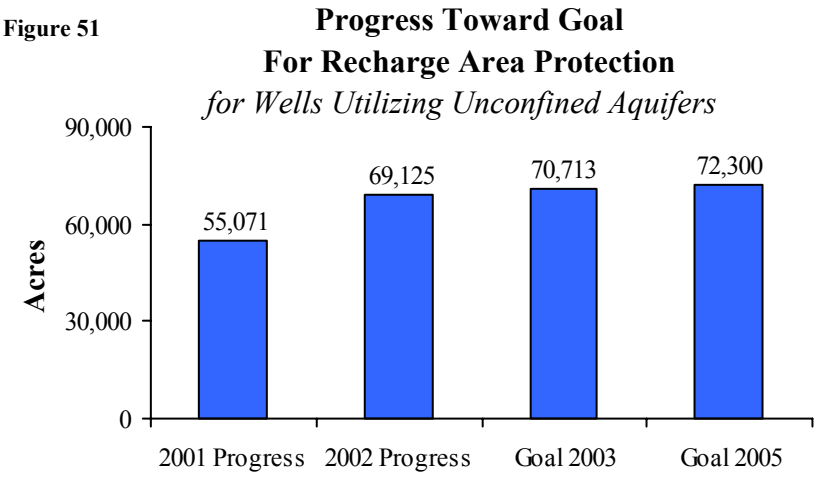


Figure 51



Protecting the land surface areas around susceptible unconfined aquifer wells (recharge areas) can help prevent contamination of groundwater. Coupled with the population served, as documented in **Figure 51**, measuring the acres with protection programs under development or in place provides an effective indicator of Illinois' progress in protecting these susceptible areas.

Waukegan Harbor

Waukegan Harbor, Illinois' only Great Lakes Area of Concern (AOC), is located approximately 40 miles north of Chicago on the west shore of Lake Michigan in Waukegan, Illinois. In 1975, polychlorinated biphenyls (PCBs) were discovered in Waukegan Harbor sediments. In 1981, the U.S. and Canadian governments identified Waukegan Harbor as one of 43 Areas of Concern, or severely degraded geographic areas located within the Great Lakes Basin.

Illinois EPA continues work to determine appropriate actions for remediation and restoration of the beneficial uses of Waukegan Harbor. Passage of the Great Lakes Legacy Act and identification of new sites for disposal of the dredge spoil, have resulted in renewed and revitalized interest in dredging the Waukegan Harbor approach channel, inner harbor and north

harbor. U.S. EPA's finalization of Area of Concern delisting guidelines in late 2001 along with increased support and coordination between state and federal agencies, local citizens and elected officials has produced greater optimism that completion of remaining remediation and delisting could be completed in the near future. The United States Army Corps of Engineers (U.S. ACOE) estimates that 350,000 cubic yards of harbor sediment require removal. These sediments contain low levels of polychlorinated biphenyls (PCBs). Recent sampling of the harbor indicates that the average concentration of PCBs in the harbor is approximately 2.5 ppm. Illinois EPA will maintain close coordination with the U.S. ACOE, U.S. EPA Region 5, local officials and the Waukegan Harbor Citizens Advisory Group (CAG) as FFYs 2004 and 2005 are viewed as a significant window of opportunity to facilitate remediation.

Waukegan Harbor

Municipal Sludge Production

Approximately 403,254 dry tons (DT) of sludge was produced in 2002 by 523 publicly owned treatment facilities or private utility companies.

Municipal Sludge Usage and Disposal

Of the three methods of sludge disposal, landfilling, incineration and beneficial reuse, beneficial reuse represents the most environmentally friendly method of disposing of sludge. Illinois has no sludge incinerators eliminating this method of sludge disposal as an option for Illinois' municipalities. Beneficial reuse allows for extended use of existing landfill capacity by diverting approximately 950,000 cubic yards per year of sludge to agricultural application from landfill disposal. The use of stabilized sewage sludge as a fertilizer/soil amendment allows the recycling of nutrients into the ecosystem. Beneficial reuse positively impacts the Illinois economy in two ways; first by reducing operating costs for municipalities by allowing a cheaper alternative to landfilling their sludge, and second, beneficial reuse provides a significant reduction in fertilizer cost to the agricultural segment of the state economy as the sludge is generally given to farmers free of charge.

Sludge Users

There were 23 active permits issued to sludge users in Illinois in 2002. Peabody Coal-Will Scarlet mine is a coal mine reclamation project, which applies sludge to property owned by the company rather than transporting sludge to fields owned by third parties. Synagro, the largest sludge hauler in the state, applies stabilized sludge from various generators to land in Illinois.

Table 2 - Illinois Sludge Usage and Disposal In 2002*			
Application Method	Dry Tons	% Of Total Tonnage	Facilities Using Method
Agricultural Land	144,070	32.7	376
Dedicated Land	4,025	0.9	4
Land Reclamation	23,158	5.3	6
Horticultural	70	>0.1	4
Public Distribution	5,092	1.2	9
On Site Storage	5,835	1.3	54
Storage Lagoons	15,349	3.5	42
Final Cover	129,485	29.4	3
Land Fill	54,718	12.4	71
Other	58,996	12.5	27
Totals	43,8811		

*The total sludge applied represents sludge produced in 2002 as well as sludge produced in previous years, which was held in storage and applied in 2002. It should be noted that some plants are using more than one method of disposal.

Table 3 - Illinois Sludge Usage and Disposal In 2002 Excluding Metropolitan Water Reclamation District			
Application Method	Dry Tons	% Of Total Tonnage	Facilities Using Method
Agricultural Land	110,386	56.6	372
Dedicated Land	2,694	1.3	3
Land Reclamation	1,158	0.6	5
Horticultural	1,127	0.6	4
Public Distribution	1,997	1.0	8
On Site Storage	5,832	3.1	54
Storage Lagoons	13,806	6.9	42
Final Cover	6,818	3.4	1
Land Fill	52,646	26.2	70
Other	666	0.4	24
Totals	197,130		

MULTIMEDIA MANAGEMENT

Goals: Adverse consequences resulting from toxic chemical releases are avoided, where possible, or otherwise minimized.

Environmental improvements will result from voluntary actions being taken by businesses, communities and the public.

Environmental Objectives:

1. Toxic chemical hazards will be reduced over the next five years.
2. Better environmental performance is demonstrated over the next four years by participants in non-regulatory, structured situations.

PROGRAM PERFORMANCE

Program Objectives:

1. Emergency incidents will be timely controlled and fully resolved within 180 days.
2. Anglers and their families are advised regarding safe consumption levels in a timely manner.
3. Annual toxic chemical releases will show a downward trend due to various forces and actions.
4. Majority of pilot innovation projects undertaken are fully or partially successful.
5. Between 15-20 Illinois EPA trained student interns are placed in the field to work on P2 projects during the summer and more than 50 percent of the facilities receiving assistance are implementing a student recommended P2 project.
6. More than 100 P2 site visits are conducted by Illinois EPA technical specialists each year and at least one recommended P2 project is implemented by surveyed facilities.
7. One or more quality P2 recommendations are provided in 20 percent of the regulatory field inspections by 2004.
8. Facility P2 efforts increase during 2003 to 2005 through voluntary recognition and award programs.
9. Small businesses are making changes or improving performance as a result of Illinois EPA compliance assistance activities.

Abandoned Gasoline Drums

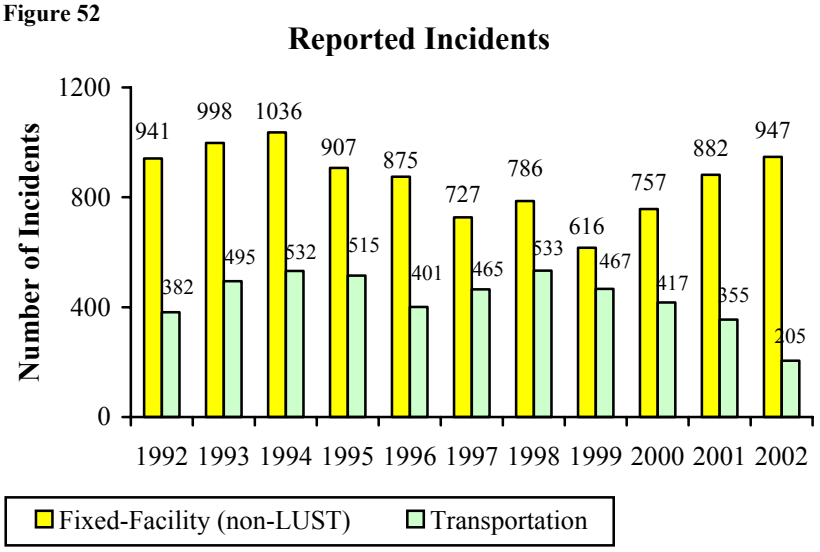
10. Small business awareness and use of Illinois EPA telephone helpline increases by 10 percent each year.
11. Use of Agency educational materials increases by 10 percent each year.

Emergency Incidents

The first response by governmental entities to an environmental emergency is usually by local public safety agencies. This is a function of time and distance of responders to the incident. State agencies support and augment local responders as they arrive during the immediate phase of the emergency with specialized technical expertise, equipment and capabilities not usually available at the local level. After the immediate dangers are controlled, Illinois EPA usually takes the lead in assuring: that residual risks are abated to acceptable levels in a timely manner, that an appropriate evaluation is conducted of the cause of the incident and that efficient preventive measures are implemented.

While recognizing that each incident has many characteristics that contribute to how serious the consequences are, the trend in total incidents reported has been gradually declining since 1994, as shown in **Figure 52**, which suggests that prevention efforts may be succeeding. Leaking underground storage tank (LUST) incidents have been subtracted from the totals as these incidents are addressed through the Bureau of Land. We have also provided a breakout for fixed facilities and transportation incidents so that relative trends can be tracked since the focus of preventive efforts differs for these two categories of incidents.

Figure 52



Certain reported emergency incidents require on-scene involvement from the Illinois EPA. In 2001, a total of 644 site visits were made by Illinois EPA emergency response staff.

Terrorism response is a specific function of Illinois EPA Emergency Response staff that serve in the technical component of the interagency State Weapons of Mass Destruction (SWMD) teams. Three such state teams exist, each consisting of tactical (law enforcement) and technical (chemical, biological and radiological) experts. These teams are specially equipped and trained in order to provide reliable state government capability to rapidly respond to any terrorism incident anywhere in the state.

Toxic Chemical Releases

Over 60,000 chemicals are in commercial use in the United States. Many of the substances have toxic effects on humans and the environment. Unwanted exposure situations can occur in a myriad of ways from transportation accidents to spills at facilities, unsafe handling of certain hazardous paints, or bioaccumulation in sport fish that are caught and consumed. The Illinois EPA plans on identifying these toxic chemical risks and managing them proactively. These hazards can be reduced through enhanced chemical emergency response (respond promptly, oversee cleanup and prevent future environmental emergencies by cooperatively working with other involved parties), and other management approaches, such as performance-based regulations, public advisories, and integrated toxics information.

Mercury Fever Thermometer Prohibition Act

The Illinois EPA and U.S. EPA have identified mercury as a priority pollutant. The Illinois EPA's Bureaus of Land and Water are working together to reduce the amount of mercury released into the environment. The Bureau of Land is focusing on reducing mercury in waste and consumer products collecting mercury-containing material from homes and schools. The Bureau of Water is focusing on reducing the releases of mercury in waterways.

Public Act 93-605, which is effective beginning July 1, 2004, creates the Mercury Fever Thermometer Prohibition Act. This law prohibits the retail sale and distribution of mercury fever thermometers in Illinois. The Mercury Fever Thermometer Prohibition Act does not apply to mercury thermometers sold to health care facilities, such as hospitals, clinics, and nursing homes. The law also bans the manufacture of mercury thermometers in the State, effective July 1, 2004. In addition, the law prohibits the deliberate sale of mercury-added novelty items after July 1, 2004.

Toxic Release Inventory

The release and transfer of toxic chemicals is tracked by the Illinois EPA. This information is maintained in the Toxic Release Inventory (TRI). In 1995, a total of 282 new toxic chemicals and chemical categories were added to the TRI reporting requirements. In 1998, seven new industrial categories were added. After 2000, certain Persistent Bioaccumulative Toxic (PBT) chemicals and chemical categories were added and reporting exemptions and thresholds modified. A total of 3.0 million pounds of PBTs were reported for 2001, which included twenty chemicals and made up 2.2 percent of the total reported chemicals. TRI data shows that in 2001, 1490 facilities filed reports for over 255 different chemicals. When compared to 2000, there was a 13.5 percent decrease in the total amount of toxic chemical releases and transfers in 2001. (**Figures 53 and 54**)

Figure 53

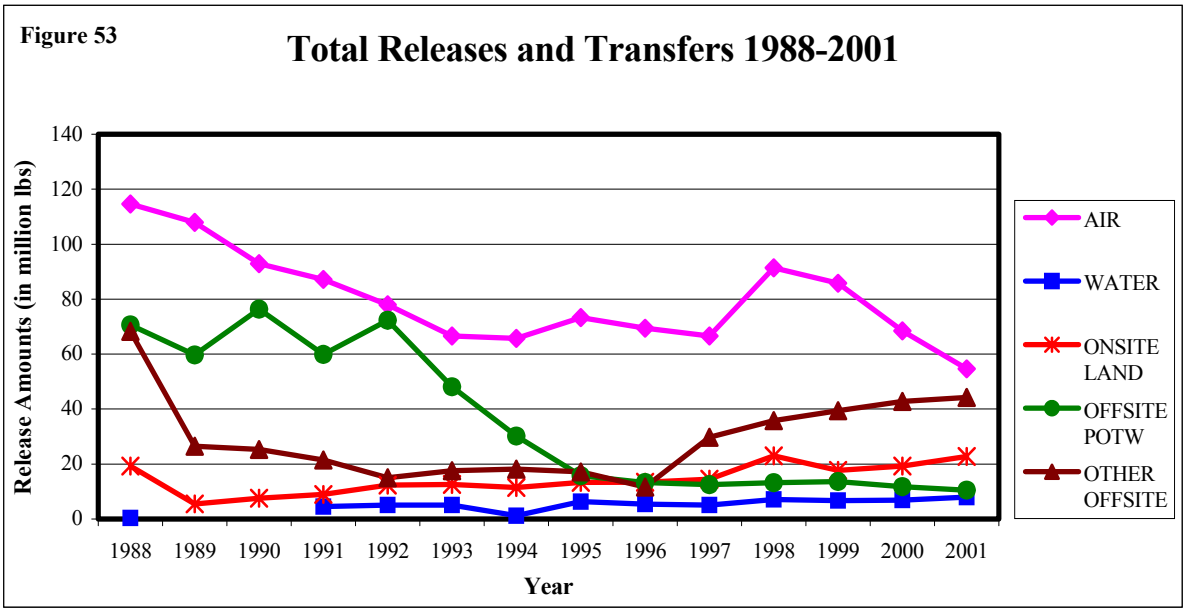
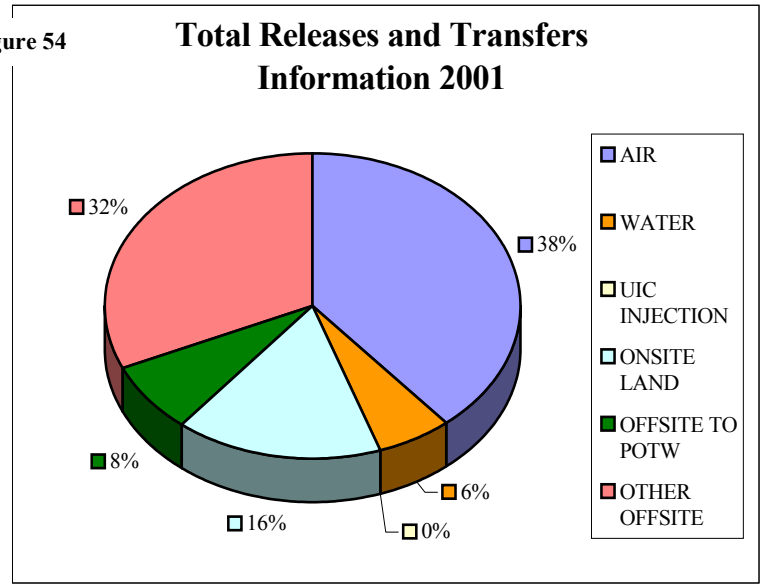


Figure 54



Risk-Based Remediation Objectives

Environmental risk assessment has become an integral part of various programs across the Illinois EPA. For instance, our clean-up regulations utilize a tiered approach for corrective action objectives that is based on risk analysis. Under this approach, the Illinois EPA ensures that appropriate data, methodologies, and criteria are being used by the regulated entities.

Regulatory Innovation Pilot Projects

Illinois EPA is helping create opportunities for progressive companies and local governments to demonstrate environmental performance. Specific projects are generated by sponsors that want

to try innovative ways of achieving continuous environmental improvement. In particular, environmental management systems (e.g., ISO 14001) are often utilized by project sponsors as the driving mechanism for innovation projects.

A recent amendment to the Environmental Protection Act included a provision to align the requirements of the state program with the national program. This amendment provides that the agreements we enter upon at a state level may be executed with the participants of the National Environmental Performance Track program. We hope to enter into a Memorandum of Agreement with U.S. EPA to implement these provisions. The Illinois EPA has initiated conversations with U.S. EPA for examples of draft MOAs. It is anticipated that the MOA would be signed in FY04.

There are currently two signed Environmental Management Systems project agreements under the Illinois pilot program. The first facility to sign a project agreement was the 3M Corporation located in Bedford Park, IL. The second project agreement was for Nestle USA, located in Jacksonville, IL. Both of these agreements require that the facilities reduce emissions while providing them with the flexibility to alter their processes in a more timely fashion then would otherwise happen.

The Illinois EPA is participating in two projects being implemented under the XL program. These projects are the Metropolitan Water Reclamation District project in Chicago, and the United Egg Producers project (which is a national project for egg producers being implemented throughout the country).

National Environmental Achievement Track (NEAT) - Illinois has 14 participants in this program sponsored by U.S. EPA. Illinois EPA assisted with compliance screening for these companies, participated in inspections, and provided review/comment on the applications filed.

ECOS Agreements

In 1998, the Illinois EPA and the Environmental Council of States (ECOS) signed the "Joint EPA/State Agreement to Pursue Regulatory Innovation." The purpose of this agreement was to encourage states to experiment with innovative regulatory approaches to environmental management. All innovations must provide equal or better environmental performance than currently being achieved. The agreement does not change any existing laws, but encourages state environmental agencies and U.S. EPA to work together to identify the necessary regulatory flexibility within current environmental statutes.

In 2002, the following ECOS agreements were implemented:

1. The Illinois EPA, in partnership with U.S. EPA, entered into an agreement in which EPA would share information gathered through the Toxic Substance Control Act (TSCA). Under TSCA, data is reported to U.S. EPA from companies concerning the chemicals that are used in their facilities. With this information, the Agency plans to increase awareness of toxic chemical data gaps, determine the potential impact of toxic chemicals on sensitive receptor sites, such as school sites, and improve handling of environmental emergency situations.

2. A second agreement provides certain NPDES facilities that have demonstrated sustained compliance an opportunity to reduce the frequency of submission of the NPDES Discharge Monitoring Reports (DMRs). Implementation of this program would not compromise the requirements for the number of sampling events, compliance monitoring or program accountability.

3. Injection wells are regulated by the Underground Injection Control (UIC) program and recently, additional sub-categories of wells have been added. In order that Illinois EPA can continue to implement all portions of its UIC program in the most effective manner possible, the Agency and U.S. EPA entered into an agreement to explore an innovative implementation approach.

4. The fourth project is concerning a regulatory innovation project involving very small community water supplies (CWS) in Illinois. This project allows the small CWSs to adopt an alternative affordable compliance-monitoring program for radionuclides. The project has been approved by the U.S. EPA and permit issued to one CWS, which will participate in the pilot phase of the project. The work plan for the project has been submitted to the U.S. EPA.

Pollution Prevention

Illinois EPA's pollution prevention (P2) program is designed to promote P2 as the preferred strategy for environmental protection. The Agency's Office of Pollution Prevention (OPP) fosters and supports P2 efforts at businesses and other facilities through educational, technical assistance and voluntary recognition programs. OPP sponsors informational seminars and provides on-site assistance to help facilities identify and implement P2 projects. OPP also works with the Agency's regulatory programs to promote voluntary P2 during compliance assurance activities.

Data on the effectiveness of the Agency's P2 assistance efforts is provided below:

P2 Assistance by OPP Technical Staff	1999	2000	2001	2002
Number of facility visits by OPP technical staff.	108	122	117	134
Percent of surveyed facilities that implemented at least one P2 project recommended by OPP.	67%	55%	52%	N/A

P2 Assistance by Agency Field Inspectors	1999	2000	2001	2002
Percent of Agency field inspections that included one or more P2 recommendations.	12%	9%	15%	15%
Percent of surveyed facilities that implemented at least one P2 recommendation offered by field staff.	58%	57%	28%	23%

P2 Internship Program

Every year, OPP recruits and trains upper-level college students on P2 technologies and practices. The students are then placed at industrial and other facilities during the summer to help them identify and assess practical P2 opportunities. The purpose of the intern program is to help Illinois facilities reduce waste, save money and increase efficiency. In 2001, 94 percent of the 17 facilities that hosted an intern implemented at least one of the student recommendations. These facilities reported both environmental benefits and cost savings as a result of the project. The total program benefits for the year are summarized below:

- Reduction in waste generation - 1.2 million pounds
- Reduction in water use - 9.8 million gallons
- Savings in energy costs - $6,000
- Savings in operating/disposal costs - $169,775

Assistance to Small Businesses

The Illinois EPA's Office of Small Business provides resources and assistance to help small businesses better understand their regulatory responsibilities and find answers to their compliance questions through the toll free and online helplines and "plain language" environmental fact sheets. In 2001, 14 percent of small businesses made changes in response to the assistance provided, and 41 percent became aware of the helpline.

Figure 55 illustrates the geographic location of the callers using the helpline.

Figure 55

Helpline Calls

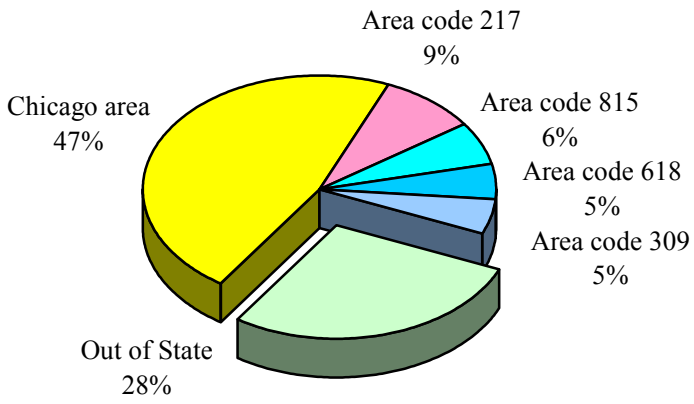
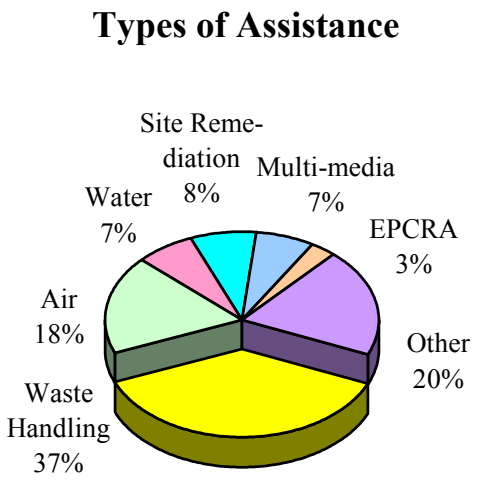


Figure 56 shows the different types of assistance that was provided to media programs.

Figure 56



Environmental Education

The Illinois EPA looks to improve awareness and understanding of environmental issues through education and outreach activities. The Agency's environmental education program, working in partnership with non-profit organizations and other governmental agencies, sponsors educational programs and exhibits; conducts educator training workshops; provides summer internships for students; and hosts an interactive Internet site to educate children about environmental protection.

Environmental education program for school children

Environmental Education	2001	2002
Number of educators requesting educational materials	1,265	1,312

APPENDIX A
MASTER LIST FOR REFERENCE MATERIALS*

AIR QUALITY MANAGEMENT

1. 2001 Illinois Annual Air Quality Report (June 2002)
2. Illinois Air Quality Data Acquisition Network
3. Annual Emission Trends
4. Partners for Clean Air
5. Annual Performance Review Report for the Emissions Reductions Market System (May 2002)

LAND QUALITY MANAGEMENT

1. Leaking Underground Storage Tank Program, 2002 Annual Report (February 2003)
2. Response Action Program, 2002 Annual Report (Pending)
3. Federal Sites Remediation Program, 2002 Annual Report (May 2003)
4. Site Remediation Program, 2002 Annual Report (Pending)
5. Non-hazardous Solid Waste Management Landfill and Capacity in Illinois, 20th Annual Report (November 15, 2002)

WATER QUALITY MANAGEMENT

1. Illinois Water Quality Report (July 2002)
2. Lake Michigan Water Quality Report 1992-1993 (June 1997)
3. Annual Compliance Report for Public Water Supplies (June 2001)
4. Illinois Groundwater Protection Program Biennial Comprehensive Status & Self-Assessment Report (January 2002)
5. Electronic submission of The Source Water Assessment and Protection Reporting (October 2002)

MULTIMEDIA MANAGEMENT

1. FY 2003 Performance Partnership Agreement (December 2002)
2. Fifteenth Annual Toxic Chemical Report (April 2003)
3. Office of Chemical Safety Annual Report (April 1998)

* These documents, as well as more information on these programs are available on the Internet at www.epa.state.il.us

APPENDIX B

AIR QUALITY MANAGEMENT

1. Annual Emission Reports

The Clean Air Act, as amended in 1990, requires increased reporting and tracking of emissions. Under Section 182(a)(3)(B), stationary sources of emissions in ozone nonattainment areas are required to submit annual emission reports (Emission Statements) to the state in which they operate. The State of Illinois has had an annual emission reporting requirement for a number of years (since 1971) that applies to all sources required to have an operating permit pursuant to 35 Ill. Adm. Code Sections 201.302(a) and 201.302(b). The Illinois EPA has integrated the reporting requirements of Section 182(a)(3)(B) into its existing annual emission reporting requirement and codified this requirement in 35 Ill. Adm. Code Part 254.

The following stationary sources are required to file an annual report:

- Any source, regardless of geographical location, that is permitted to emit 25 tons per year or more of any combination of regulated air pollutants.
- Any source that has a potential to emit either VOM or NOx that meets or exceeds 25 tons per year for all emission units at the source and that is located in an ozone nonattainment area.
- In Illinois, the ozone nonattainment areas consist of Cook, DuPage, Kane, Lake, Madison, McHenry, Monroe, St. Clair, and Will counties, Aux Sable Township in Grundy County, Goose Lake Township in Grundy County, and Oswego Township in Kendall County.
- Any source required to have a Title V operating permit.
- All other sources required to have an operating permit.

The Illinois EPA annually provides to each stationary source a Source Inventory Report. The report contains data fields that the source is required to verify or complete. Information to be provided include source identification information, emissions information, operating data, control device information, and exhaust point information for each regulated air pollutant emitted at the source.

Sources subject to NESHAP or a MACT standard must report HAP emissions for the emission units subject to that specific regulation.

Stationary sources are required to provide the emissions data annually by May 1 of each year to the Illinois EPA. The reporting period is for the previous calendar year.

2. Description of the Air Monitoring Network

The Illinois air monitoring network is comprised of instrumentation owned and operated by both the Illinois EPA and cooperating local agencies. This network has been designed to measure ambient air quality levels in the various Illinois Air Quality Control Regions (AQCR). Historically, each AQCR was classified on the basis of known air pollutant concentrations or, where these were not known, estimated air quality. The network contains both continuous and intermittent instruments. The continuous instruments operate throughout the year, while intermittent instruments operate on a staggered schedule.

The Illinois network is deployed as described in the Illinois State Implementation Plan. An updated air monitoring plan is submitted to U.S. EPA each year for review. In accordance with U.S. EPA air quality monitoring requirements as set forth in Title 40 of the *Code of Federal Regulations*, Part 58 (40 CFR 58), four types of monitoring stations are used to collect ambient air data. The types of stations are distinguished from one another on the basis of the general monitoring objectives they are designed to meet.

(1) State/Local Air Monitoring Station (SLAMS) Network - The SLAMS network is designed to meet a minimum of four basic monitoring objectives:
   a. To determine the highest concentrations expected to occur in the area covered by the network.
   b. To determine representative concentrations in areas of high population density.
   c. To determine the air quality impact of significant sources or source categories.
   d. To determine general background concentration levels.

(2) National Air Monitoring Station (NAMS) Network - The NAMS network is a subset of stations selected from the SLAMS network with emphasis given to urban and multi-source areas. The primary objectives of the NAMS network are:

   a. To measure expected maximum concentrations.
   b. To measure concentrations in areas where poor air quality is combined with high population exposure.
   c. To provide data useful for the determination of national trends.
   d. To provide data necessary to allow the development of nationwide control strategies.

(3) Photochemical Assessment Monitoring Station (PAMS) Network - The PAMS network is required in serious, severe, and extreme ozone nonattainment areas to obtain detailed data for ozone, ozone precursors (NOx and VOM), and meteorology. VOM and NOx sampling is required during June through August each year. Ozone sampling occurs during the ozone season, April through October. In Illinois, PAMS is required in the Chicago metropolitan area only. Network design is based on four monitoring types:

   a. Type 1 sites are located upwind of the nonattainment area and are located to measure background levels of ozone and precursors coming into the area.
   b. Type 2 sites are located slightly downwind of the major source areas of ozone precursors.
   c. Type 3 sites are located at the area of maximum ozone concentrations.
   d. Type 4 sites are located at the domain edge of the nonattainment area and measure ozone and precursors leaving the area.

(4) Special Purpose Monitoring Station (SPMS) Network - Any monitoring site that is not a designated SLAMS or NAMS is considered a special purpose monitoring station. Some of the SPMS network objectives are:

   a. To provide data as a supplement to stations used in developing local control strategies, including enforcement actions.
   b. To verify the maintenance of ambient standards in areas not covered by the SLAMS/NAMS network.
   c. To provide data on non-criteria pollutants.

3. Air Quality Index

The Air Quality Index (AQI) is a means of determining the air quality in a region by evaluating the levels of each of six pollutants: ozone, PM, NOx, SO_2, and CO. The concentrations of two or more of these pollutants are typically expressed in different forms of measurement. In order to create a single index for all of these pollutants, there is an AQI value expressed in nomograms for each pollutant. The AQI value of each pollutant monitored in a region is calculated on a daily basis. Considering all of the pollutants monitored at a site, the highest index value is reported as the area's AQI. The major changes from the previous Pollutant Standards Index (PSI) are the addition of a new category (unhealthy for sensitive groups) and the inclusion of 8-hour ozone and $PM_{2.5}$.

The percentage of time that an area's air quality is as good or moderate can aid in understanding whether or not an individual needs to worry about the health effects of the air in his or her locale. The index also allows tracking of general air quality over time to determine whether it is improving or declining in an area. The Bureau of Air maintains records on the air quality index from 13 sectors in the state considered to be major metropolitan areas.

This table provides an example of how the AQI would be calculated for the Metro-East area.

Monitoring Site	$PM_{2.5}$	Ozone	SO2	CO	PM_{10}
Alton		73 ppb	7 ppb		
Wood River			3 ppb 4 AQI		
Edwardsville		83 ppb 97 AQI*			
Granite City			6 ppb 19 AQI	1.1 ppm 13 AQI	77 $\mu g/m^3$ 62 AQI
Maryville		76 ppb 79 AQI			
South Roxana			3 ppb 4 AQI		
Wood River-WTP		76 ppb 79 AQI	7 ppb 10 AQI		
East St. Louis	24.5 $\mu g/m^3$ 69 AQI	56 ppb 44 AQI	25 ppb 37 AQI		
Sauget			3 ppb		

* The AQI for this day was 97 because of the ozone levels and is in the moderate range.

4. Key Features of ERMS

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

1. Most command and control rules are in force year-round. 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.

2. Many regulations limit emission rates rather than actual emissions. The ERMS program puts a cap on sources based on their actual emissions, which provides certainty that it will reduce VOM emissions in the nonattainment area.

3. The ERMS program, as noted above, goes beyond RACT. Unlike other emissions trading systems across the country, Illinois does not allow sources to avoid other emissions limits by participating in the ERMS program. Sources must comply with the ERMS rule *and* all other applicable limits.

4. Some trading programs have created trading units with an unlimited life, which allow them 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 savings for companies, but prevents excessive accumulation of active trading units with unlimited life.

5. 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 companies and to ensure the use of standardized methods for determining emissions.

6. Illinois 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 emissions reduction in the Chicago non-attainment area.

Sources that fail to reduce their emissions or obtain the proper number of ATUs are held accountable for their actions as 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 the participating sources and provides assurance that VOM emissions reductions will be achieved.

LAND QUALITY MANAGEMENT

1. Sites remediated

Remediated sites are contaminated properties at which health risks are successfully reduced, controlled, or eliminated. The acres of land remediated is the indicator used to measure progress toward achieving the first environmental objective for the Clean Land Program. Our objective, by 2005, to reduce or control risk to human health and the environment at 90,000 acres with contaminated soil, contaminated groundwater, or unmanaged waste. The reported acres remediated are based on Illinois EPA determinations that the investigation and remedial/ corrective actions are completed.

Although the performance measure of acres of land remediated is common to six types of Clean Land Program sites, different Federal and state statutes, regulations or guidance directs the remediation process.

Below is a list of Illinois EPA clean land programs, the statutory and regulatory authority, and acres remediated in 2002.

Cleanup Program	Authority	Acres Remediated	Cumulative Acres
Leaking Underground Storage Tank (LUST)	RCRA Subtitle I; 415 ILCS 5/5735 Ill. Adm. Code 731, 732	1393	17,369
National Priorities List (Superfund)	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	77	4,596
Response Action	415 ILCS 5/4 35 Ill. Adm. Code 750	94.5	687.5
Site Remediation Program	415 ILCS 5/58 35 Ill. Adm. Code 750	550	6,873
Federal Facilities	42 U.S.C. 9601 et seq. 40 CFR 300 et seq.	575.5	28,609.09
Resource Conservation and Recovery Act (RCRA)	RCRA Subtitle C 35 Ill. Adm. Code 724, 725	66	9,038

2. Classification of groundwater conditions at operating waste disposal sites are listed below as (D) detection monitoring, (A) assessment monitoring, and (C) corrective action.

Name	ID Number	00 Tons	Code
Facilities in detection monitoring (D)			
AFA - Renwick Road	1970500011		D
Brickyard Disposal and Recycling	1838040029	306,348	D
CDT Landfill (closed)	1978170006	0	D
CID Recycling and Disposal Facility #4	0310390001B	74,275	D
CIPS Coffeen Power Station	0135800005		D
Clinton Landfill #2	0398080007	267,533	D
Sexton #2	0318170002	155,612	D
FGDS - Springfield	1678250020	0	D
LandComp Landfill	0990808103	191,920	D
Lawrence County Regional Landfill	1010100002	69,296	D
Lee County Landfill	1030205110	1,042,534	D
Onyx Orchard Hills Landfill	1410175005	1,065,194	D
Peoria Disposal Co. #1 (PDC)	1438120003	37,145	D
Pike County Landfill	1498160001	96,818	D
Prairie Hill Recycling and Disposal Facility	1950350014	213,585	D
Quad Cities Landfill #4*	1610400007	259,605	D
RCS Landfill	0830250012	24,949	D
Saline County Landfill	1658080001	53,880	D
South Chain of Rocks RDF - Phase2	1198010002	362,105	D
Streator Area Landfill #3	1054900003	65,524	D
Upper Rock Island County Landfill	1618100014	284,939	D
Wayne County Landfill, Inc.	1918040003	135,806	D
Indian Creek LF/Mineral Solutions	1798090002	0	D
Settler's Hill Recycling and Disposal Facility (closed)	0890100009	1,187,847	D
Wheatland Prairie Recycling/Disposal Facility (closed)	1978200004	58,245	D
Woodland Recycling and Disposal Facility	0894830005	399,126	D
Total:		**6,352,286**	**26**

**Quad Cities III and BFI - Quad Cities IV report together*

Name	ID Number	01 Tons	Code
Facilities in assessment monitoring (A)			
American/CIPS #2	0798080002		A
Countryside Landfill	970250003	520,418	A
D & L Landfill	0050050001	61,249	A
Five Oaks Recycling and Disposal Facility	0218160006	295,944	A
Freeport Municipal Landfill #4	1770200015	39,089	A
Granite City Steel	1190400001		A
Kankakee Recycling and Disposal Facil-	0910550006	114,786	A
Lincoln Stone Quarry	1978090001		A
Salem Municipal Landfill #2	1218130007	19,654	A
American Disposal Servs/McLean Co Landfill	1130200042	149,242	A
Cottonwood Hills RDF	1630755017	284,906	A
Envirotech Landfill	0638140002	502,143	A
Knox County Landfill #3	0958160003	122,406	A
Landfill 33	0498100007	51,450	A
Laraway Recycling and Disposal Facility	0970450002	35,118	A
Livingston Landfill	1058210002	2,953,862	A
NSSD – Newport Harbor	0978100002		A
Peoria City/County Landfill #2	1438165003	180,821	A
Rochelle Municipal Landfill #2	1418030020	96,364	A
Tazewell Recycling and Disposal Facility	1798060004	338,745	A
St. Louis Auto Shredding	1631000003	229084	A
Onyx Zion Landfill	0978020002	715,035	A
Total:		**6,710,316**	**22**

Name	ID Number	01 Tons	Code
Facilities in corrective action (C)			
CID Recycling and Disposal Facility #3	0310390001A	196,125	C
Coles County Landfill	0298050007	90,508	C
DeKalb County landfill	0378020001	76,966	C
Envirofil of Illinois Landfill	1098100003	96,727	C
Illinois Landfill	1830450009	70,888	C
Litchfield-Hillsboro Landfill	1358150007	121,192	C
Macon County Landfill	1158040008	274,662	C
Milam Recycling and Disposal Facility	1630450001	830,971	C
Morris Community Landfill	0630600001	50,794	C
River Bend Prairie Landfill	0310690003	184,176	C
Roxana Landfill Authority	1190900002	323,785	C
Southern Illinois Regional Landfill	0770200002	344,000	C
Winnebago Reclamation Service	2018080001	459,845	C
Total:		**3,120,639**	**13**

3. Municipal Solid Waste

A municipal solid waste landfill is a sanitary landfill permitted by the Illinois EPA to receive solid waste generated at households, businesses and industry. A municipal solid waste landfill may also be permitted to receive non-hazardous commercial or industrial special waste. Landfill owners and operators are required to obtain permits from Illinois EPA to develop and operate a landfill. The permitting process ensures the landfill is designed, constructed, and operated in a manner that does not pose a threat to human health or the environment. Owners and operators of permitted sanitary landfills are required to report the total quantity of solid waste received on a quarterly basis. The reporting and monitoring requirements enable the Illinois EPA to track the operations of the landfill, as well as identify statewide solid waste disposal trends.

The amount of municipal solid waste disposed in Illinois landfills is on a downward trend. This trend may be influenced by recycling, waste minimization and pollution prevention practices, lower volumes of out-of-state waste disposed in Illinois, and more Illinois waste being disposed out-of-state. The Illinois EPA tracks the amount of municipal solid waste generated and disposed in Illinois to evaluate its impact on municipal solid waste disposal capacity in Illinois. This indicator and the total annual amounts of municipal solid waste disposed in Illinois will be used to estimate the amount of municipal solid waste generated in Illinois.

Some material is banned from disposal in Illinois landfills. The type of material banned is indicated below and the date of its legislative ban is noted.

Landscape Waste : July 1,1990
Lead Acid Batteries: Sept. 1, 1990
White Goods Components: July 1, 1994
Whole Used Tires: Jan. 1, 1995
and Used Motor Oil: July 1, 1996.

Landfill operators and owners are responsible for determining that these wastes are not accepted at their facilities. Agency and delegated agencies inspectors check the log sheets that indicate items not accepted at the gate, which were returned to the generator or transporter for alternative means of disposal.

Section 22.22 of the Illinois Environmental Protection Act (415 ILCS 5/22.22) prohibits persons from mixing landscape waste intended for collection or for disposal at a landfill with any other municipal waste. Landscape waste may be processed at permitted landscape waste compost facilities or on-farm land application sites. Owners and operators of Illinois compost facilities must meet the operating, permitting, and reporting requirements in 35 Ill. Adm. Code 830.832. The data does not reflect farming, composting, land-applications sites, nor households engaged in backyard composting efforts.

4. Materials Recovery

Illinois EPA-sponsored environmental programs that encourage voluntary waste segregation include: (1) household hazardous waste collections administered by the Illinois EPA's Household Hazardous Waste Collection Program; (2) paint collections administered by the Partners for Waste Paint Solutions; (3) hazardous educational waste collections from high schools administered by the Illinois EPA's Household Hazardous Waste Program; and (4) materials transferred through the Industrial Material Exchange Service. Municipal waste materials that are banned from landfill disposal due to their volume and/or toxicity include: (1) used and waste tires; (2) landscape waste; (3) white goods components (i.e., domestic and commercial large appliances); (4) lead-acid batteries; and (5) motor oil.

Illinois EPA coordinates one-day Household Hazardous Waste Collections each spring and fall, where citizens can bring chemical cleaners, paints, thinners, antifreeze, weed killers, pesticides, and similar household hazardous products. These collections began in November 1989. Through the end of FY2002, the Illinois EPA orchestrated 278 Household Hazardous Waste Collections funded by statewide fees on landfilled non-hazardous solid waste. The Illinois EPA and the local community sponsor these collection events. The Illinois EPA provides contractor oversight and assumes waste generator status, while the local community provides promotion and advertising, site location, and volunteers who supervise traffic control of incoming and departing vehicles, greet and survey participants, and distribute brochures for the event.

Thirty one collection events were held in 2002 with the following local sponsors:

CDOE = Chicago Department of Environment
MWDGC = Metropolitan Water Reclamation District of Greater Chicago
SSMMA = South Suburban Mayors and Managers Association
SWANCC = Solid Waste Agency of Northern Cook County
SWALCO = Solid Waste Agency of Lake County

Date	Site	Cosponsor	Contributed	Drums Total
04/06/02	Metropolis	Massac County Farm Bureau	$0.00	15.91
04/13/02	Crystal Lake	McHenry County Dept of Planning	$18,361.86	518.04
04/13/02	Paris	City of Paris & Edgar Co. farm Bureau	$5,000.00	80.70
04/20/02	Fairfiled	Wayne County Health Dept.	$0.00	33.61
04/20/02	Henry	Marshall-Putnam Farm Bureau	$0.00	48.40
04/27/02	Shawneetown	Gallatin County Soil & Water Cons. Dist	$0.00	16.14
04/27/02	Sycamore	Dekalb Co. Farm Bureau/& Health Dept.	$25,000.00	265.74
05/04/02	Highland	Madison Co. & Highland area cleanup	$10,000.00	93.79
05/04/02	Oak Lawn MWRDGC	MWRDGC & Southwest Conference Mayors	$37,500.00	294.92
05/18/02	St. Charles	Kane County Environmental Mngmt.	$45,000.00	236.28
05/18/02	Kankakee	Kankakee County & River Metropolitan Agency	$15,000.00	88.04
06/01/02	Glencoe (SWANCC)	Village of Glencoe & SWANCC	$25,000.00	241.98
06/01/02	Herscher	Herscher High Students for Environmental Action	$0.00	25.40
06/08/02	Chicago	Chicago Dept. of Environment	$30,000.00	204.37
06/22/02	Roanoke	Woodford County Zoning & Highway Dept.	$0.00	90.65
06/22/02	Elk Grove Village	Elk Grove Village & SWANCC	$25,000.00	158.03
06/29/02	Yorkville	Kendall County Farm Bureau & Health Dept.	$0.00	135.82
07/07/02	Robinson	City of Robinson & Marathon Ashland Petroleum	$15,000.00	72.24
09/14/02	Lockport	Will County Land Use/Lockport Township & City of Lock-	$15,000.00	93.78
09/14/02	Rochelle	Ogle County/Lee County/City of Rochelle	$15,000.00	122.54
09/21/02	Hillside MWRDGC	MWRDGC/West Cook County Solid W.	$40,000.00	203.53
09/21/02	Tuscola	Douglas County Health Dept.	$2,000.00	78.74
09/28/02	Elmhurst SSM & M	DuPage County & West Cook County	$28,000.00	124.37
09/28/02	Edinburg	Edinburg Lions Club & Christian County	$0.00	100.52
10/05/02	Pekin	Tazewell County Health Department	$0.00	148.92
10/05/02	Princeton	Bureau County Farm Bureau	$0.00	45.53
10/12/02	Lake in the Hills	Lake in the Hills Sanitary District	$0.00	156.93
10/19/02	Nokomis	City of Nokomis & Montgomery Cty Solid W	$0.00	60.02
10/19/02	Plainfield	Will County, Shorewood, Plainfield	$16,000.00	108.51
10/26/02	Griggsville	U of I Extension & Pike County Health Dept.	$100.00	34.75
10/26/02	Whiteside County	Whiteside County Public Works	$0.00	163.76
TOTAL			**$366,961.86**	**4061.96**

The Illinois EPA assumes the costs to collect, transport, treat, and dispose of all wastes collected at these events. Over the last three state fiscal years (July 1st - June 30th), the Illinois EPA spent the following amounts for the wastes collected:

State Fiscal Year (SFY)	Volume Collected (55 gallon drums)	Illinois EPA Operating Costs*	Number of Participating Households	Cost to the IEPA for Drums Collected
SFY97: July 1, 1996 - June 30, 1997	6,777	$1,645,352	30,365	$243
SFY98: July 1, 1997 - June 30, 1998	6,223	$1,444,379	31,254	$232
SFY99: July 1, 1998 – June 30, 1999	2,116	$527,551	11,125	$249
SFY00: July 1, 1999 – June 30, 2000	2,980	$791,848	13.277	$309
SFY01: July 1, 2000 – June 30, 2001	4,325	$1,884,993	22,848	$435
SFY02: July 1, 2001 – June 30, 2002	4,772	1,923,076	24,134	$403
TOTAL	**27,193**	**8,217,199**	**133,003**	**$1,871**

* Does not include Illinois EPA administrative expenses nor the costs to local cosponsors for publicity, traffic control, and other local services.

Long-term collection facilities operate in Naperville (since October 24, 1992) and Rockford (since April 1, 1995). These two facilities provide area residents with on-going locations to take their household hazardous waste. Operations at these locations require a permit from the Illinois EPA. Below is a breakdown of operational costs and the volumes of waste collected at these facilities during the previous state fiscal years:

Facility (county)	State Fiscal Year ("SFY")	Volume Collected (55 gallon drums)	Illinois EPA Operating Costs	Number of Participants	Cost to the Illinois EPA Per Drum Collected
Naperville (DuPage)	SFY96	809	$127,496	5,909	$158
	SFY97	989	$127,239	7,517	$129
	SFY98	1,156	$182,559	9,403	$158
	SFY99	1,686	$246,044	14,010	$146
	SFY00	1,985	$419,081	15,062	$211
	SFY01	1,860	$373,643	15,821	$201
	SFY02	1,205	$187,453	12,563	$156
Rockford (Winnebago)	SFY96	452	$57,631	2,246	$128
	SFY97	609	$69,216	2,788	$114
	SFY98	550	$93,521	2,884	$170
	SFY99	749	$118,265	3,235	$157
	SFY00	801	$177,421	3,591	$221
	SFY01	727	155,697	3,561	$214
	SFY02	801	$137,592	4,061	$172
TOTALS		**14,379**	**2,472,858**	**102,651**	**$2335**

The Illinois EPA incurs the major costs for one-day collection events. Long-term collection facilities provide a substantial savings to the Illinois EPA, because local governments assume a significant financial responsibility for operation and maintenance. Collection, transportation, treatment, and disposal costs incurred by the Illinois EPA at one-day collection events over the past three years has averaged approximately $381 per drum of wastes collected. During the same time period, the Illinois EPA spent 48 percent less (or approximately $197 per drum) at long-term collection facilities.

Since August 1995, the Illinois EPA has coordinated with paint retailers to collect unused or unwanted paint from local area residents for reformulation and reuse. This partnership, Partners for Waste Paint Solutions, allows paint retailers to consolidate and reprocess the unused/unwanted paint. The retailer can either sell or donate the paint recovered. An Illinois EPA contractor pours unusable or waste paint into drums for pickup and disposal.

Success and interest in the Partners for Waste Paint Solutions program increases with each new participating partner as local residents have a solution for properly managing their unwanted or unused paint products. Since 1996, the Illinois EPA has conducted hazardous education waste collections at 121 high schools.

Date	School	Community
1996	Carlinville HS, Thornwood HS, Peoria and East Peoria high and middle schools (22), St. Charles HS, Sycamore HS, Frankfort Community HS	Carlinville, Homewood, Peoria and East Peoria, St. Charles, Sycamore, West Frankfort
1997	Cary HS, Metro East Lutheran HS, Amos Alonzo Staff HS, Highland HS, Hillsboro HS, Monmouth HS, Mundelein HS, Paris HS, Springfield high and middle schools (11), Taylorville HS	Cary, Belleville, East Hazel Crest, Highland, Hillsboro, Monmouth, Mundelein, Paris, Springfield, Taylorville
1998	Batavia HS, Griggsville HS, York HS, Rushville HS	Batavia, Elmhurst, Oak Lawn, Rushville
1999	Schaumburg, St. Jacob, Jacksonville Routt, Porta, Piasa, Brookfield	Schaumburg, Troy, Jacksonville, Petersburg, Greenfield, Brookfield
2000	Ten schools in 12 communities	Dixon, Rochelle, Clinton, Palos Hills (Carl Sandburg), Deerfield, Robinson, Bridgeport (Red Hill School), Decatur, Effingham, Greenville
2001	22 schools in 16 communities	Edwardsville, Lewiston – Canton Spoon River V.I. T., Newton, Campbell Hill, - Trico, Neoga, Homewood – Flosssmoor & St. Mary, Galesburg, Wilmette-Eagle Wings - Chicago, Gardner - South, Hoopston, Maine Township Park Ridge, Harrisburg, Oakland, Alton Marquette & E Alton Wood River, Urbana/Champaign Central, Taylorville
2002	32 schools in 20 communities	Fairfield, Sycamore, Oak Lawn, St. Charles, Kankakee, Glencoe, Hersher, Roanoke, Robinson, Lockport, Rochelle, Hillside, Tuscola, Elmhurst, Edinburg, Pekin, Princeton, Nokomis, Griggsville, Rockfalls

The Illinois EPA's Industrial Material Exchange Service (IMES) lists both materials that are available and materials industries are seeking. Request forms are included in the front of each IMES directory. To respond, or to list a material, firms can send phone or fax requests to the IMES office. After a firm responds to a listing, IMES puts a potential user in contact with the generator, with the final transaction and transportation of materials left to the companies involved. A materials listing stays in the directory for a minimum of one year, unless the listing is withdrawn. If firms prefer to list their materials confidentially, IMES will not release a company name or phone number without permission. IMES participants voluntarily provide information on annual cost savings and the amount of material exchanged. Annual cost savings are based on: (1) avoided disposal costs (cost savings estimated by generators); and (2) cost difference between IMES material and feedstock (costs savings estimated by users). A conversion ratio of 8.33 pounds per gallon was used.

	Number of Listings	Number of Transfers	Cost Savings	Volume (Gallon
1983	138	29	$442,333	689,955
1984	162	25	$509,672	4,250,110
1985	211	43	$1,213,230	943,628
1986	335	69	$7,055,519	3,525,283
1987	600	74	$7,208,556	16,972,317
1988	429	40	$4,516,441	5,313,981
1989	382	43	$2,113,966	2,572,855
1990	483	79	$4,400,937	10,334,603
1991	476	101	$10,746,059	10,076,185
1992	486	98	$13,092,444	7,619,700
1993	439	120	$8,635,199	19,322,968
1994	453	105	$33,405,328	187,248,642
1995	320	89	$12,137,428	7,720,075
1996	359	92	$14,136,627	37,721,075
1997	420	95	$19,893,128	17,686,950
1998	432	100	$17,641,542	53,939,938
1999	430	98	$14,898,744	39,074,460
2000	472	109	$16,686,593	43,763,395
2001	426	102	$15,668,914	25,264508
2002	459	103	$13,696,417	79,268,007
Total	**7,912**	**1,614**	**$218,099,077**	**573,308,635**

The Used Tire Program offers free county-wide used and waste tire collections. Residents of the county where the collection is being held can bring their used and waste tires to the designated collection point during specified dates. Although there is no fee, participants must sign agreements stating they will not accumulate used and waste tires, and they have no used and waste tires stored on their property. The weight or volume of whole or shredded tires received were converted to units of passenger tire equivalent (PTE) using the conversion ratios prescribed by 35 Ill. Adm. Code 848: **One PTE is 25 pounds, the approximate weight of one car/light truck tire.**

12 county-wide collection events were conducted in 2002. An average of 208 tons (approximately 16,639 PTEs) were collected per county. Below is a list of the participating counties, sponsors and tons collected at each event:

County	RP/Owner	Bill Cost	Bill Weight	PTE
Clay	Clay Co./Flora, City of	$6,749.31	38.85	3,108.00
Cook	West Cook Co. Solid Waste Agency	$6,880.44	59.70	4,776.00
Effingham	Effingham Co. Health Dept.	$32,341.99	203.63	16,290.40
Madison	Madison Co. Planning and development Dept.	$71,051.19	571.46	45,716.80
Madison	Madison Co. Planning and development Dept.	$5,009.55	25.70	2,056.00
McDonough	McDonough Co. Soil & Water Conservation	$20,317.98	134.13	10,730.40
Pike	City of Barry Public Works	$4,066.46	21.13	1,690.40
Randolph	Monroe-Randolph Bi-County Health Dept.	$27,927.28	235.58	18,846.40
Sangamon	Sangamon Co. Dept. of Public Health	$123,688.44	572.23	45,778.40
St. Clair	Esat Side Health Dist.	$19,903.88	99.40	7,952.00
Vermilion	Vermilion Co. Health Dept.	$46,631.38	341.14	27,291.20
Warren	Warren Co. TCR & WMC	$22,386.28	192.83	15,426.40
Totals		**$386,954.18**	**2495.78**	**199,662.40**

To clean up tire dumps around the state, the Illinois EPA has two contractors. Since 1990, the Illinois EPA tracked the amount of tires collected or cleaned up through the Used Tire Program:

Year	Amount of Used and Waste Tires Collected or Cleaned Up	Year	Amount of Used and Waste Tires Collected or Cleaned Up
1990	3,476	1996	14,551
1991	6,927	1997	8,871
1992	2,623	1998	6,853
1993	6,468	1999	4,728
1994	8,308	2000	9042.89
1995	19,815	2001	14,011.67
		2002	14,046.47
TOTAL TIRES	**119,719 tires**		

5. Open Dumping

Section 21 of the Illinois Environmental Protection Act (415 ILCS 5/21) prohibits open dumping. Open dumping is the consolidation of garbage from one or more sources that is not disposed at a permitted landfill (e.g., bottom of ravines, empty lots, along roadsides).

In 2002, Illinois EPA had delegation agreements with 20 units of local government to conduct inspections, investigations, and enforcement activities at open dumps, including those containing tires, transfer stations, landscape waste compost facilities, municipal solid waste landfills, and other non-hazardous waste management activities (415 ILCS 5/4(r)):

Delegated Local Governments	
Ambraw Valley Solid Waste Agency (Crawford, Lawrence and Richland Counties)	McHenry County Health Department
Chicago Department of Environment	Montgomery County Coordinated Services Office
Christian County Solid Waste Management Dept.	Ogle County Solid Waste Management Department
DuPage County Solid Waste Division	Perry County Health Department
Jackson County Health Department	St. Clair County Health Department
Kankakee County Health Department	Sangamon County Department of Public Health
Lake County Health Department	Tazewell County Health Department
LaSalle Department of Environmental Services and Land Use	Vermilion County Health Department
Macon County Solid Waste Management Department	Wayne County Health Department
Madison County Planning and Development	Will County Land Use Department Waste Services Division

Littering, scavenging, open burning, deposition of waste in standing or flowing waters, proliferation of disease vectors, and allowing standing or flowing liquid discharge from a dump site are prohibited by the Illinois Environmental Protection Act (415 ILCS 5/21(p)). The Illinois EPA or delegated units of local government may issue administrative citations for these violations (415 ILCS 5/31.1(b)). A civil penalty of $500 for each violation plus any hearing costs incurred by the Illinois EPA can be assessed (415 ILCS 5/42(b)(4)).

In 1997, the Illinois EPA and delegated counties established a goal of cleaning up all open dumps. The following tables identify the number of open dumps discovered in 2002 and the amount of waste removed from open dump sites in 2002. The Illinois EPA divides the state into seven regions with field offices located in Rockford, Des Plaines, Peoria, Champaign, Springfield, Collinsville, and Marion.

Open Dumps in 2002

Region	Open Dump Sites Investigated in 2002	Cubic Yards of Waste Removed from open dump sites in 2002
1	147	2,235
2	813	8,680
3	195	5,782
4	207	7,413
5	616	12,725
6	325	2,238
7	209	14,370
Total	**2512**	**45,484**

Chicago figures were not available.

6. Hazardous Waste

Hazardous wastes are those defined by the federal law known as the Resource Conservation Recovery Act (RCRA; 42 U.S.C. 6901 et. seq.). Hazardous wastes may include wastes listed under RCRA by definition or that are hazardous by the characteristics of ignitability, corrosivity, reactivity, or toxicity. Properly disposed hazardous waste must meet both state and federal standards outlined in a site-specific operating permit. Owners and operators of hazardous waste management facilities report their activities annually to the Illinois EPA.

Hazardous waste disposal in Illinois has decreased as a result of: (1) land disposal restrictions; and (2) increased pollution prevention and waste minimization practices. Land disposal restrictions require that generated hazardous wastes to be placed on land ("land disposed") meet waste-specific treatment standards that substantially diminish the toxicity of wastes or reduce the likelihood that contaminants in such wastes would leach. Wastes that do not meet the treatment requirements are prohibited from land disposal. Pollution prevention and waste minimization practices reduce the use of hazardous and non-hazardous materials, energy, water, other resources as well as those that protect natural resources through conservation or more efficient use (see Multimedia Management section). In 2002, the following facilities reported hazardous waste disposal in Illinois:

Facility	Illinois Identification Number	Location	Hazardous Waste Management Unit	Amount Disposed (tons)
Cabot Corporation	041808001	Tuscola	Underground Injection Well	442,350
LTV Steel	1558010006	Hennepin	Underground Injection Well	25,343
Peoria Disposal Corporation	1438120003	Peoria	Hazardous Waste Landfill	164,414
Marathon Oil	0338080002	Robinson	Land Treatment	19,336
CWM CID	0310390001	Calumet City	Hazardous Waste Landfill	3,504
Sterling Steel	1950500007	Sterling	On-Site Hazardous Waste Landfill	14,532
TOTAL				**669,479**

Land treatment units incorporate the hazardous waste into the upper layers of the soil to allow soil microbes and sunlight to degrade, transform, or immobilize hazardous constituents present in hazardous waste. Treatment changes the nature of the hazardous waste so as: (1) to neutralize it, or render it non-hazardous or less hazardous; (2) to recover it; (3) to make it safer to transport, store or dispose of; or (4) to make it amendable for recovery, storage or volume reduction. Approximately 0.3 million tons of the hazardous waste was treated in 1999 by Illinois hazardous waste management facilities. The residuals were handled as pollution control wastes (415 ILCS 809). A pollution control waste is any liquid, solid, semi-solid or gaseous waste generated as a direct or indirect result of the removal of contaminants from the air, water, or land, and which pose a present or potential threat to human health or to the environment or with inherent properties which make the disposal of such waste in a landfill difficult to manage by normal means. Examples of pollution control wastes are waste water treatment plant sludges, baghouse dusts, landfill waste, scrubber sludges, and chemical spill cleanings (415 ILCS 5/3.27).

7. Underground Injection Control

Since 1984, landfill disposal of liquid hazardous waste has been banned in Illinois (415 ILCS 5/22.6). Liquid hazardous waste must be: (1) treated (e.g., render it so it meets sewer discharge criteria, render it non-liquid with sorbents, etc.) and disposed; or (2) incinerated; or (3) injected into underground injection control wells. The Illinois EPA and U.S. EPA regulate underground injection of liquid waste into deep wells (i.e., underground injection control wells) to ensure that underground sources of drinking water are protected from contamination (Safe Drinking Water Act (42 U.S.C. 300 et seq.) and Resource Conservation Recovery Act (□RCRA,□ 42 U.S.C. 6901 et seq.)).

Four deep underground injection control wells are permitted to dispose of liquid waste generated on-site. Three of these wells are permitted to dispose of liquid hazardous waste and one (Equistar in Tuscola) is permitted only to dispose of liquid non-hazardous waste.

Facility	Illinois Identification Number	Location
Cabot Corporation*	0418080001	Tuscola
LTV Steel	1558010006	Hennepin
Equistar	0418080002	Tuscola

*There are two underground injection wells at Cabot Corporation facility.

These wells are tested at least annually to ensure that they maintain mechanical integrity (i.e., there is no significant leakage in the casing, tubing or packer or no significant fluid movement into an underground source of drinking water). If a well should fail a mechanical integrity demonstration, it will be shut down immediately until corrective actions are complete and the well has been brought back into compliance. The conditions of the permit limit the injection pressure to ensure safe operation of the well.

8. Contaminated Sites

Successful completion of cleanup program requirements results in a completion letter. The table on the next page shows the type of completion letters issued by the Illinois EPA cleanup programs.

9. Redevelopment of Abandoned Industrial and Commercial Properties

The Illinois EPA offers technical and financial support to communities through the services of its Brownfields representatives. They will travel to communities and sit down with city leaders upon request to (a) explain remediation options, regulatory program requirements, and environmental liability status; (b) help municipalities secure public and private financial assistance; and (c) guide potential grant and loan recipients through the brownfields cleanup and redevelopment process.

WATER QUALITY MANAGEMENT

1. Rivers and Streams

The rivers and streams in Illinois have been classified as either good, fair, or poor. This classification uses chemical, physical, and biological data, as well as, information from land use activities for an assessment of whether a waterbody can support activities for which it could be used. Specifically, the assessment combines several indices which measure how well that waterbody can support aquatic life. "Good" indicates that it can fully support aquatic life, "Fair" indicates partial support, and "Poor" indicates that it cannot adequately support aquatic life. For rivers and streams, an assessment of how well a particular waterbody can support aquatic life is considered the single best indicator of overall stream conditions.

The Bureau of Water assesses rivers and streams on a biennial 305(b) report cycle. This *2002 Annual Environmental Conditions Report* uses data from the most recently completed 02 Cycle 305(b) report which presented data collected through September 2000. Over eighteen (18.3) percent of the total stream miles in Illinois were assessed for that report.

As part of the 305(b) assessment of use support within Illinois rivers and streams, the Illinois EPA differentiates and reports the number of stream miles assessed with use impairments from point sources only, nonpoint sources only, and from both point and nonpoint sources. The number of assessed stream miles needing additional nonpoint source corrective actions to meet Clean Water Act goals and objectives is calculated by adding the number of stream miles with use impairments from both point and nonpoint sources to the number of stream miles with impairments from nonpoint sources only. The percentage of rivers and streams with impairments by nonpoint sources is the sum as a percent of the overall stream miles assessed in Illinois.

2. Fish Contamination

From 1985 through 2001, the Illinois Fish Contaminant Monitoring Program tested fish at 440 stations in Illinois. Fish consumption data was available for approximately 5 percent of the total stream miles and 41 percent of the total lake acres in Illinois. Fish have been tested and found to be safe for unlimited consumption in 80 percent of the stream miles and 74 percent of the lake acres for which there is fish consumption information available. Note, however, that beginning in 2002, consumption fish advisories have been issued state-wide for predator species as a result of a change in the Health Protection Values for methyl mercury.

3. Lake Conditions

The overall use assessment methodology aggregates the use support attained for each of the five individual uses assessed (fish consumption, aquatic life, swimming, drinking water, and recreation). This aggregation is achieved by assigning "overall use support points" to each individual use assessed (0 pts. = full, 1 pt. = partial, 2 pts. = non support), then summing the points, generating an average, and assigning an overall use support. Lakes with average values of less than 0.5 were rated Good; lakes with values of between 0.5 and 1.5 are rated Fair; and lakes with average values of greater than 1.5 are rated Poor. Therefore, the good, fair, poor indicator of overall use support represents a particular lakes' overall ability to support activities such as aquatic life, fish consumption, swimming, drinking water supply, and other recreation.

The Bureau of Water assesses inland lakes on a biennial 305(b) report cycle. This *2002 Annual Environmental Conditions Report* uses data from the most recent "02 Cycle" 305(b) assessment process which looks at data collected through September 2000. For that cycle, 60.5 percent of the acreage of inland lakes in Illinois was assessed.

As part of the 305(b) assessment of use support within Illinois inland lakes, the Illinois EPA differentiates and reports the number of assessed lake acres with use impairments from point sources only, nonpoint sources only, and from both point and nonpoint sources. The assessed lake acres needing additional nonpoint source corrective actions to meet Clean Water Act goals and objectives is calculated by adding the number of lake acres with use impairments from both point and nonpoint sources to the number of lake acres with impairments from nonpoint sources only. The percentage of inland lakes with impairments by nonpoint sources is the sum as a percent of the overall lake acres assessed in Illinois.

Lake Michigan forms the Northeastern portion of Illinois' border. As the only Great Lake which borders Illinois, Lake Michigan must maintain standards that are stricter than other Illinois lakes. Furthermore, Illinois' largest population center exists near the shoreline of Lake Michigan. An overall use support assessment can indicate whether Lake Michigan meets its standards and is safe for human uses.

The Bureau of Water assesses Lake Michigan on a biennial 305(b) report cycle. This *2002 Annual Environmental Conditions Report* uses data from the 02 cycle 305(b) assessment which utilized data from through September 2000. All 63 shoreline miles of Lake Michigan in Illinois were assessed.

4. Groundwater Conditions

Groundwater quality at community water supply wells utilizing unconfined aquifers in the Ambient Network of Community Water Supply Wells (CWS Network) is being evaluated in relation to Illinois' groundwater quality standards regulations. The CWS Network is intended to represent the detection of pesticides, volatile organic chemicals and other chemical contamination in the population of CWS wells across Illinois. This in turn provides an overview of the groundwater conditions in the "principal aquifers" of Illinois.

The "principal aquifers" used in Illinois were classified by O'Hearn and Schock in 1984 into three basic categories: sand and gravel, shallow bedrock, and deep bedrock. A principal aquifer is defined as an aquifer with a potential yield of 100,000 gallons per day per square mile and has an area of at least 50 square miles (O'Hearn and Schock, 1984).

The CWS Network design was based upon the sampling of existing CWS wells and incorporates a random probability based scheme (95 percent confidence, plus or minus 5 percent precision and accuracy) which is randomly stratified by aquifer type, geologic susceptibility and well depth. Thus, to represent the entire population of community wells and associated principal aquifers a statistical approach has been utilized. The CWS Network was initiated in 1992. The network selections took into account spatial and temporal factors. To improve statistical accuracy, the CWS Network well selections were made by random selection and stratified by three variables to improve precision and accuracy. The stratification variables included well depth range (0-49, 50-99, 100-149, 200-299, 300-399, and >400 feet), uppermost aquifer material within 50 feet (yes or no), and aquifer type. Aquifer types were designated in six specific Systems: sand and gravel, Mississippian/ Pennsylvanian, Silurian/Devonian, Camrian/Ordovician, and mixed.

In addition, during 1997 the Illinois EPA initiated a targeted rotational monitoring approach designed to further optimize Bureau of Water resources. The Groundwater Section will continue to maintain the Ambient Monitoring Network of Community Water Supply Wells, but will begin sampling this network every two years. This will allow the Bureau to target special studies every other year while maintaining the integrity of the resource assessment. The 1997 rotating monitoring network consisted of wells which were suspected of having groundwater impacts as a result of Safe Drinking Water Act compliance monitoring.

4. Excess Pollutant Load Discharged (Report text has complete explanation)

5. Watershed Plans (Report text has complete explanation**)**

6. Source Water Protection

The Illinois EPA, Bureau of Water has taken the following steps to implement a source water protection program in Illinois:

- Established a Source Water Technical and Citizens Advisory Committee;
- Contracted with four Illinois universities to delineate 110 community water supplies recharge areas (approximately 200 to 300 wells);
- Developed a recharge area delineation procedure for newly permitted community water supply wells; formalized a contract with the Illinois Rural Water Association and continued the identification of potential contamination sources within wellhead protection areas;
- Executed a contract with the Illinois Department of Public Health and continued mapping the locations of all public non-community water supply wells in the state and to conduct potential contamination source inventories within the source water protection areas of these wells;
- Continued delineation of the watersheds for the community water supplies utilizing surface water as their source of drinking water;
- Initiated a contract with the Illinois State Geological Survey (ISGS) to index the ISGS well numbers with the Illinois EPA field verified locations of community and non-community water supply wells; conducted prototypical modeling and analysis of both groundwater and surface water sources utilizing the Bureau's geographic information system and data base systems; and
- Continued development of fact sheets and Internet information which can be utilized by the public at http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl .

  Implementation of a source water protection program is yielding the following benefits in Illinois: increased pollution prevention implementation; eligibility for up to three bonus points under the state revolving loan fund priority system; eligibility for monitoring waivers and reduced laboratory expenses; added protection under the new Tiered Approach for Corrective Action Objectives; and Conservation Reserve and Environmental Quality Incentives Program (EQIP) Eligibility Bonus Points.

8. Groundwater Recharge Area Protection (Report text has complete explanation)

9. Areas of Concern

Waukegan Harbor is listed as an Area of Concern (AOC) as defined by the U.S.-Canada Great Lakes Water Quality Agreement (Annex 2 of the 1987 Protocol). The evaluation of the environmental quality of Waukegan Harbor is based upon 14 individual use impairment indicators established by the International Joint Commission (IJC) as specified in the Great Lakes Water Quality Agreement. Currently five use impairments have been identified for the Waukegan AOC based on the listing/delisting criteria approved by the IJC. Following completion of Stage III of the Remedial Action Plan (RAP), an evaluation of the potential for delisting will be made.

MULTIMEDIA MANAGEMENT

1. Toxic Release Inventory

Many industrial facilities in Illinois must file an annual report that details the release of toxic materials. An inventory of these reports is maintained by the Illinois EPA. This inventory is known as the toxic release inventory or TRI. The TRI totals presented in this report are based on amounts submitted by all reporting facilities for each calendar year, and exclude those chemicals that have been removed from the list of toxic chemicals by U.S.EPA within the time period represented.

For purposes of long-term trend analysis of toxic chemical release amounts, Illinois EPA excludes chemicals that have been either added to or removed from the list of toxic chemicals by U.S. EPA, or for which reporting requirements have been significantly changed by U.S. EPA during that period. This method of analysis is considered more desirable than using all reportable chemicals as an indicator because the previous years' totals may change significantly due to changing reporting requirements.

2. Emergency Incidents

State and Federal law require the immediate telephone notification to emergency agencies of the occurrence of spills. The frequency of reported emergencies is expected to reflect the degree of care, preventive planning and precautions taken during the manufacture, storage, use and transportation of hazardous chemicals. However, incident frequency can also be influenced by several other factors including changes over time in economic activity, reporting thresholds and awareness of reporting underground storage tanks (LUSTs) that are discovered during planned removals and renovations. Since most of these LUSTS are not immediate emergencies, we have subtracted them from the total of reported incidents for the purpose of this indicator.

3. Pollution Prevention

The Agency tracks progress in pollution prevention by looking at the statewide total quantity of hazardous waste that is reported to be reduced by hazardous waste generators through new source reduction activities. This data is reported on the Hazardous Waste Report Form GM that is required under RCRA. The Agency also evaluates the number of new and expanded pollution prevention activities reported in the toxic release inventory.

APPENDIX C

ACRONYM GLOSSARY

ADVMT	Average Daily Vehicle Miles Traveled
AFV	Alternative Fuel Vehicle
AOC	Area of Concern
AQCR	Air Quality Control Region
AQI	Air Quality Index
ATU	Allotment Trading Unit
BOA	Bureau of Air
BOL	Bureau of Land
BOW	Bureau of Water
CAA	Clean Air Act
CAAPP	Clean Air Act Permit Program
CAG	Citizens' Advisory Group
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFFP	Clean Fuel Fleets Program
CO	Carbon Monoxide
CWA	Clean Water Act
CWS	Community Water Supply
DMR	Discharge Monitoring Report
E-85	Ethanol
ECOS	Environmental Council of the States
EMSA	Environmental Management Systems Agreement
EPCRA	Emergency Planning and Community Right To Know Act
EQIP	Environmental Quality Incentives Program
ERMS	Emissions Reduction Market System
FOS	Field Operations Section
GIS	Geographic Information Systems
HAP	Hazardous Air Pollutant
IJC	International Joint Commission (on Great Lakes)
IM Program	Inspection and Maintenance Program
IMES	Industrial Material Exchange Service
ISGS	Illinois State Geological Survey
ISO	International Organization for Standardization
LEV	Low Emission Vehicle
LUST/UST	Leaking Underground Storage Tank
MACT	Maximum Achievable Control Technology
MGD	Million Gallons per Day
MOA	Memorandum of Agreement
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NAMS	National Air Monitoring Station
NEAT	National Environmental Achievement Track

NESHAP	National Emission Standard for Hazardous Air Pollutants
NO2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OBD	On-Board Diagnostics
OEM	Original Equipment Manufacturer
OMC	Outboard Marine Corporation
OPP	Office of Pollution Prevention
P2	Pollution Prevention
PAMS	Photochemical Assessment Monitoring Station
Pb	Lead
PBT	Persistent Bioaccumulative and Toxic
PCB	Polychlorinated Biphenyl
pcd	Pounds per Capita per Day
PM	Particulate Matter
PM_{10}	Particulate Matter nominally 10 micrometers and less in diameter
$PM_{2.5}$	Particulate Matter Smaller than 2.5 Micrometers in Diameter
ppb	Parts Per Billion
PRP	Potentially Responsible Party
PSI	Pollutant Standards Index
PTE	Passenger Tire Equivalent
RACT	Reasonably Achievable Control Technology
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RFG	Reformulated Gasoline
SFY	State Fiscal Year
SIP	State Implementation Plan
SLAMS	State/Local Air Monitoring Station
SO2	Sulphur Dioxide
SPMS	Special Purpose Monitoring Station
SRP	Site Remediation Program
SWMD	State Weapons of Mass Destruction
TMDL	Total Maximum Daily Load
tpd	Tons Per Day
TRI	Toxic Release Inventory
TSCA	Toxic Substances Control Act
U.S.EPA	United States Environmental Protection Agency
UIC	Underground Injection Control
ULEV	Ultra Low Emission Vehicle
VMT	Vehicle Miles of Travel
VOC	Volatile Organic Chemical
VOM	Volatile Organic Matter
WRAS	Watershed Restoration Action Strategy
ZEV	Zero Emissions Vehicle