Illinois
Environmental
Protection Agency

IEPA/ENV/01-013

Office of Environmental Quality
1021 North Grand Avenue East
Springfield, Illinois 62706
July 2001

Annual Environmental Conditions Report 2000

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 2000 Annual Environmental Conditions Report continues to reflect the performance measurement system jointly adopted by the Environmental Council of States and the USEPA.

- The new Air Quality Index (AQI), which replaces the Pollutant Standards Index (PSI), 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. The percentage of days with good or moderate air quality declined in 2000 as a result of the change to the AQI. If the PSI had been used, the percentage of days in both the Chicago and Metro-East areas with good or moderate air quality would be 100%.
- We also continue to see more waterways achieve a good condition and to see some reduction in nonpoint source impacts. The population served by safe drinking water supplies increased due to an improvement or reduction in nitrate excursions as well as a reduction in microbial problems.
- New information is provided on the amount of sludge produced, utilized and disposed.
- The cumulative total area remediated since 1981 is almost 49,000 acres or 54% of the environmental objective of 90,000 acres by 2005.
- Since 1987, the number of active landfills has fallen, however, landfill capacity has increased during the same period due to expansion of existing landfills and new landfill construction. The amount of waste disposed at the landfills has not changed significantly over the past 10 years. However, the amount reported in 1999 represents a 12.9% increase which may signal a trend that merits careful watching.
- The backlog of open dump sites needing cleanup has decreased to 12%. This means that over 88% (or 3,161 out of 3,573) of all open dumps discovered since 1997 have been cleaned up. About 50% of all open dumps are cleaned up within 12 months of their discovery.

The Agency welcomes comments and suggestions on this sixth report. We also hope this report provides useful information for the public and interest groups that have a stake in environmental protection.

Thomas V. Skinner, Director

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ANNUAL ENVIRONMENTAL CONDITIONS REPORT - 2000

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 (USEPA), Region 5, the Illinois EPA commits to prepare and distribute this report. The FY2001 agreement 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 multimedia 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.

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.

Environmental Progress Agenda

Under the performance partnership system, the states and USEPA 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.

Several 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


Flare controlling organic emissions.

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 95% “good” or “moderate" air quality conditions in the areas of the state outside the Chicago and Metro-East 1-hour ozone non-attainment areas.
2. Maintenance of 95% “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 Metro-East nonattainment area by 2004.
5. Attainment of the 1-hour ozone standard in the Chicago nonattainment area by 2007.

LAND QUALITY MANAGEMENT


Cleanup of contaminated soils and groundwater.

Goal: Safe waste management and restored land.

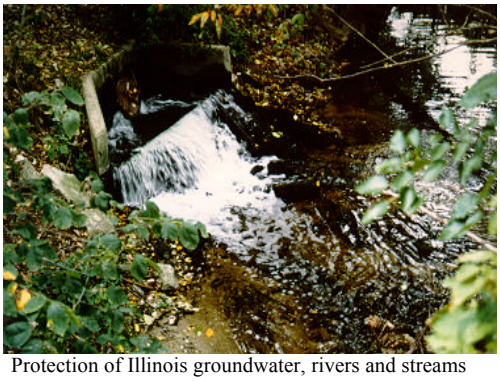
Environmental Objectives:

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.
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:


Protection of Illinois groundwater, rivers and streams for aquatic life, recreation, and drinking water.

1. Waterways with good water quality conditions will increase 5% from 2000 levels by the year 2005.
2. The percentage of lakes in good or fair condition will remain constant from 2000 to the year 2005.
3. The percentage of open Lake Michigan shoreline miles in good condition will remain constant from 2000 to the year 2005.
4. The percentage of the population served by community water supplies that receive drinking water with no short-term (acute) or long-term (chronic) adverse health effects will increase to over 95% by the year 2005 (an increase of 5%).
5. A declining trend of groundwater contaminants in Community Water Supply wells will occur through the year 2005.

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.

Fire at facility's petroleum bulk tanks.

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.

As a special feature of this report, we have also provided "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.

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 USEPA has established national air quality standards for six criteria pollutants: carbon monoxide (CO); lead (Pb); sulfur dioxide (SO_2); nitrogen dioxide (NO_2); 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 and 8-hour ozone standards.

In July 1997, USEPA 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 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 USEPA 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 and analyses of monitoring samples. 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 has begun to collect data. Monitoring for 8-hour ozone is also ongoing and Illinois has submitted its proposed designations for 8-hour ozone nonattainment areas to USEPA. 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 *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.

AIRSHED CONDITIONS

Environmental Objectives:

Ozone levels in Chicago have improved significantly since 1988.

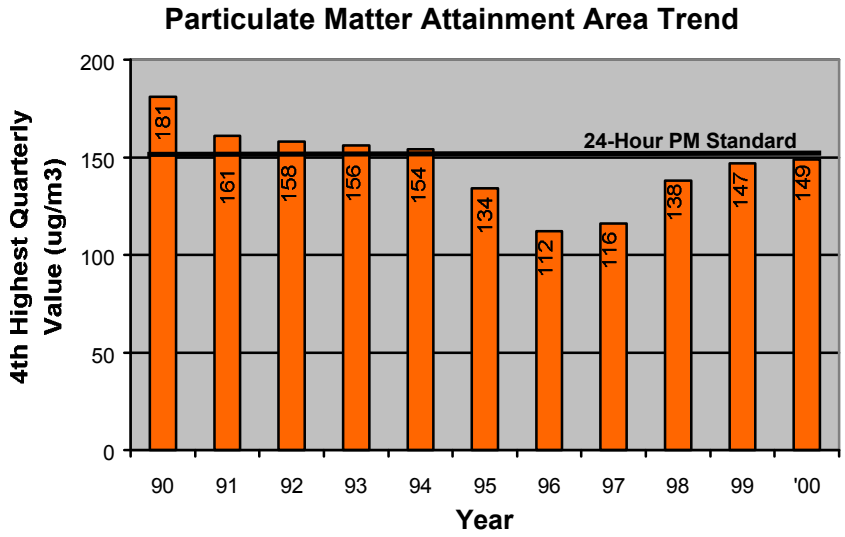
1. Maintenance of 95%[1] "good" or" moderate" air quality conditions in the areas of the state outside the Chicago and Metro-East 1-hour ozone nonattainment areas.
2. Maintenance of 95% "good" or "moderate" air quality conditions in the two 1-hour ozone nonattainment areas.
3. Maintenance of attainment status for pollutants other than ozone, especially in urban areas.
4. Attainment of the 1-hour ozone standard in the Metro-East area by 2004.
5. Attainment of the 1-hour ozone standard in the Chicago area by 2007.

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 2000 represents the average of monitored levels in 1998, 1999 and 2000.

Figure 1

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.



[1] The new Air Quality Index, which replaces the Pollutant Standards 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

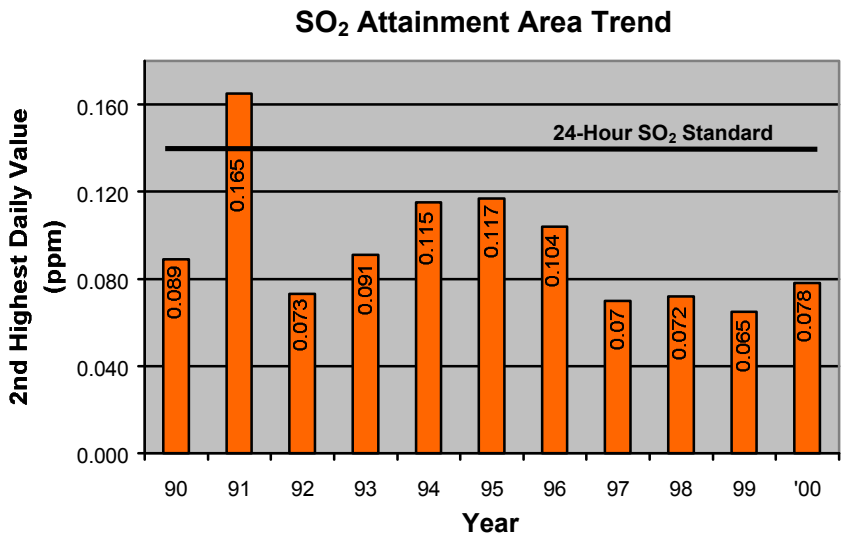
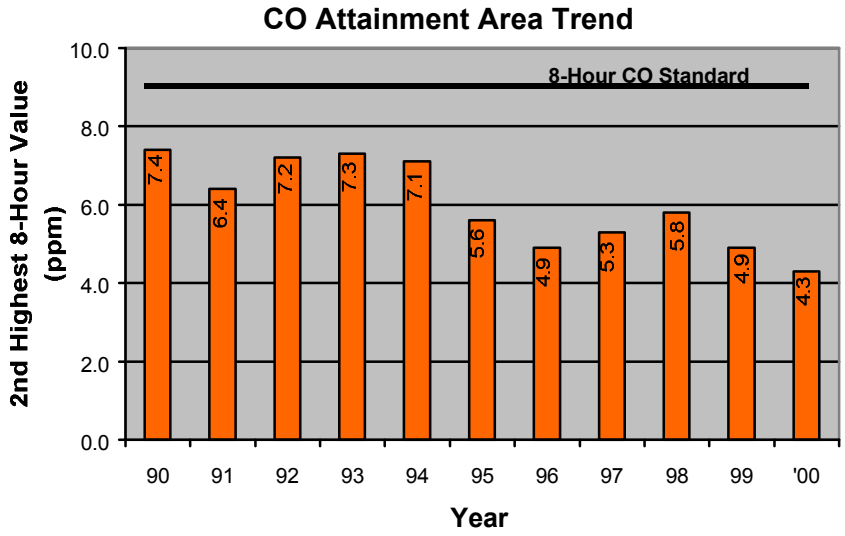


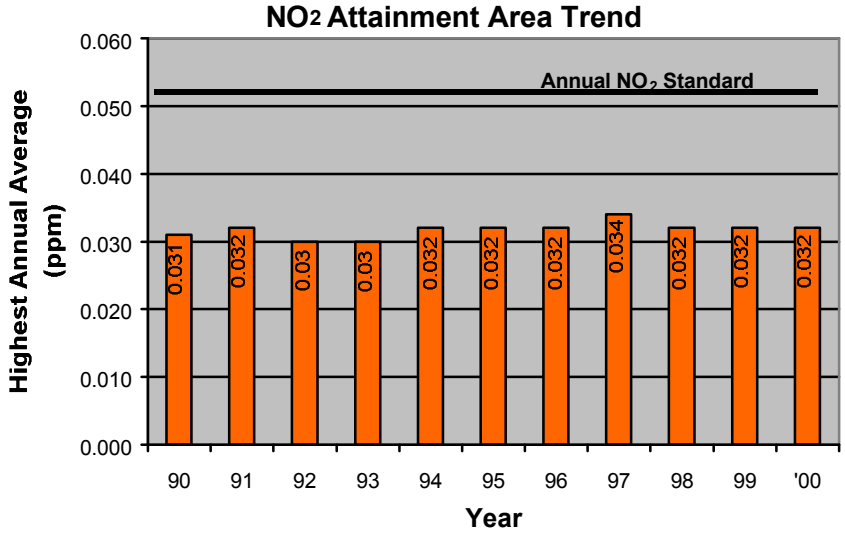
Figure 2 shows the ambient air quality levels of SO_2 emissions (reported as the second highest daily level measured at all monitors) monitored in the entire state. Additionally, all of Illinois' utilities subject to the USEPA's Acid Rain Program for SO_2 emissions are in compliance with that program.

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



NO_2 ambient levels, in **Figure 4**, have remained fairly steady during the past decade. The NO_2 air quality in the state is well within the national standard .

Figure 5

Figure 5 shows that the ambient air levels of lead in the State declined significantly since 1990, but levels have remained fairly steady in recent years.

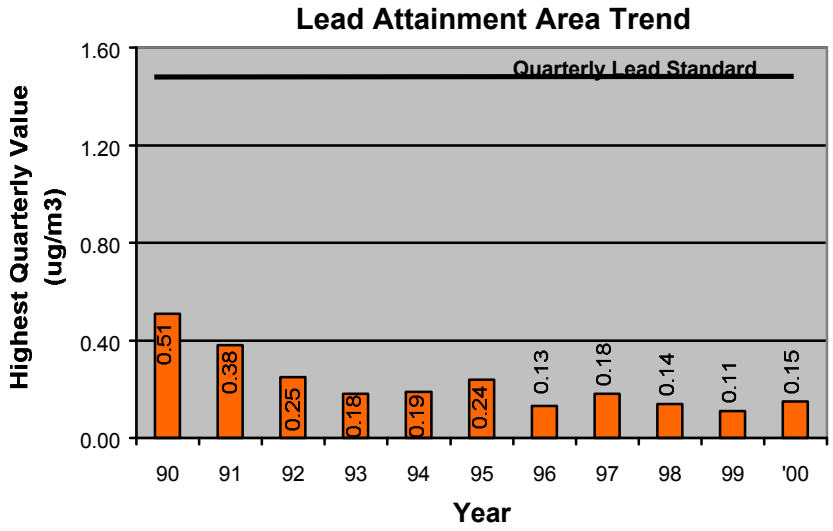
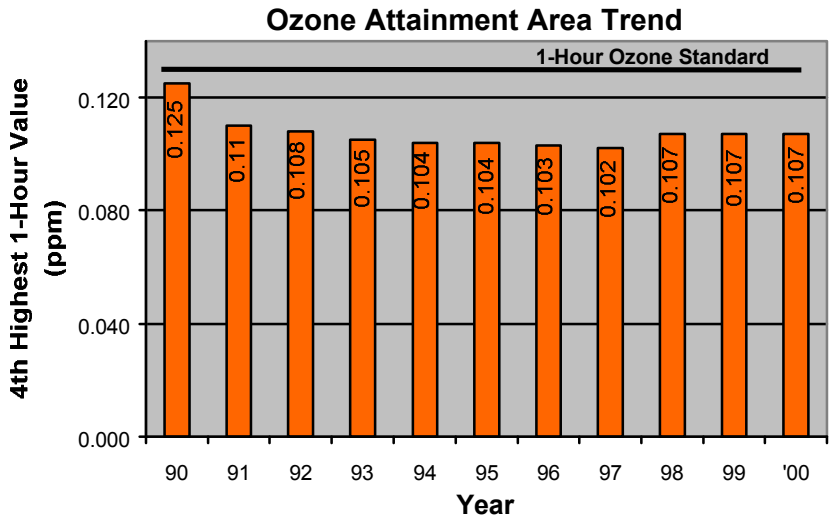


Figure 6

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

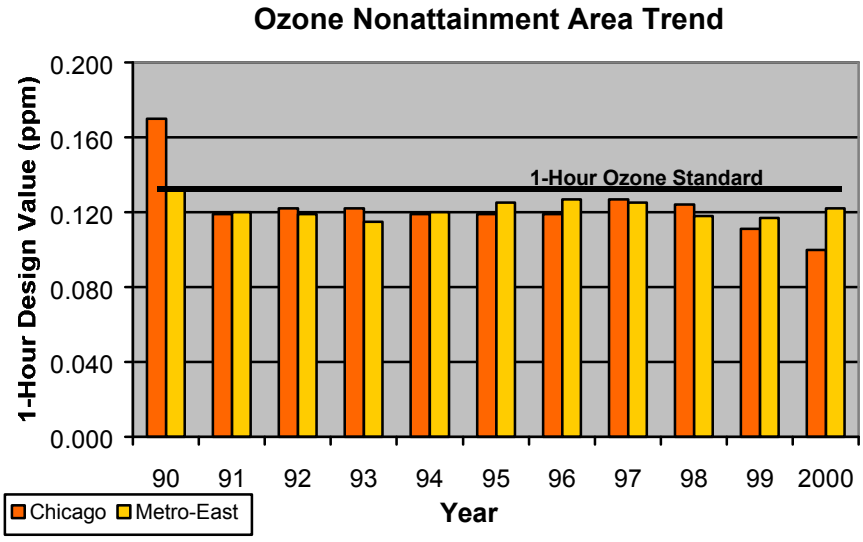


Reduction in Ozone Levels (Nonattainment Areas)

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 is due to elevated levels of ozone in Jersey County, which is downwind of the Metro-East nonattainment area. Jersey County experienced one day in excess of the 1-hour ozone standard in 1998, three days in excess in 1999, but no days in excess in 2000. Improvement in the 1-hour ozone air quality levels in Jersey County depends upon attaining the standard in the Metro-East nonattainment area.

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

Figure 7



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 in this area for Chicago and Metro-East, respectively. The progress seen in both Chicago and Metro-East in 1996 through 2000 is significant, particularly compared to 1988 when we had 70 ozone-conducive days and 20 exceedance days in Chicago and 48 ozone-conducive days and 12 exceedance days in Metro-East. In 2000, there were no ozone exceedances days in Chicago or Metro-East.

Figure 8

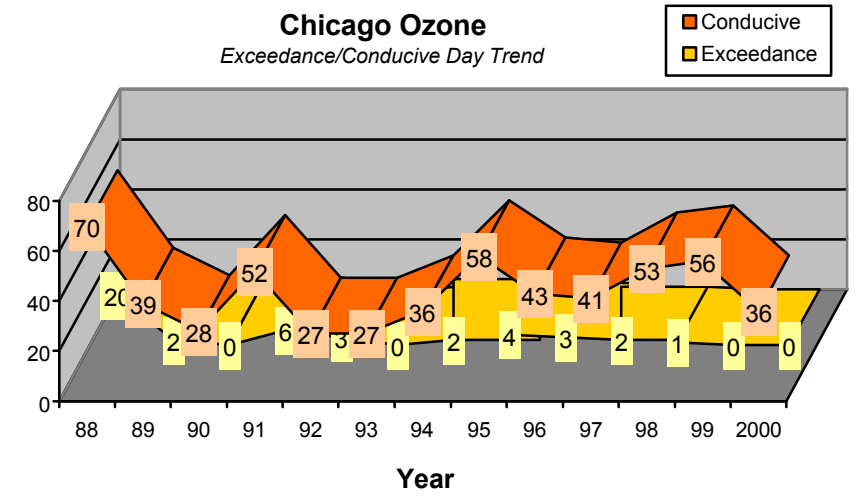


Figure 9

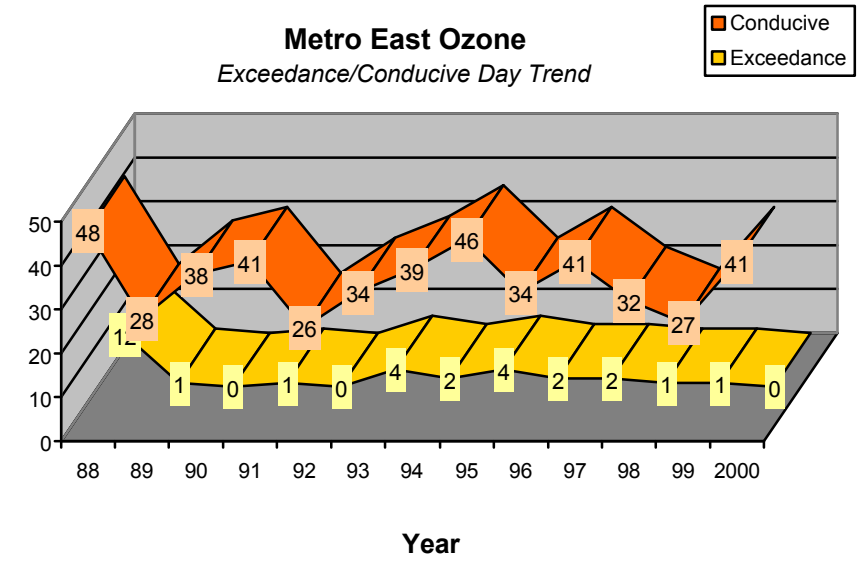
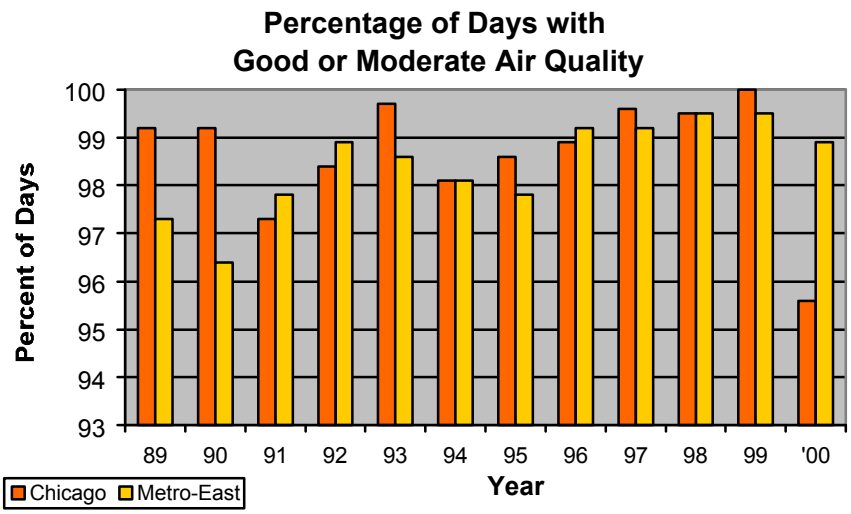


Figure 10



The bar chart in **Figure 10** provides information regarding the percentage of time each year that the Chicago and Metro-East ozone nonattainment areas have experienced air quality that is at or below the national standards for all six criteria pollutants.

As ozone is the only pollutant for which the state has any designated nonattainment areas, it is the pollutant that tends to cause any day's air quality to be less than moderate. Other metropolitan areas of the state have experienced good to moderate air quality 100% of the time in recent years.

The specific means for determining this comprehensive look at all pollutants in an airshed is measured by the new Air Quality Index (AQI), which is described in more detail in Appendix B, and replaces the Pollutant Standards Index or PSI used for last year's *Environmental Conditions Report*. The above figure shows that the percentage of days with good or moderate air quality declined in 2000 as a result of the change to the AQI. If the PSI had been used, the percentage of days in both the Chicago and Metro-East areas with good or moderate air quality would be 100%.

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.
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 by 2002.
3. Reductions in emissions of hazardous air pollutants.

Steam being discharged from water cooling tower.

Reduction of VOM and NOx Emissions

The Chicago and Metro-East areas are considered 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. The pie charts in **Figures 11** and **12** 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.

On-road mobile source.

Figure 11

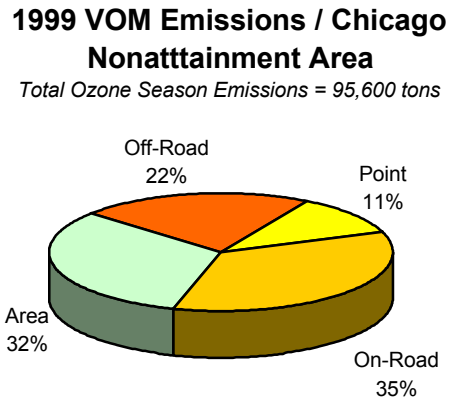
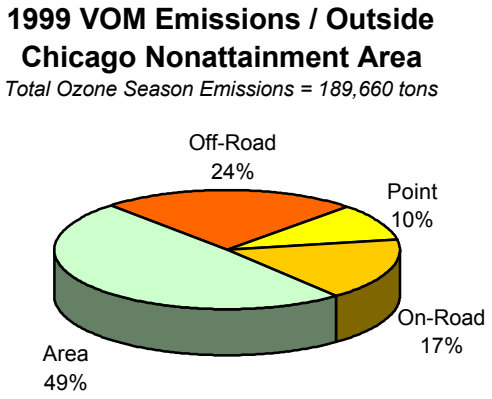


Figure 12



Figures 13 and **14** illustrate the relative distribution of NOx emissions in the Chicago nonattainment area and outside the Chicago nonattainment area. NOx is largely a product of combustion. Therefore, large emitters of NOx include fossil fuel-fired power generators, industries that use fossil fuels to create heat, and engines.

Figure 13

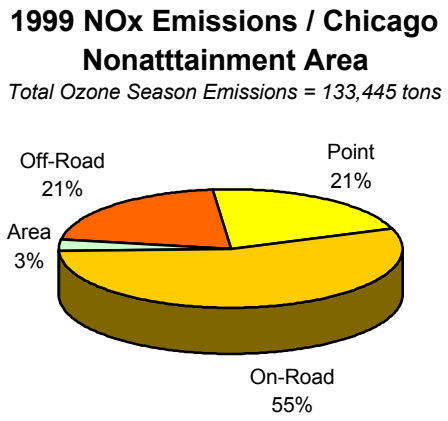
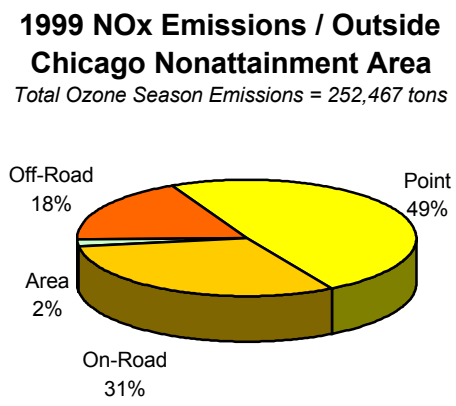


Figure 14



Figures 15 and **16** show the VOM and NOx emissions in the Metro-East area respectively.

Figure 15

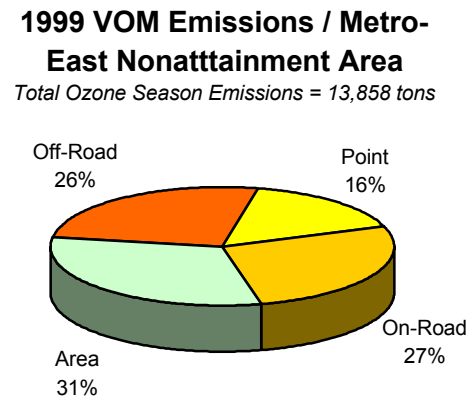
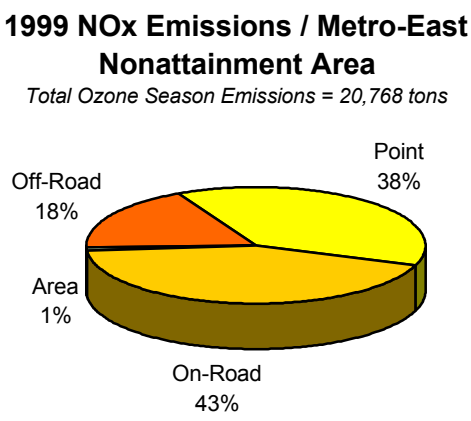


Figure 16



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, USEPA 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 SIP. The Illinois EPA submitted several rulemakings to the Illinois Pollution Control Board to address the NOx SIP Call and these rules have been adopted and have been submitted to USEPA. USEPA has proposed to approve these rulemakings.

Our air quality modeling analyses have found that the NOx emissions 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 Chicago and Metro-East nonattainment areas.

NOx SIP Call

The Ozone Transport Assessment Group (OTAG), composed of 37 jurisdictions (including Illinois), USEPA, and representatives of industry and environmental groups, was formed to study and propose solutions to address the ozone transport phenomenon—the process by which ozone is transported to areas downwind.

In October 1998, based on OTAG's findings, USEPA under authority provided by the Clean Air Act promulgated the NOx SIP Call. The NOx SIP Call impacts the 23 jurisdictions east of the Mississippi River and requires upwind areas to reduce the amount of NOx emissions within their jurisdiction that significantly contribute to downwind areas' inability to attain the ozone standard. Although the NOx SIP Call was challenged in federal court, the majority of the rule has been upheld and is applicable to Illinois.

The NOx SIP Call establishes a statewide budget for seasonal (May through September) NOx emissions from all sources (stationary, area, on-road mobile and off-road mobile). USEPA's NOx emissions budget is based on obtaining set levels of reductions from large electrical generating units (EGUs), large non-electrical generating units (non-EGUs--process boilers and cogeneration systems), cement kilns and large stationary internal combustion engines.

The NOx SIP Call also establishes a federally administered NOx Trading Program that allocates NOx allowances to each jurisdiction that elects to participate. These allowances are to be distributed among EGUs and non-EGUs, and may be traded among all participating units, including units in other jurisdictions.

Illinois EPA has proposed, and the Pollution Control Board (Board) has adopted, rules to implement the NOx SIP Call at 35 Ill. Adm. Code 217, as follows: Subpart W, for EGUs; Subpart U, for non-EGUs; Subpart T, for cement kilns; and Subpart X, a voluntary opt-in program. Subparts W and U provide that Illinois will participate in the federal NOx Trading Program for those units covered by these subparts, and provides a methodology for the allocation of NOx allowances to EGUs and non-EGUs. These rules were negotiated with industry and business groups, were approved through a public hearing process, were submitted to USEPA as revisions to Illinois' State Implementation Plan, and USEPA has proposed to approve these rules. The compliance date for these rules is May 31, 2004.

The regional NOx reductions from the implementation of the NOx SIP Call are one of the last components of Illinois' attainment demonstration plans for the Chicago and Metro-East ozone nonattainment areas.

Emissions Reduction Market System

The Illinois EPA recently completed the first 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. ERMS began operation with 179 sources participating in the VOM emissions trading market. Participating sources are issued allotment trading units (ATUs) by the Illinois EPA each year for their seasonal emissions. In 2000, a total of 96,882 ATUs were allotted to sources. 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. One of the seasonal trades in 2000 involved a donation of ATUs for such environmental benefit.

The first year of ERMS produced 32 seasonal trades and 3 long-term transfer agreements. These involved a total of 23 sources as sellers and 34 as buyers, with 1,643 ATUs changing hands. This amounts to 1.7% of the total ATU allotment for the area, and 2.8% of the ATUs retired for compliance purposes.

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

1. The allotment shows a 10.3% reduction from the original baseline for sources.
2. Sources were able to find trading partners, there was a sufficient supply 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 manner.
5. Overall, sources in the ERMS program emitted 44.1% less VOM than their baselines would have allowed them to emit, and 37.9% less than their actual ATU allotment for 2000.
6. The qualitative approach taken for this first year did not indicate any adverse relationship between market activity and hazardous air pollutant source performance.

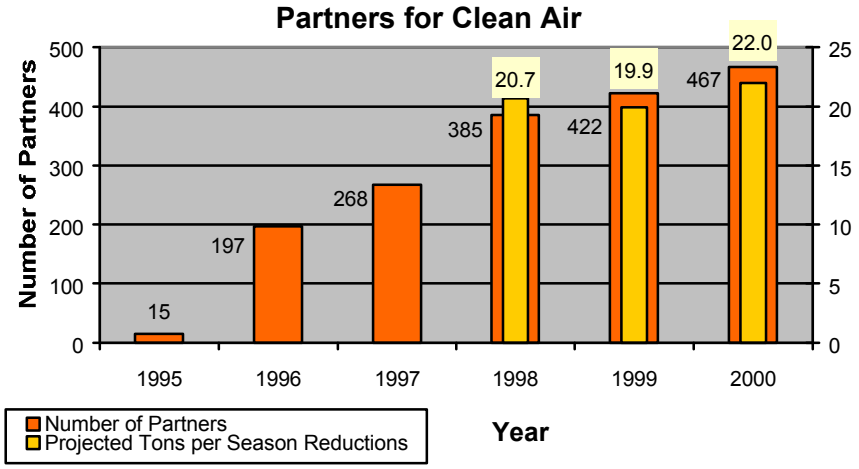
Voluntary Reductions of Ozone Precursor Emissions

The Partners for Clean Air is a voluntary organization of industries and other entities in the Chicago area who take certain actions on Ozone Action Days (days when meteorologists predict that the weather patterns are conducive to ozone formation). The Agency forecasts Ozone Action Days based upon weather information and notifies the Partners. The Partners (with their employees) then take one or more actions to help reduce emissions of VOM. 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.

In 2000, the number of Corporate Partners rose to 467 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 on the next page. The Partners for

Clean Air accounted for an estimated 22.0 tons of VOM emissions reduced during the 2000 ozone season as presented in **Figure 17**. We believe the efforts of the Partners and other individuals have been important in reducing the number of ozone exceedances days.

Figure 17



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

1. Limit driving, ridesharing, carpooling, walking, or biking.
2. Using public transportation.
3. Avoiding excessive car idling and jack-rabbit starts.
4. Refueling cars only after 7:00 p.m.
5. Avoiding using gasoline-powered recreational vehicles.
6. Deferring lawn mowing and gardening chores that use gasoline-powered equipment
7. Postponing oil-based paint and solvent use.
8. Barbequing with electric starters, not fluid starters.
9. Deferring use of household consumer products that release fumes or evaporate easily.
10. Conserving 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.

In February 1999, Illinois launched operation of its Enhanced Vehicle Inspection and Maintenance (I/M) program, required by the Clean Air Act. A major difference in the enhanced test that drivers did not experience under the previous program is that this test includes a dynamometer test of the vehicle that allows for measurement of vehicle exhaust emissions at various speeds and loads, simulating actual in-use conditions. Because the enhanced test is more effective in identifying gross emitting vehicles than the idle test it replaces and is augmented with the evaporative system integrity test (i.e., gas cap pressure test), we expect that the emissions reductions from this new program will be greater than with the previous program. During 1999, we tested 1.6 million vehicles, 9.7% of which failed the initial test. During 2000, we tested 1.5 million vehicles, 8.5% of which failed the enhanced test. Repairs sufficient for

the vehicles to pass on retest or to enable the owner to receive a waiver resulted in the reduction in VOM emissions of approximately 6,533 tons during the 2000 ozone season in the Chicago area, compared to what would have been emitted without the 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. This included the Chicago metropolitan area. RFG must meet certain federal standards for VOM and NOx emissions upon combustion. RFG is projected to result in significant reductions in VOM in the Chicago area and provides a significant contribution to the improvement in air quality.

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 nonattainment 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. We anticipate that the CFFP will result in a reduction of 459 tons of VOM during the ozone season (3 tons per day) from more than a thousand fleets that are required to be in the program.

The CFFP emissions reductions number in 2000 increased from the previous year (0.3 TPD to 3 TPD), a ten-fold increase. This program realized a significant increase in emission reductions for several reasons:

1. The initial emissions reduction estimates made for this program in 1994 significantly underestimated the reductions.
2. There are more fleets subject to the program than anticipated.
3. Persons subject to the program are purchasing more clean-fueled vehicles than required by the program, and are not using those "credits" to offset future purchase requirements.
4. Persons subject to the program are purchasing lower-emitting vehicles than the minimum LEV requirements, such as ultra-low emitting vehicles or ULEVs, inherently low emitting vehicles or ILEVs, and zero emission vehicles or ZEVs. Those vehicles run on natural gas, fuel cells, electricity or 85% ethanol blended fuels, and thus not only have lower tailpipe emissions, but also have lower evaporative emissions than LEVs.

The Stage I Vapor Control Program requires that the vapors emitted when unloading gasoline from a tanker truck to the storage tanks at gasoline stations be captured. This program applies statewide. The Stage II Vapor Control Program applies only in the Chicago nonattainment area. It requires capture of the vapors from a dispensing nozzle that would be emitted when fueling a vehicle. This is accomplished at most gas stations in the area through the use of the vacuum assist technology. A capture device with openings near the end of the nozzle draws the fumes back into the storage tank and prevents their emission into the atmosphere.

Figure 18

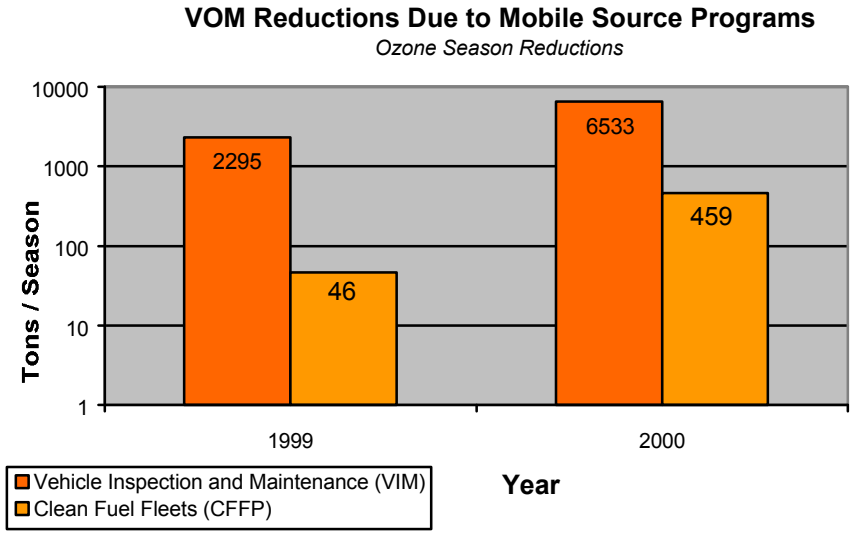


Figure 18 shows an increase in the amount of VOM reductions due to Mobile Source Programs in 2000.

The vehicle miles traveled (VMT) in the ozone nonattainment areas are increasing every year. This is a real concern to environmental protection agencies across the nation. The Clean Air Act requires that transportation activities not cause new air quality violations, add to existing violations, or delay timely attainment of national ambient air quality standards. Therefore, new projects that will affect transportation activities and that have been provided federal funding must conform or be consistent with states' air quality implementation plans (SIPs). Likewise, SIPs that identify the measures that a state will take to meet the Clean Air Act's rate of progress and attainment requirements must contain a motor vehicle emissions budget. This is an estimate of the level of emissions (and increased emissions) from vehicles that can be sustained in a nonattainment area and which meets the air quality goals of the SIP. A motor vehicle emissions budget defines the total allowable emissions of a specific pollutant allocated to highway and transit vehicle use. In order to demonstrate conformity to the motor vehicle emissions budget, emissions from the implementation of a transportation plan or a transportation improvement program must be less than or equal to the budget level.

The Illinois Department of Transportation (IDOT) has general oversight of all transportation matters in Illinois. IDOT's Office of Planning and Programming (IDOT/OPP) provides Illinois' official Vehicle Miles Traveled (VMT) by county, which are estimates based on data counts for categories of roadways and population centers. Specifically, Illinois EPA uses Average Daily VMT data provided by the IDOT/OPP for its on-highway mobile source estimates. These data are derived ultimately from recent continuous and special traffic counts made by IDOT and other organizations, and cover essentially all road traffic in Illinois. IDOT's VMT estimation methodology conforms to Federal Highway Administration standards. Projected estimates of VMT are made by Illinois EPA using growth factors accepted by IDOT. Statewide, VMT is growing at the rate of about 2% per year.

Figure 19

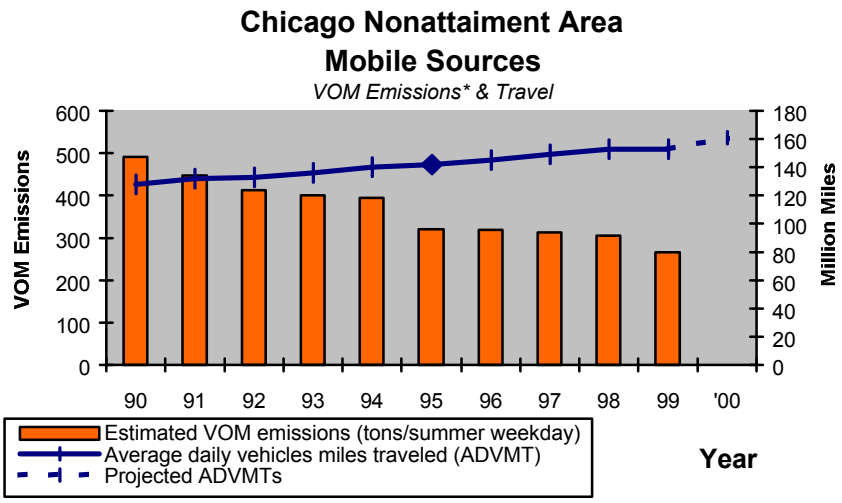
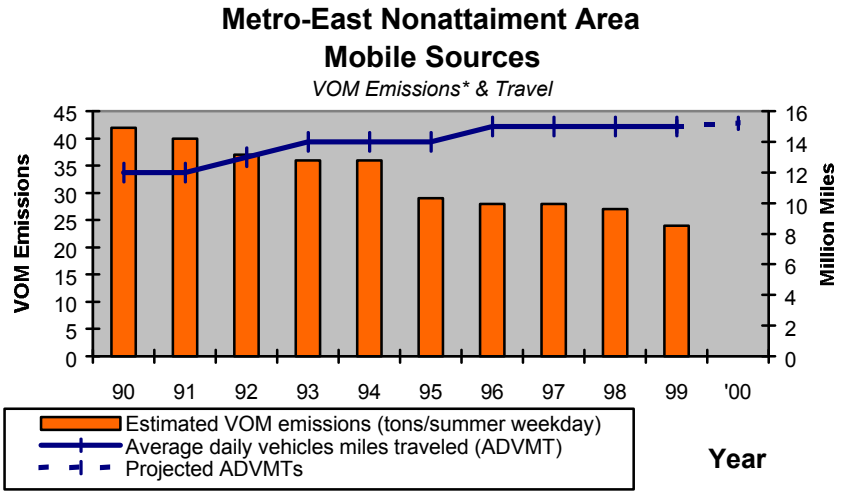
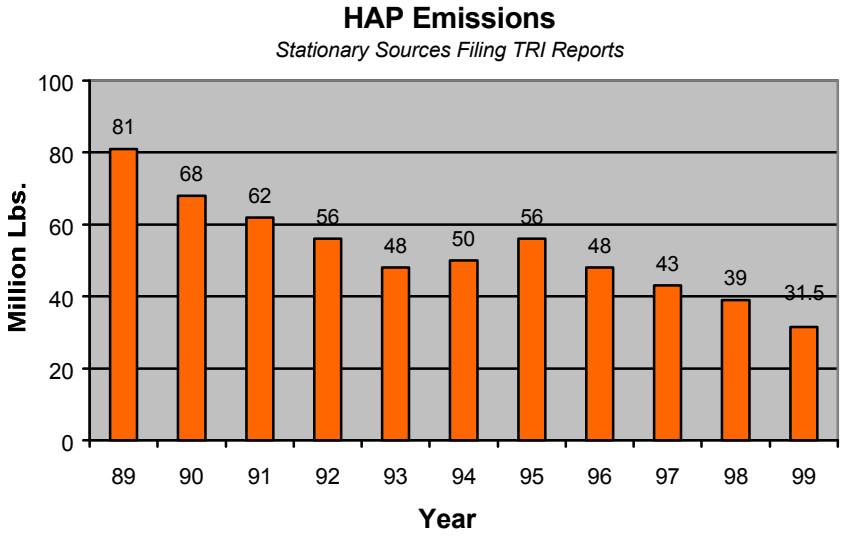


Figure 20



* VOM emissions account for: post 90 1/M; tier 1 new vehicle emission standards from '94; Reformulated gasoline since '95; and enhanced 1/M beginning '99.

Figure 21



Figures 19 and **20** show that while emissions levels from vehicles in the nonattainment areas have declined, they are now leveling off. A concern is that the tremendous progress made through cleaner-emitting vehicles and cleaner fuels will soon be offset by increases in VMTs. In fact, the emissions levels are expected to rise before the next round of vehicle and fuel measures begin to be implemented in 2004. The driving behavior of the motoring public has a large impact on the overall level of mobile source emissions. These individuals are responsible for vehicle use, frequency of trips, and driving habits that impact fuel usage (miles per gallon).

Air Toxics

Hazardous air pollutants (HAPs) may be carcinogenic, highly acidic or alkaline, explosive, or characteristically hazardous for some other reason. The best database currently available to indicate the level of emissions of HAPs into the atmosphere is the Toxic Release Inventory. **Figure 21** shows the levels reported HAP levels (as they relate to VOM) in the State from 1989 through 1999.

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 20005, 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.

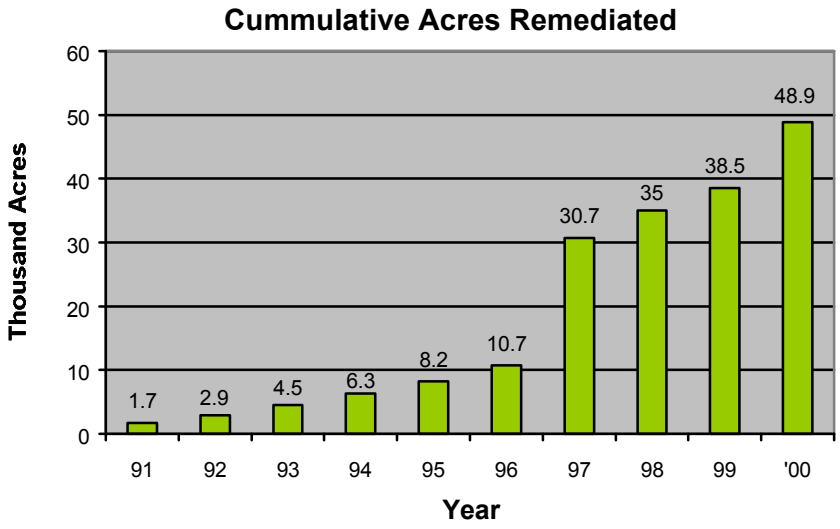
Removal of leaking underground storage tanks.

SITE CONDITIONS

Acres of Land where Human Health Risk is Reduced or Controlled

Remediated sites are contaminated properties at which health risks are successfully reduced or controlled. In 2000, over 10,000 acres were remediated as a result of the Illinois EPA's Clean Land Program. **Figure 22** shows the total cumulative acres remediated since 1981 is almost 49,000 acres or 54% of the environmental objective of 90,000 acres by 2005.

Figure 22



Groundwater

A modern sanitary landfill is designed to completely contain garbage so that contaminants cannot escape to pollute air or water. Safe containment of garbage and its byproducts relies on a landfill liner, which consists of impermeable plastic, compacted clay, or both. The liner is placed in a bed of gravel above 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 meet drinking water standards in the uppermost aquifer. A network of groundwater monitoring wells are installed around the landfill's perimeter to make sure the leachate collection system is working properly.

One of Illinois EPA's primary goals is to protect groundwater resources near landfills and waste handling facilities. Facility's 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.

The ultimate goal is for all sites to be in detection monitoring since these sites are not currently known to have groundwater problems. The Illinois EPA currently monitors 62 operating waste-disposal facilities listed in Appendix B. **Figure 23** indicates that, of these, in 1999, 31 (50%) are in detection monitoring, 17 (27%) are in assessment monitoring, and 14 (23%) are in corrective action.

Figure 23

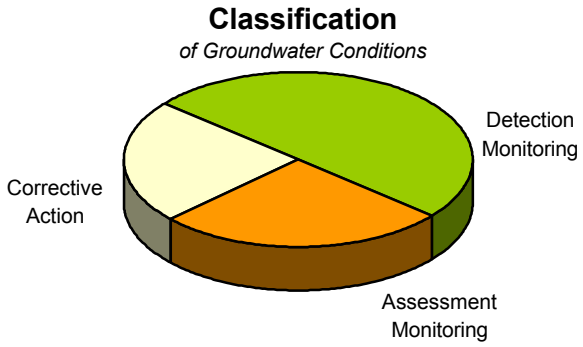
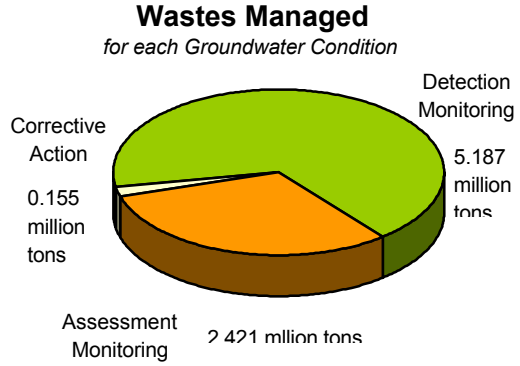


Figure 24 shows the amount of wastes in million tons, that are being managed at the facilities for each groundwater monitoring program. Over 5 million tons (67%) of wastes were at sites that were in detection monitoring.

Figure 24



Wastes are handled at disposal sites in different stages of groundwater monitoring with the greatest amount going to sites in detection monitoring (verified no problem). Older industrial sites - mainly on-site - may be in corrective action to address older problem areas of the facility while waste disposal continues.

Municipal Solid Waste

Picture taken by Lake County Health Department showing tipper in an active working face of a landfill .

Municipal solid waste is the term used to describe the garbage that is discarded by households, stores, offices, factories, restaurants, schools and other institutions. Discarded most often means disposed of in an Illinois EPA permitted landfill. Increasing amounts are being handled through other means of solid waste management: recycling, composting and 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, the result of other business considerations, or a combination, one thing is clear: since 1987, the number of active landfills has fallen from 146 in 1987 to 53 in 1999 as indicated in **Figure 25**.

Figure 25

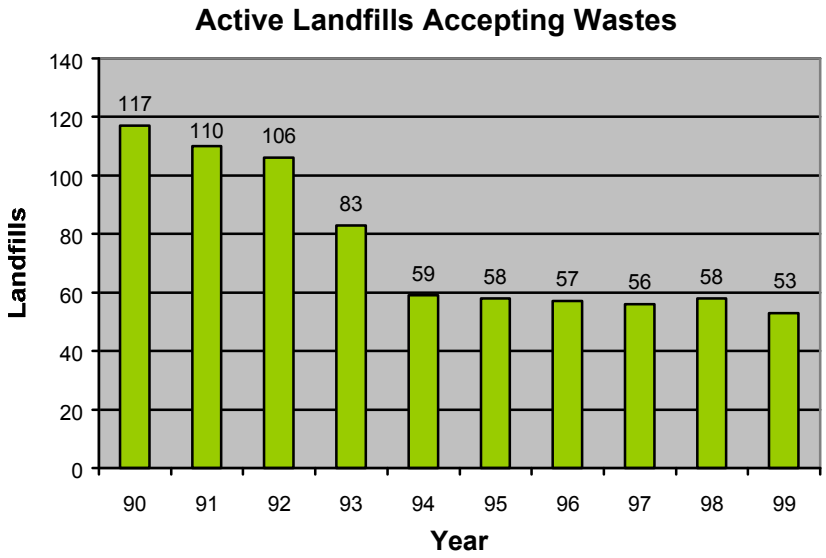
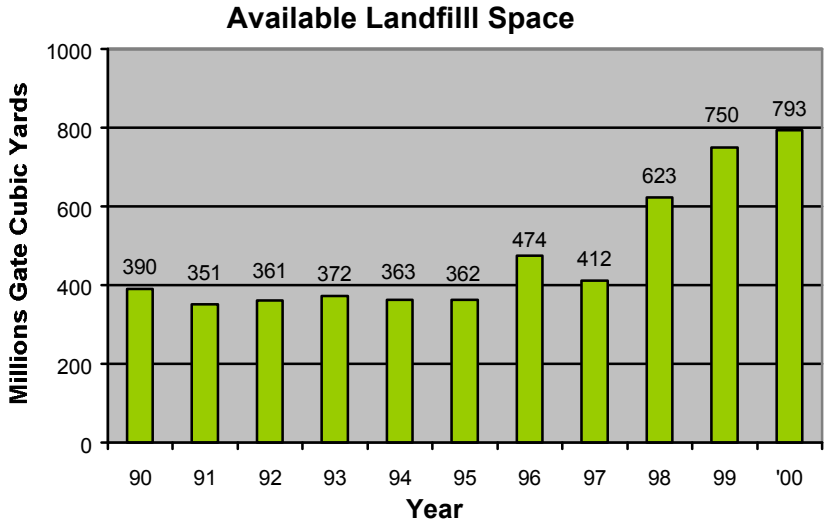


Figure 26 shows that landfill capacity, however, has increased during the same period. In 1999, capacity rose 5.8% from 749.4 million cubic yards to 792.7 million cubic yards due to expansion of existing landfills and new landfill construction.

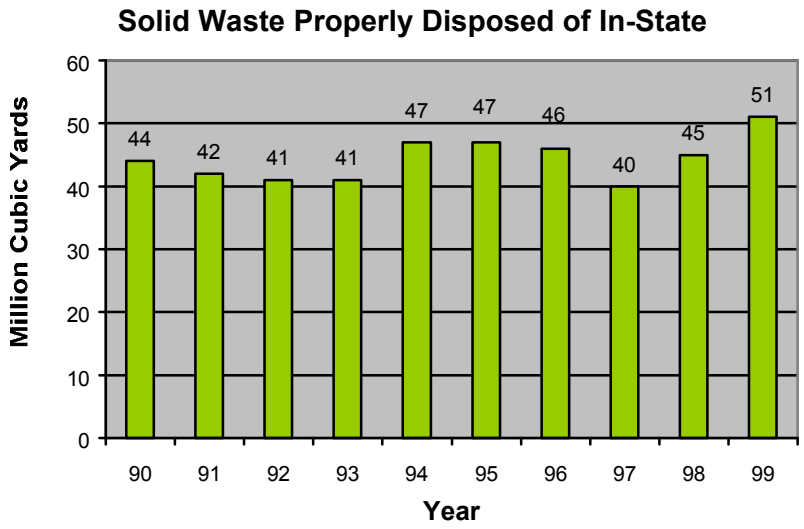
Figure 26



The amount of waste generated in Illinois reported in 1999 was 15,281,938 tons or 6.9 pounds per capita per day (pcd). The volume of waste disposed in Illinois landfills in 1999 was 50.6 million cubic yards. The Illinois EPA began tracking Illinois landfill disposal data in 1987. While the number of active landfills fell sharply when the new more stringent regulations took place in 1994, the average landfill capacity has been growing, while the wastes

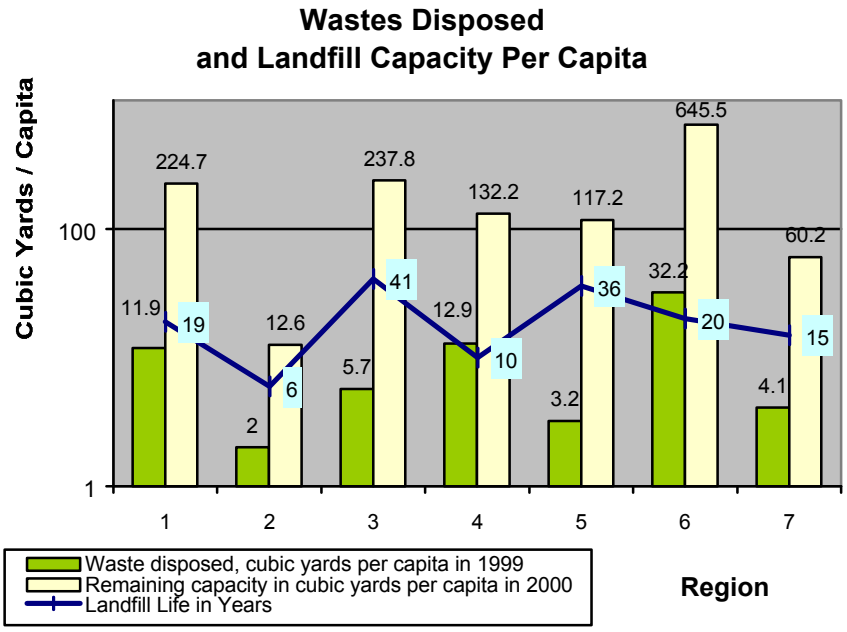
landfilled has remained in a narrow range for the past 10 years. **Figure 27** indicates that in 1999 there is a 12.9 % increase from levels reported in 1998 which may signal a trend that merits careful watching.

Figure 27



Perhaps even more revealing, in **Figure 28,** is the waste and landfill capacity on a per capita and landfill life expectancy basis for each region of the State.

Figure 28



The volume of out-of-state wastes disposed in Illinois landfills has averaged five million cubic yards annually over the past five years. In 1999, out-of-state wastes accounted for 10 percent of the total disposed in Illinois landfills. The five states adjacent to Illinois (Missouri, Iowa, Indiana, Wisconsin, and Kentucky) contributed 99% of the total waste imports. Prior to 1992, the volume of out-of-state wastes disposed in Illinois was not evaluated because landfill and incinerator operators were not then required to submit State of Origin Quarterly Reports revealing the source of the wastes.

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

A transfer station is a waste handling facilities that stores and consolidate wastes. The number of transfer stations are expected to increase as the number of landfills decrease and waste is shipped farther away for disposal. The number of transfer stations in Illinois increased 1.2% (from 77 to 79) and the volume of waste handled by transfer stations decreased 25% (from 6.5 to 4.9 million tons) from 1998. Illinois transfer stations handled nearly 10% of the wastes landfilled in 1999. Chicago metropolitan regional transfer stations handled 98% of the waste transferred. The top five transfer stations within Chicago's city limits each processed over 225,000 tons resulting in a total waste transfer of over one and one-half million tons.

PROGRAM PERFORMANCE

Program Objectives:


Erosion control at landfill.

1. By 2005, reduce the annual amount of hazardous waste managed at commercial treatment/disposal facilities by 10%.
2. By 2005, 60% of operating waste management facilities will be in detection monitoring.
3. By 2025, 95% of waste management sites with groundwater monitoring systems will have no measureable release to groundwater.
4. By 2005, 90% of RCRA-regulated and inspected sites will be in full compliance within 90 days of the inspection date.
5. By 2005, proper closure and post-closure of all active landfills will be ensured.
6. By 2005, 14,821 sites (about 90,000 acres) will be cleaned up.

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 that is 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 rules. If a significant environmental problem is found then enforcement is quickly started. Otherwise, the company is given a short time to attain compliance. This program is referred to as a Compliance Assistance Survey.

In calendar year 2000, 268 Compliance Assistance Surveys were conducted. No regulatory deficiencies were observed during 141 of the 268 surveys. At 55 facilities, compliance was achieved during the Compliance Assistance Survey. In other words, the compliance rate observed through the Compliance Assistance Surveys was 73%.

Pollution Prevention

The field office conducts many inspections and compliance assistance activities at hazardous waste generators annually. During 2000, 33 Pollution Prevention (P2) opportunities were found at 28 sites throughout Illinois. The sites were provided with P2 feedback surveys which summarized the P2 opportunities found by FOS during the inspections.

The Office of Pollution Prevention technical staff accompanied the field office on 25 other site visits to facilities that generate wastes that are persistent, bioaccumulative and toxic (PBTs). An additional 152 P2 opportunities were identified from these joint site visits.

Environmental Education

The State has targeted environmental education as a means for achieving the program objective of waste reduction. In this effort, the Agency is involved in the following:

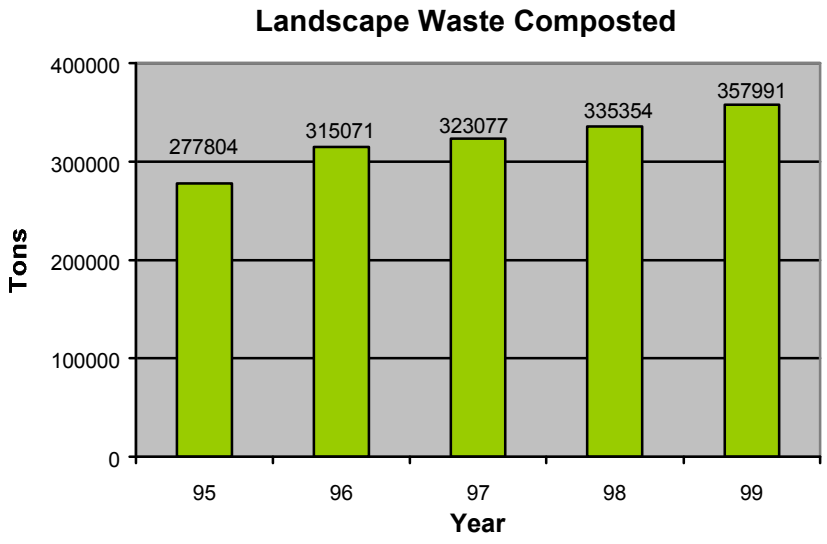
1. Working with the Agency's Environmental Education Coordinator on the creation, development, purchasing, and advertising of environmental education related activities and games (Environmental Jeopardy, Close the Loop, LandWheel, Ecoland, Recycle Relay Dash) as well as various exhibits.
2. Contributing numerous education related articles to various environmental education publications such as IEPA Progress, Environmental Education Association of Illinois Update newsletter, Illinois Counties' Solid Waste Management Associations newsletter, Illinois Recycling Associations Material Matters, and IDNR's Projects Perspective.
3. Assisting with researching, purchasing, distributing, and tracking recycled content premiums for Earth Day type events, as well as for conferences and award presentations.

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 robust 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 (for example, cars) the industrial waste generated also goes up (in the example, waste paint, plastic trim scrap, etc.).

Landscape waste

Figure 29



In 1991, 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 have 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 29** shows 357,991 tons of landscape waste was collected at 48 facilities in 1999. 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 application of landscape waste on farmlands. 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.

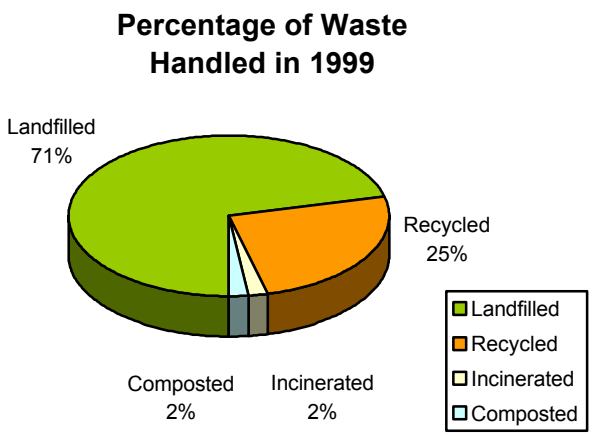
Landscape wastes processed in 1999 represent only about one percent of total wastes landfilled in Illinois that year. While this percentage is small, it is important to note that composting kept more than 357,000 tons of wastes out of landfills and each ton of waste not landfilled is a ton of landfill capacity preserved.

Recycling and Reuse

The Illinois EPA plays a peripheral role in controlling and promoting recycling; other state economic development agencies have been given the direct charge and authority to affect market development and support recycling industries. The Illinois EPA plays a significant supporting role primarily in regulating waste management options other than recycling and collecting fees on non-recycling 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 1999 are recycled as indicated in **Figure 30**, which is a 4% increase from the previous year when that amount was landfilled. Local governments have shown much diligence in meeting and even exceeding local recycling goals.

Figure 30



An additional 377,852 tons of waste was received at the Robbins Resource Recovery Facility in suburban Chicago in 1999, an 18 percent decrease from 1998. This site was permitted to operate in 1997 and for business reasons, the waste for energy facility closed in late 2000.

The Illinois EPA does provide some direct recycling services. These programs - Household Hazardous Waste, Hazardous School Waste, Paint Waste, Used Tires and the Industrial Materials Exchange Service - 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 preferred and economically viable manner.

Household Hazardous Waste Collections

The Illinois EPA's Household Hazardous Waste Collection Program, with the assistance of local governments, diverts municipal waste containing hazardous materials (e.g., waste oils, petroleum distal late-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, and transported to permitted hazardous waste disposal facilities. Since 1989, a total of 230 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 50 communities have pending applications requesting the Illinois EPA to sponsor a one-day collection event in their community. In Spring 2000, the Illinois General Assembly appropriated an additional $1 million for the Household Hazardous Waste program to address the backlog of applications. That year, the Illinois EPA co-sponsored 14 one-day collection events, resulting in the proper disposal of 3,491 fifty-five gallons drums of toxic materials. Over 15,998 households participated in six Illinois counties at an approximate total cost of $1,204,893 (contributing co-sponsor communities contributed a total of $156,183; the Illinois EPA provided $953,558, and $95,152 was obtained in payment resulting from an enforcement action).


Household hazardous waste collection.

The increased number of participants at one-day collection events indicates the need for long-term collection facilities. Illinois EPA 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. Participation at long-term collection facilities has grown annually. In 2000, 1,985 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 2000, 22 Partners for Waste Paint Solutions bulked 408 fifty-five gallon drums of waste paint (22,400 gallons) for fuels blending. These same partners processed 1,320 five-gallon pails (6,600 gallons) for reuse. The increase in the number of drums (338 drums in 1999) and pails (547 pails in 1999) from the previous year could be due in part to the longer established, higher volume partners managing more reusable paint products.

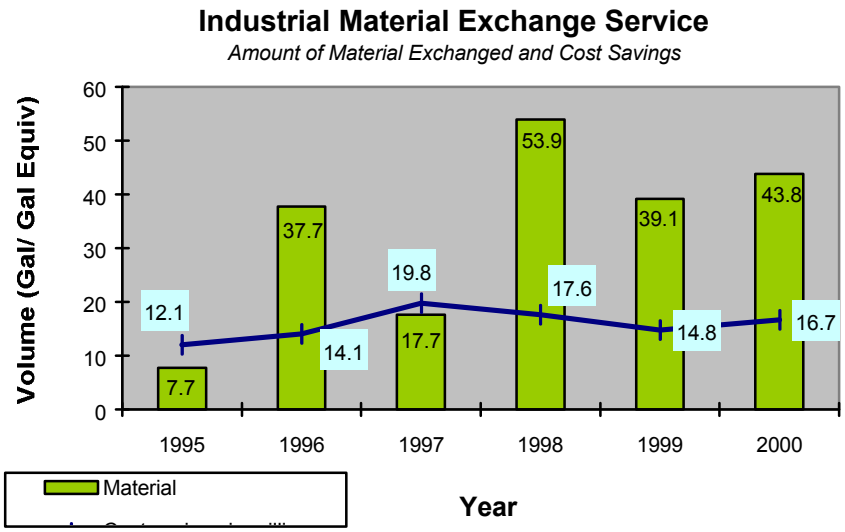
These collection programs provide many benefits beyond the collection and disposal of household hazardous waste. These programs include public education elements that identify: (1) household wastes containing chemicals that make their disposal in municipal waste landfills or incinerators undesirable; (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 associated with one-day household hazardous waste collection events. Since its inception in 1996, 67 high schools have participated. More than 170 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 $62,038. In 2000, 26 drums of hazardous educational waste from ten high schools were collected and disposed at an approximate cost of $15,304.

Materials Transferred

Figure 31



The Illinois EPA's Industrial Material Exchange Service administers an information exchange for hazardous and nonhazardous waste by-products, off-spec items, and overstocked or damanged materials with a potential for industrial reuse. This service publishes a bimonthly directory for 15,000 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 468 million gallon-equivalents of material have been diverted from disposal at an estimated cost savings of $172 million to industry. In 2000, the service diverted 43.8 million gallon-equivalents of potential waste for industrial reuse at an estimated cost savings of approximately $16.7 million to industry, as shown in **Figure 31**.

Used and Waste Tires

On July 1, 1994, whole tires were banned from disposal in landfills due to the problems associated with their disposal (e.g., cannot be compacted, collect methane gas, rise to the top of a landfill, etc.). The same legislation encouraged alternative uses (e.g., supplemental fuel, stamped rubber parts, playground cover, etc.). The Illinois EPA's Used Tire Program ensures that: (1) used and waste tires are properly managed and put to beneficial use or properly disposed; and (2) tire dumps are cleaned up. The Illinois EPA conducts approximately 25 countywide collections and 75 cleanups of used and waste

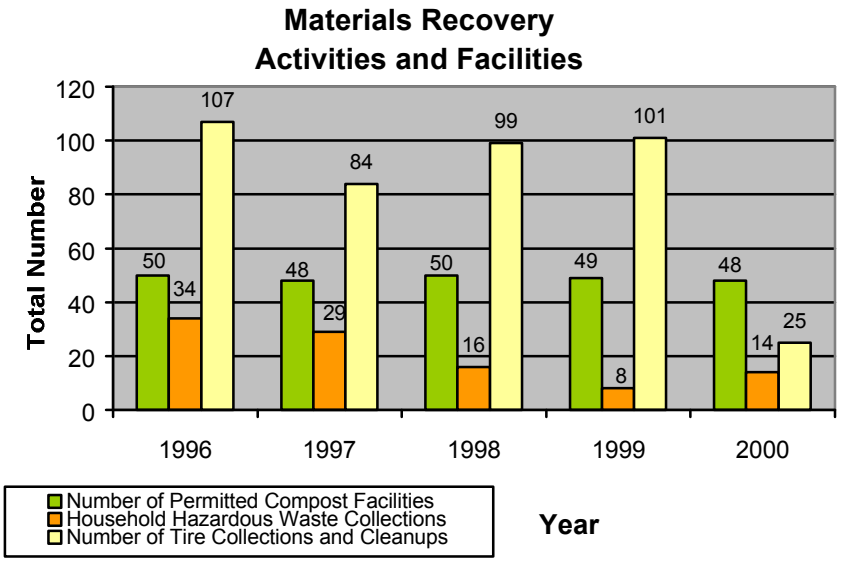
Management of used tires.

tires annually. The Illinois EPA assists local governments and businesses with countywide collections of used and waste tires upon request. These countywide collections are provided by the Illinois EPA free of charge.

Since 1990, approximately 120 million used and waste tires were properly disposed through private markets in Illinois. Over 7.5 million used and waste tires (5% of the total) were collected or cleaned up through this program. The tires are primarily either shredded and processed into (recycled) supplemental fuel, burned at power plants and industrial facilities, or processed into crumb rubber and used in a variety of applications including rubber-modified asphalt, manufacturing of rubber products, athletic turf, etc. A small percentage is used for stamped rubber parts or playground cover. Most of the large tire dumps were cleaned up by 1995. Since then, the annual amount of used and waste tires collected and cleaned up has gradually declined. In 2000, the Illinois EPA cleaned up 3939.58 tons of waste tires at a cost of $561,300.80. That is the equivalent of 315,166 passenger (cars) tires (PTE).

Figure 32 provide the Material Recovery Activities from 1996 to 2000. In 2000 the number of tire collections and cleanups were reduced for the reasons mentioned above.

Figure 32



Proper Management of Waste

The Illinois EPA has inspected facilities and evaluated compliance for nearly two decades. We would expect that today's inspections should find a majority of companies to be in compliance with the hazardous waste rules once inspected.

Compliance Status

In calendar year 2000, the Illinois EPA conducted 375 inspections at permitted solid waste facilities (landfills, transfer stations, etc.). Violations were observed during 50 of the 375 inspections. Therefore, the compliance rate among solid waste facilities is 87%. The Illinois EPA conducted 86 inspections at hazardous waste treatment, storage, and disposal facilities in calendar year 2000. Of these facilities 51 were in compliance at the time of the inspection. Therefore, the compliance rate among hazardous waste facilities is 59%.

During 2000, the Illinois EPA conducted 546 inspections at used tire facilities (280 used tire storage-exempt "retailer" facility inspections; 186 used tire storage facility inspections; and 26 waste tire disposal inspections). The compliance rate among used tire storage-exempt "retailer" facilities was 83% and the compliance rate among used tire storage facilities inspected was 60%. 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 2000 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 33 shows that in 2000, the Illinois EPA received 855 open dumping complaints out of which resulted in the discovery of 812 open dump sites by the Illinois EPA, in partnership with 18-delegated counties. Compliance and enforcement actions resulted in the cleanup of 400 sites (51%) of these sites discovered in 2000. The backlog of open dump sites needing cleanup discovered since 1997 has decreased to 12%.

Figure 33

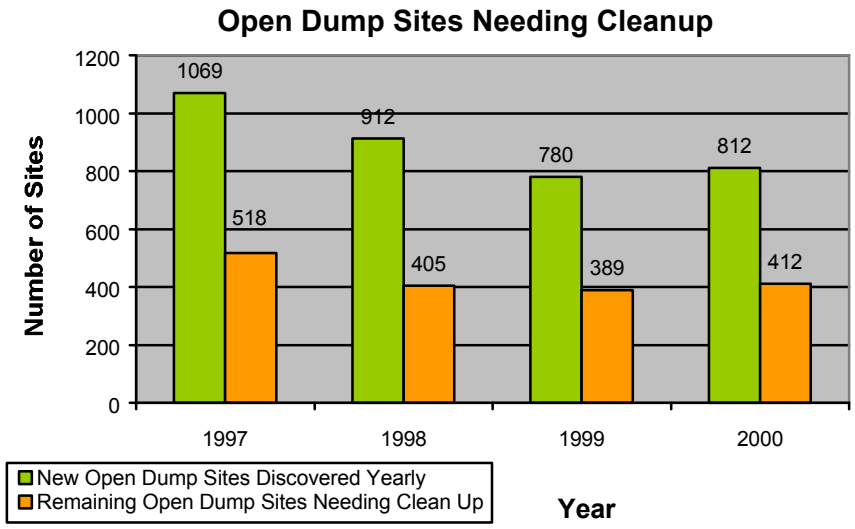
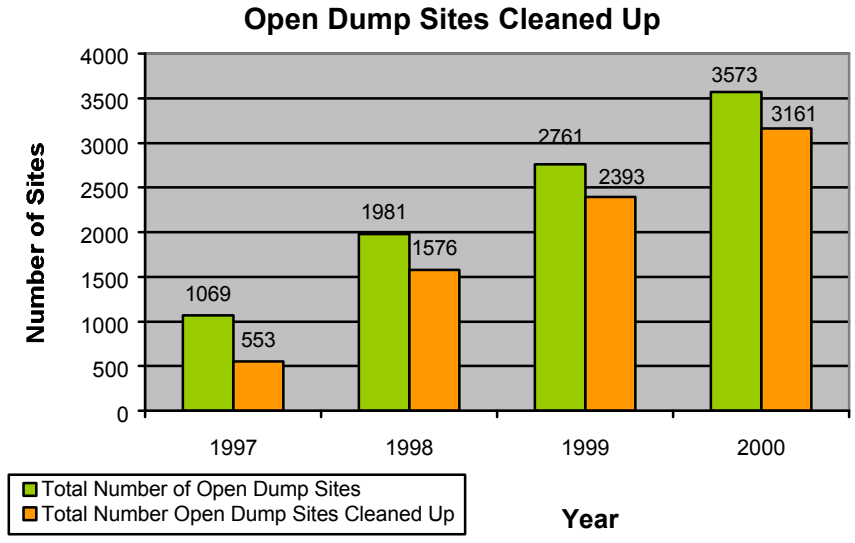


Figure 34



Since 1997, 3573 open dump sites have been discovered from which 3161 (88%) have been cleaned up shown in **Figure 34**. About 50% of the open dumps are cleaned up within 12 months of their discovery. Approximately 290,300 cubic yards of waste were removed and properly disposed from these open dumps during 1997-1999 (2000 data not currently available).

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). The concern regarding these landfills is that the actual closure of the facility has not occurred and that the landfill could be creating an environmental danger.

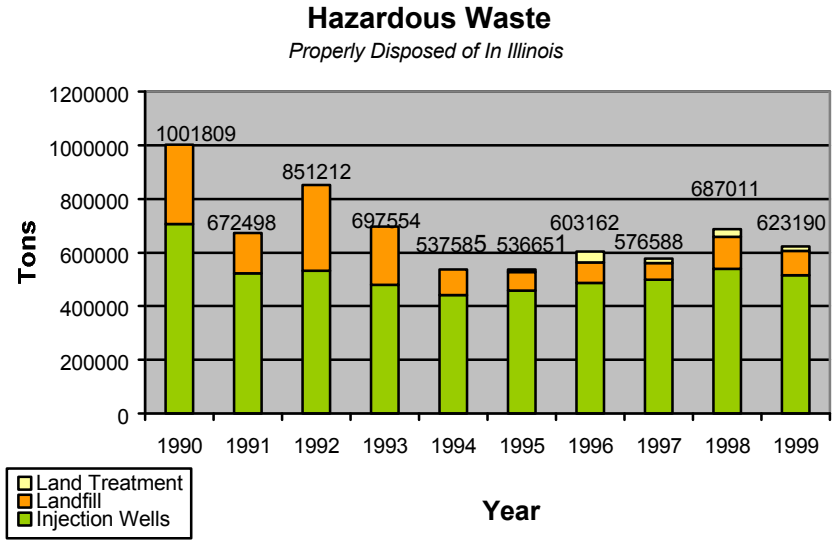
The Illinois EPA originally identified 67 non-hazardous waste landfills and 1 hazardous waste landfill that apparently fell into this category. Of the 67 non-hazardous waste landfills identified, 14 facilities were found to have been certified closed, certified through post-closure, or wrongly identified as part of the list. This leaves 54 non-hazardous waste landfills that no longer accept waste and must be properly closed. One hazardous waste landfill identified as no longer accepting waste is in the process of closing, and five landfills now in post-closure.

Hazardous Waste

The Illinois EPA ensures that facilities engaging in hazardous waste management processes (e. g., disposal, treatment, and storage) meet safe waste management standards. Over 1.1 million tons of hazardous waste was managed at Illinois hazardous waste management facilities in 1999.

Appendix B shows that approximately 621,515 tons of hazardous waste, which were generated in the United States, 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 35



Hazardous waste disposal in Illinois has decreased 19 percent since 1992 partially as a result of land disposal restrictions (i.e., prohibition of land disposal of hazardous waste that has not been adequately treated), and increased pollution prevention and waste minimization practices. **Figure 35** shows that in 1999, hazardous waste was disposed of in Illinois at two private underground injection wells (516,375 tons), one commercial landfill (88,546 tons), and a land treatment unit (18,269 tons).

Contaminated Acres Evaluated and Ready for Clean Up

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 (LUST) sites, (2) Superfund sites, (3) state response action sites, (4) Site Remediation Program sites, (5) federal facility sites, (6) Resource Conservation and Recovery Act (RCRA) 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 2000, over 1,200 LUST incidents were reported in Illinois (30% decrease from 1999).

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. Since 1980, 44 sites in Illinois have been listed on the NPL for removal actions (i.e. short term solutions) and remedial actions (i.e., permanent remedies). Since 1982, both removal and remedial actions have been initiated at 33 (or 73 %) 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 the Governor's Illinois FIRST legislation. In 2000, Illinois EPA conducted remediation activities at over 50 state response sites in 42 communities.

MTBE

Methyl tertiary butyl ether (MTBE) is a volatile, organic chemical that has been used in the United States since 1979 as an octane enhancing replacement for lead in gasoline. MTBE is capable of traveling through soil rapidly, is more soluble in water than other gasoline constituents, and is more resistant to biodegradation. As a result, MTBE often travels farther than other gasoline constituents and is more likely to impact public and private drinking water wells.

The major source of groundwater contamination appears to be petroleum releases from leaking underground storage tanks. Other sources include small and large gasoline spills and recreational watercrafts. In Illinois, MTBE has been detected at 26 (or 2%) of 1,200 community water supplies. Four of these supplies have discontinued the use of their wells due to MTBE contamination.

The Illinois General Assembly recognized that MTBE poses a substantial environmental threat while ethanol is an acceptable octane enhancer. Consequently, the use, manufacture, or sale of MTBE as a fuel additive or the transport of fuel containing MTBE is banned by the year 2004.

Site Remediation Program (SRP) sites are remediated voluntarily under Illinois EPA's supervision and approval. Since 1989, the Illinois EPA has enrolled 1,427 sites into the SRP, with 249 (or 17%) of these sites enrolling in 2000 (a 6% increase over last year). The Illinois EPA provided 27,000 hours of services at 644 SRP projects in 2000.

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 45 sites in Illinois.

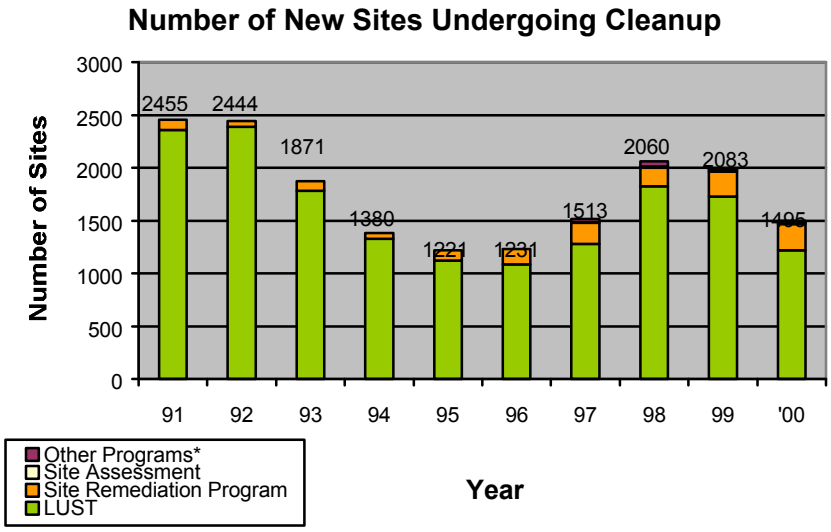
RCRA sites are those facilities permitted to treat, store, or dispose hazardous waste. Past and present activities at these facilities have sometimes resulted in releases of hazardous substances into the environment. Owners and operators are responsible for the investigation and remediation of contamination from their facilities (i.e., perform corrective action). In 2000, closure was completed at six sites with 41 RCRA sites undergoing corrective action in Illinois.

Site assessment sites are uncontrolled or unregulated facilities that undergo evaluation for remediation under Superfund or for brownfields redevelopment. In 2000, Illinois EPA evaluated 13 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 four brownfields sites.

Sites Where Health Risk is Identified

Figure 36 shows the combined number of new LUST sites, Superfund sites, response action sites, Site Remediation Program sites, federal facility sites, RCRA sites, and site assessment sites undergoing cleanup in 2000 was 1,495 (a 25% decrease from 1999).

Figure 36

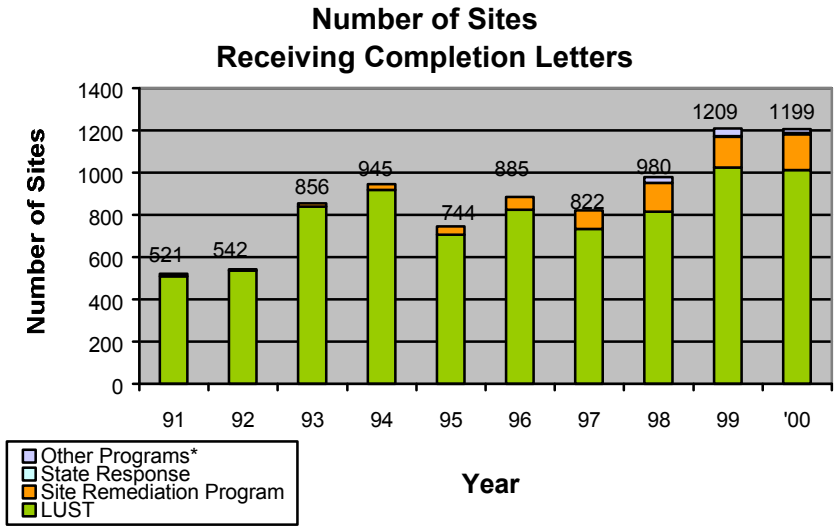


* Other programs include RCRA, Federal, State and Superfund facilities

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 1,199 completion letters in 2000 shown in **Figure 37**.

Figure 37



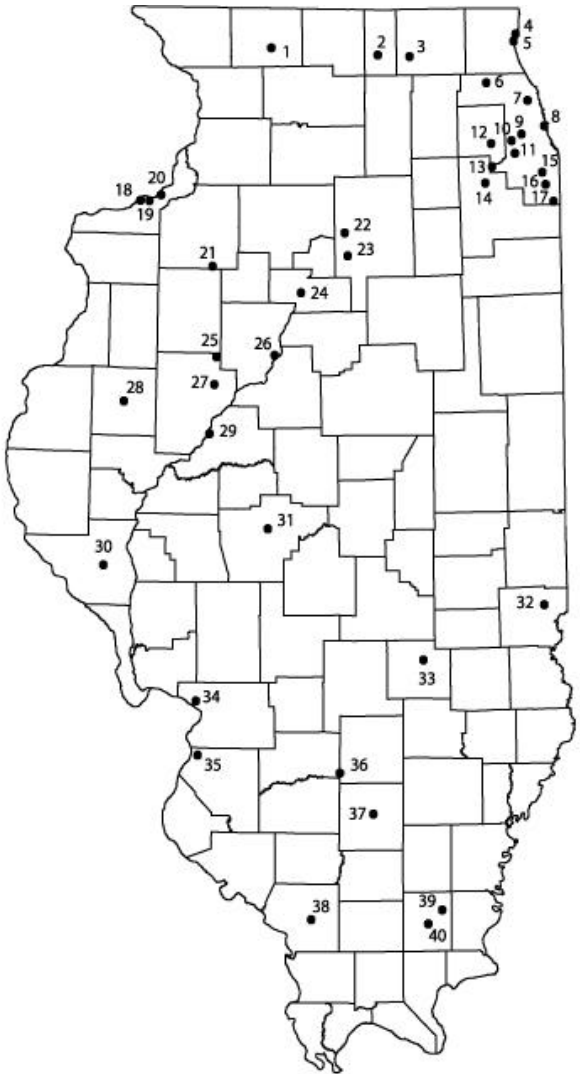
* Other programs include RCRA, Federal, State and Superfund facilities

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 sites investigations and remediation. Many of the financial tools are designed for use by municipalities or private parties that did not cause the contamination. Since 1998, the Illinois EPA has offered technical and financial help to 23 communities to investigate brownfields shown in **Figure 38** on the next page.

Figure 38



1. Freeport
2. Belvidere
3. Marengo
4. Waukegan
5. North Chicago
6. Platine
7. Skokie
8. Chicago
9. Berwyn
10. LaGrange
11. Justice
12. Downers Grove
13. Lemont
14. Lockport
15. Riverdale
16. Thornton
17. Ford Heights
18. Moline
19. East Moline
20. Rock Island
21. Galva
22. LaSalle
23. Tonica
24. Lacon
25. Farmington
26. Peoria
27. Canton
28. Macomb
29. Havana
30. Pittsfield
31. Springfield
32. Marshall
33. Effingham
34. Alton
35. East St. Louis
36. Mt. Vernon
37. Centralia
38. Murphysboro
39. Eldorado
40. Harrisburg

Brownfields 2001 Conference

The 6th National Brownfields Conference will be held on September 24–26, 2001 at Chicago's McCormick Place Convention Center. Brownfields are abandoned or underused industrial and commercial properties that have actual or perceived contamination and an active potential for redevelopment. This conference is expected to attract over 3,000 participants from across the United States to share information on (1) getting started in redeveloping Brownfields; (2) bringing the right parties to the table for the redevelopment process; (3) discovering approaches and solutions to brownfields challenges; and (4) learning how brownfields have been prosperously reused. For more information on the Brownfields 2001 Conference, please visit www.brownfields2001.org.

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 Supply 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 stream; the watershed for a major river may encompass a number of smaller watersheds that ultimately combine into a common delivery point. The Agency has endeavored to identify five environmental objectives which together provide a general overview of the quality of watershed conditions within Illinois. The watershed concept in this report begins with surface water and proceeds to groundwater.


Wildlife enjoying Illinois waterways.

Environmental Objectives:

1. Waterways with good water quality conditions will increase 5% from 2000 levels by the year 2005.
2. The percentage of lakes in good or fair condition will remain constant from 2000 to the year 2005.
3. The percentage of open Lake Michigan shoreline miles in good condition will remain constant from 2000 to the year 2005.
4. The percentage of the population served by community water supplies (CWS) receiving drinking water with no short-term (acute) or long-term (chronic) adverse health effects will increase to over 95% by the year 2005 (an increase of 5%).
5. A declining trend of groundwater contaminants in CWS wells will occur through the year 2005.

Waterways

Waterways are an important gauge that indicate overall environmental quality. Illinois' water resources can be impacted by a variety of sources including agriculture, industry, urban development, and mining. These activities can have an effect on the degree to which a given waterbody can be used for human and aquatic life uses. Waters all over the state have been classified as either good, fair, or poor, depending upon whether they can attain their designated uses. The quality of Illinois' rivers and streams has dramatically improved over the last twenty-five years. The number of river miles in good condition has increased from 34.7% in 1972 to

62.5% in 2000 as shown in **Figure 39**. This shows attainment of the goal of 59% of river miles in good condition. Illinois EPA has also evaluated individual watersheds within the state and detailed the water quality conditions as well as the various impacts to each watershed. The following **Figure 40** highlights the water quality within the fourteen major river basins in the State.

Figure 39

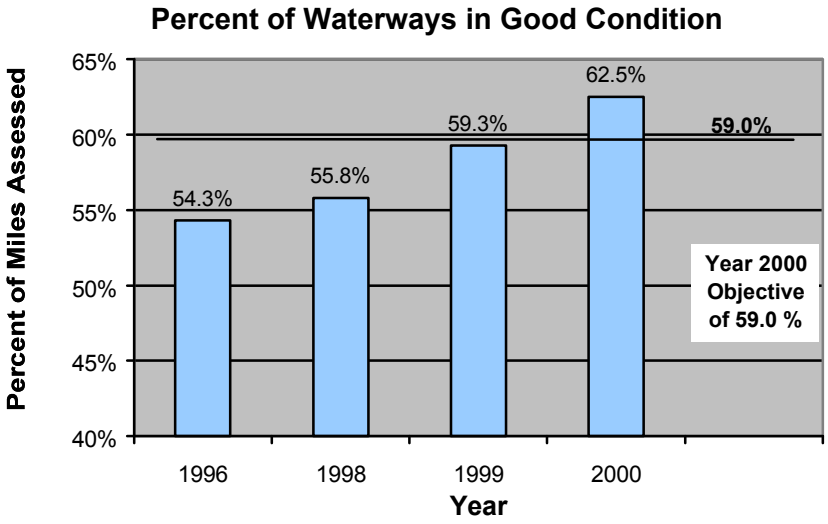


Figure 40

CONDITION OF ILLINOIS RIVERS AND STREAMS

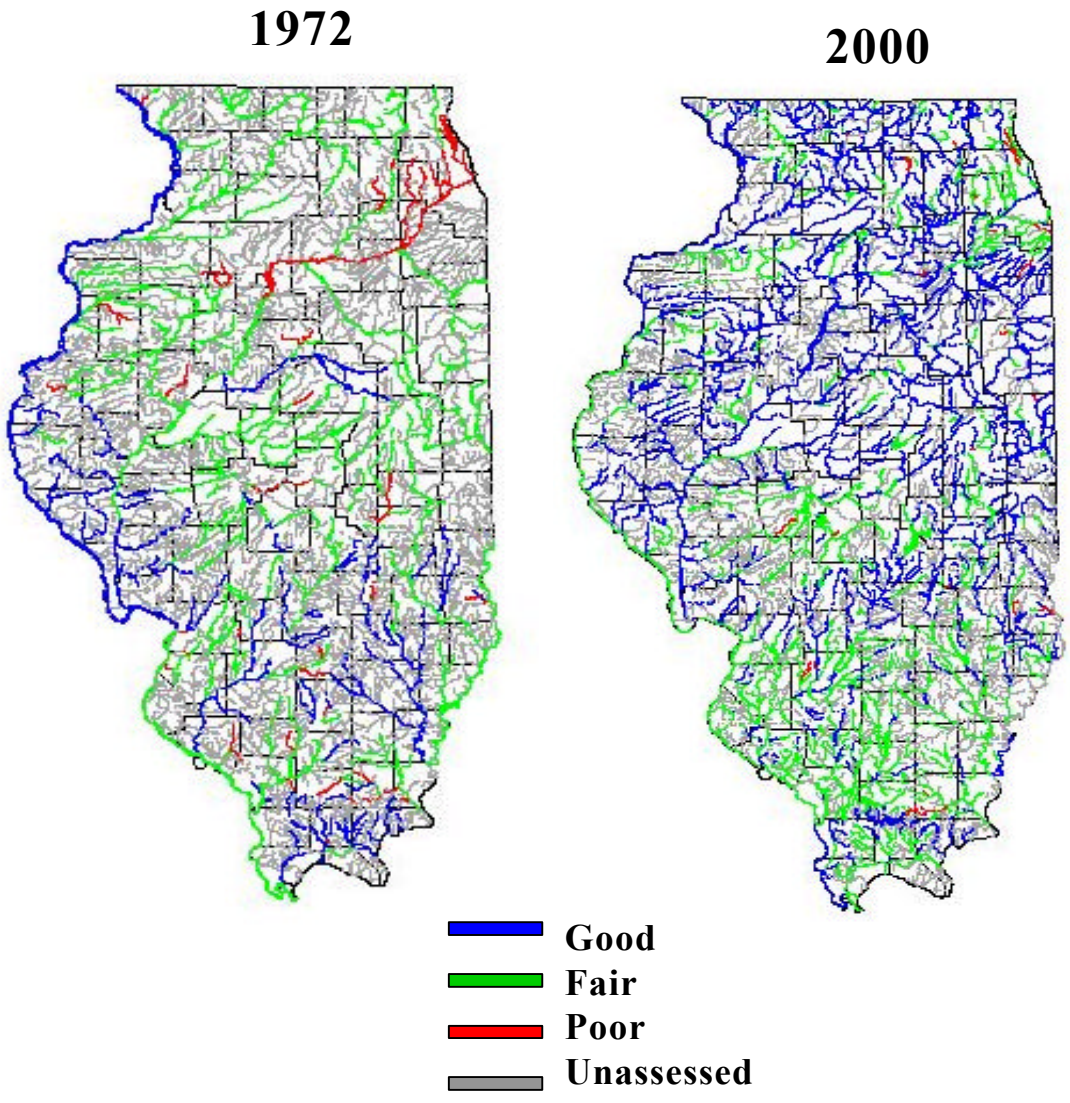
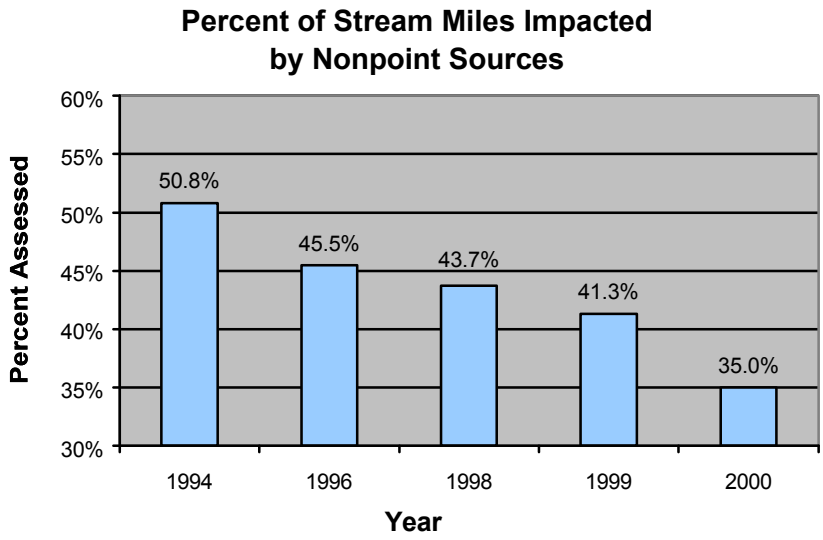


Figure 41

Much of the improvement in watershed conditions over the next five years is expected to come from reducing nonpoint source impacts. The percentage of stream miles needing additional nonpoint source corrective actions has declined 15.8% between 1994 and 2000 shown in **Figure 41**.



Illinois River

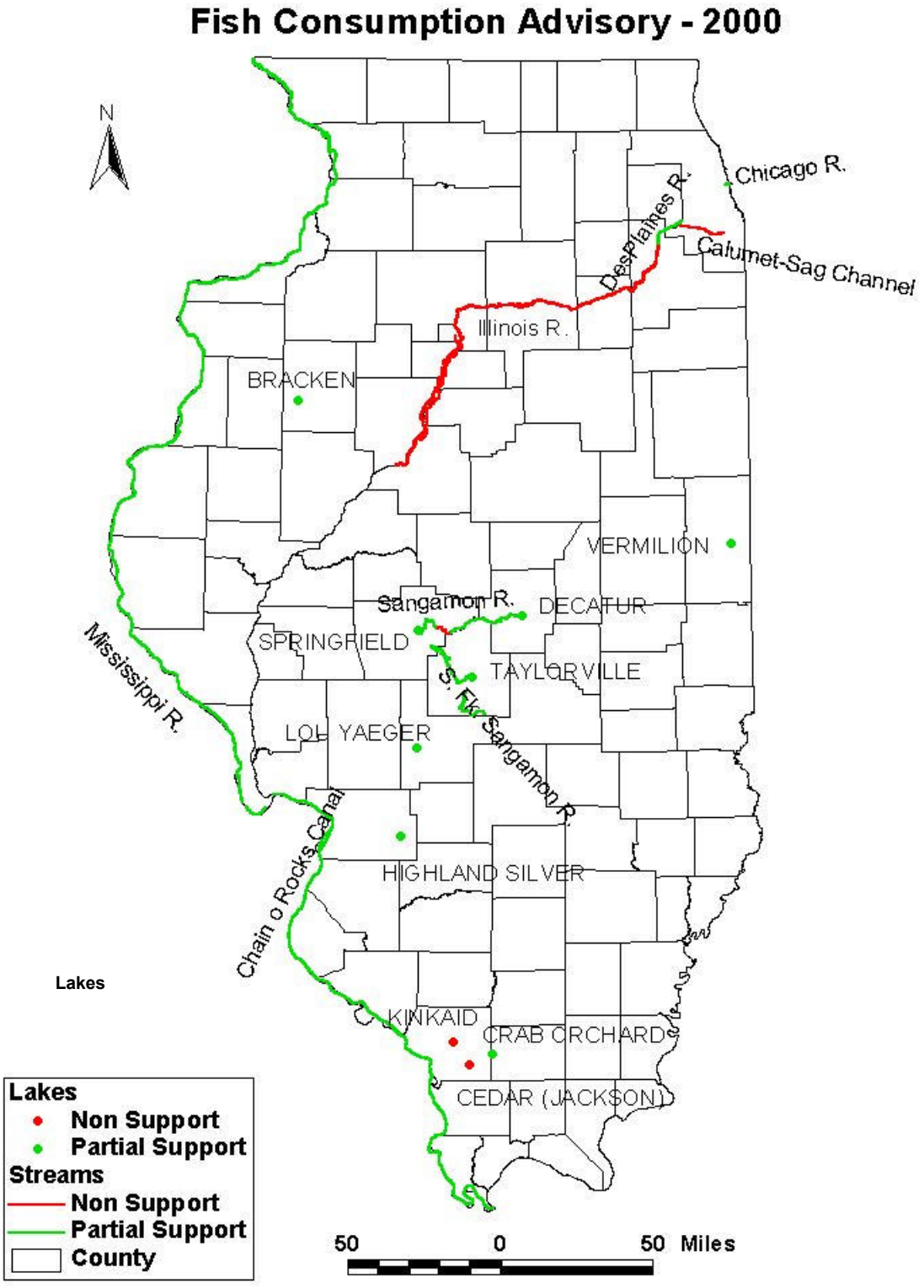
One of the most dramatic improvements in river quality has taken place on the Illinois River. Twenty-five years ago, commercial fisheries were severely threatened by several different pollution sources. Now, more species and numbers of sport fish can be found as well as the "macroinvertebrates" or bugs that the fish eat. Indicative of these improvements was the Professional Bass Masters Tournament held in Peoria during the summer of 1995, an event that would never have been considered in years past. In contrast, however, are continuing concerns over excessive sedimentation of parts of the Illinois River. These concerns led to the development of the Integrated Management Plan for the Illinois River, a major initiative involving state government and leaders in agriculture, business and conservation. As a designation National Priority Area (NPA) by the U. S. Department of Agriculture, the Illinois River Integrated Management Plan, Conservation 2000 and other state programs are working in concert with the USDA Natural Resource Conservation Service programs, such as the Conservation Reserve Enhancement Program (CREP), the Wetlands Reserve Program (WRP), and the Environmental Quality Incentives Program (EQIP), to assist landowners in implementing conservation practices on environmentally sensitive areas.

Fish Contamination

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 pesticides and other compounds such as chlordane, and PCBs, as well as 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. No advisories were issued for 82% of the lake acres and 73% of the stream miles where fish have been tested. Advisory information for specific water bodies is available in the current Illinois Fishing Information Booklet published by the Illinois Department of Natural Resources.

Figure 42



Program Changes

The Illinois Fish Contaminant Monitoring Program (FCMP) operated with limited data in 1993 and 1996, and with no data except for Lake Michigan in 1994-1995, due to budgetary constraints. An increase in funding in Fiscal year 1998 allowed for resumption of a more complete fish monitoring program, and this stable funding source has allowed the FCMP to continue to build the type of data base necessary to adequately assess contaminant levels in sport fish across the State. In order to do this more effectively, there has been a shift from the previous practice of collecting a number of fish from a network of permanent monitoring stations and a lesser number of fish from "new" stations, to an approach that relies on collecting more samples from "new" stations and less from the permanent network.

With the consumption advisory for Lake Michigan for 1997, the FCMP began the process of converting the advisory program from use of U. S. Food and Drug Administration Action Levels (which apply to commercially-harvested fish in interstate commerce) to Health Protection Values developed in accord with the Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory (which are developed specifically for sport-caught fish) as criteria values for issuing fish consumption advisories. The Health Protection Values reflect more recent health effects data and are generally more stringent than the Action Levels. This process continued in 1999, when the advisories for most fish from in-state waters (other than those based on mercury) were changed to be consistent with the Great Lakes Protocol. It will be completed in the future when a Health Protection Value for mercury is developed by the Great Lakes Fish Advisory Task Force.

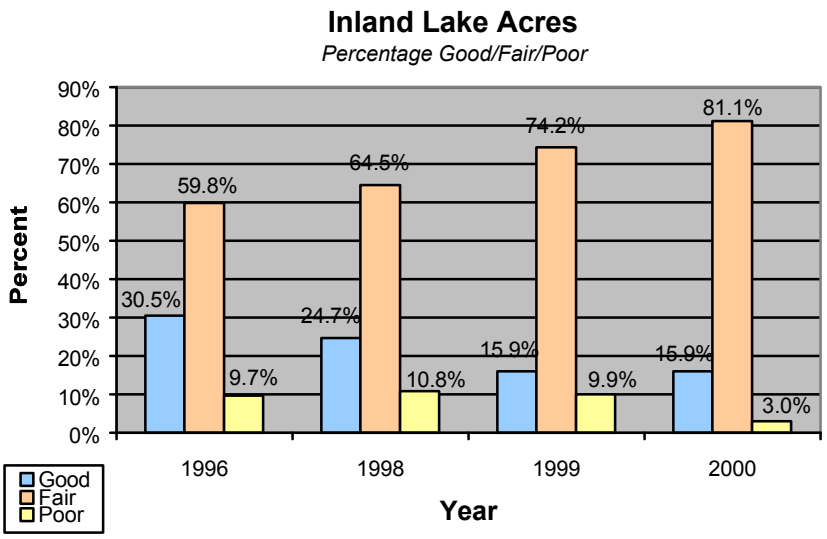
As a result of these important changes, the number of watersheds in which fish consumption advisories are issued may increase over the next few years. It is important to note that these anticipated new or updated advisories will not always signal newly-discovered contamination or increased levels of contamination. In many cases, this will be a result of FCMP changes rather than worsening levels of contamination in fish.

Lake Conditions

Another integral part of watershed conditions is the quality of inland lakes. Inland lakes are a vital component of the economic and social well-being of Illinois. Some 90 million visitor days of general lake recreation generates an estimated $1.78 billion annually to the state's economy. Similar to the way rivers and streams have been evaluated, Illinois lakes have been judged to be in good, fair, or poor condition based upon whether they can attain their designated uses (i.e. aquatic life, public water supply).

Lake sediment sampling

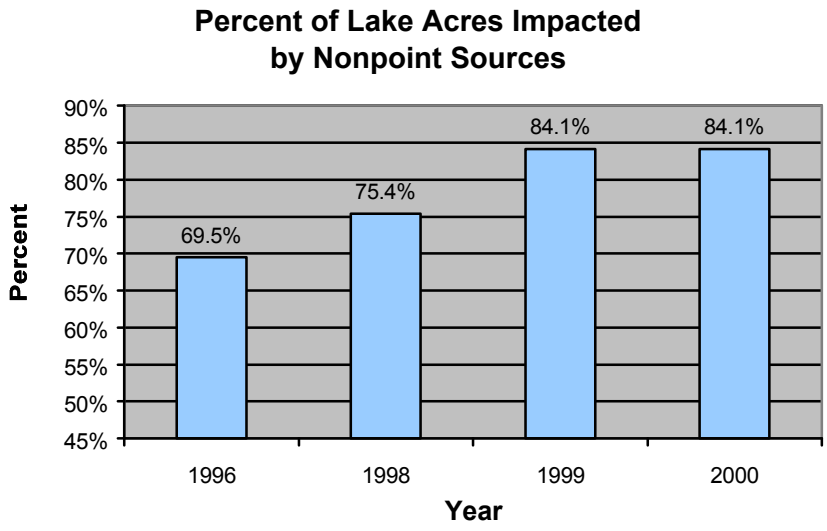
Figure 43



As indicated in **Figure 43**, 97.0% of Illinois lakes were rated good or fair in 2000, compared to 72.2% in 1972.

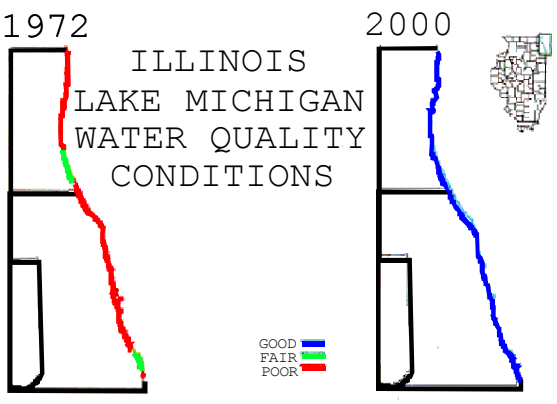
Figure 44 shows the percentage of lake acres that have use impairments due to nonpoint source impacts. At first glance, this figure shows an increasing, then leveling trend of nonpoint impacts on lakes. In reality, this apparent trend is primarily due to (1) yearly variability in the number and type of lakes assessed, and more importantly (2) a change in assessment methodology and reporting. In past reporting cycles, 24 large reservoirs were segmented into 53 waterbodies. In many cases when a large reservoir was segmented, the segment closest to the dam was categorized as "good," with the other segments (typically two) categorized as "fair". When Agency methodologies changed to delete this segmentation/reporting process, an overall rating of "fair" was typically assigned, thereby losing a large number of previously reported "good" acres. This same change in methodology explains the apparent decrease, then leveling of, the percentage of "good" lake acres from 1996 as found in the previous figure**.**

Figure 44



The quality of Lake Michigan is assessed separately from Illinois' inland lakes. The Great Lake forms the Northeastern portion of Illinois' border and serves as a center for recreation for many Illinois residents. As indicated, the quality of Lake Michigan has improved dramatically over the past twenty years. All 63 of the Lake Michigan shoreline miles within Illinois are considered to be in good condition as shown in **Figure 45**.

Figure 45



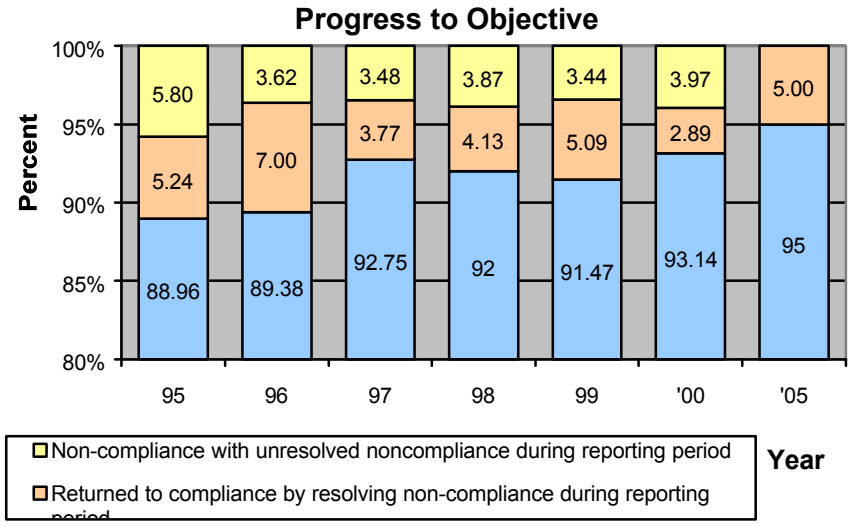
Conservation 2000

Since 1995, the Agency has received state funding through the governor's "Conservation 2000" initiative to implement new and expanded inland lake management programs. In August of 1999, Governor Ryan, due to the overwhelming popularity of Conservation 2000, signed House Bill 1747 into legislation, thereby extending the Conservation 2000 program until the year 2009. Through State FY2000, a total of 28 lake study and restoration projects have since been funded through the *Illinois Clean Lakes Program*. The *Priority Lake and Watershed Implementation Program* has funded shoreline erosion control and aeration activities at 17 high-priority lakes. Some 486 schools and other not-for-profit organizations have received small *Lake Education Assistance Program* awards to further lake education efforts around the state. In addition, ambient and volunteer lake monitoring programs have been significantly expanded; four new staff have been hired to offer direct technical assistance to lake owners; hands-on lake workshops are offered on the shores of five to six lakes annually; and new lake education programs (i.e., *Lake Notes* fact sheets development, Project Wet funding, specialty workshops) are now offered to the public. Since losing federal support in 1995 through USEPA's Federal Clean Lakes Program, Illinois is indeed fortunate to have one of only a handful of state-supported, comprehensive lake management programs in the entire country.

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 2000, 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 93.14%. Progress toward the Year 2005 objective is illustrated as Percent Population Served by Community Water Supplies Compliant with Health Requirements as provided in **Figure 46.** The 2000 compliance percentage is over a four percentage improvement in compliance from calendar year 1995; furthermore, it represents over one and one-half percent improvement in compliance when compared to calendar year 1999. The major contributing factors for this past year's improvement was a reduction in short-term nitrate excursions as well as reduction in bacteriologic violations. 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 46



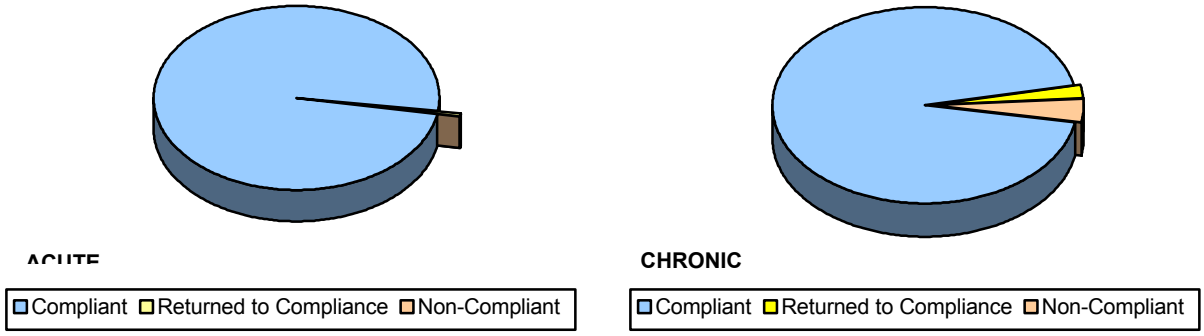
The number of water supplies in full compliance with all health requirements during 2000 was 1,601, or 89%, of the community water supplies in Illinois.

Figure 47 shows that over 99% of the population served by Illinois community water supplies received drinking water in compliance with acute (short-term) health requirements, and over 93% 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 until the levels are consistently well below the maximum contaminant level.

Figure 47

Acute and Chronic Requirements (2000 data)

Percent of Population Served Compliant with Health Records



Lead and Copper Rule Compliance

The lead action level (15 parts per billion of lead) when exceeded in more than ten 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 insure that lead or copper is controlled in the drinking water.

In 2000, 1,753 water supplies, or approximately 97% of community water supplies were below the lead action level. These water supplies serve 99% of the population.

This was the third year supplies that installed treatment were required to meet water quality parameter (WQP) ranges as part of a treatment technique described above. The WQPs are measured at daily or bi-weekly frequencies. Ranges were effective for 121 supplies in 2000.
Generally, non-compliance is for a short period of time because the treatment is quickly adjusted to required ranges. In 2000, twenty-one supplies with a total population of 160,606 were outside a WQP range at some point during the year.

Illinois Groundwater Conditions

The state-wide detection rate for VOCs in CWS wells does not appear to have increased since 1988. Nearly ten percent of the CWS wells in the state are predicted to have water quality which is either susceptible, or of poor quality, as a result of impacts by one of the three contaminant groups assessed (volatile organic/aromatic compounds, nitrate, immunoassay alachlor and triazine). Water-quality degradation or contamination results from point and nonpoint sources throughout the state. In many industrialized areas, including the metropolitan areas of Chicago, Rockford, and St. Louis, groundwater has been degraded by improperly contained or disposed of chemicals. In many agricultural areas, the quality of groundwater in shallow aquifers has been degraded by the routine application of agricultural chemicals.


Groundwater feeding into surface water.

As a cost effective means of continuing to assess trends in groundwater quality, the Illinois EPA operates an Ambient Network of Community Water Supply Wells (CWS Network) consisting of 362 fixed locations. The CWS Network is designed to:

- Provide an overview of the groundwater conditions in the CWS Wells in Illinois;
- Provide an overview of the groundwater conditions in the major aquifers in Illinois;
- Establish baselines of water quality within the major aquifers in Illinois;
- Identify trends in groundwater quality in the major aquifers in Illinois; and
- Evaluate the long term effectiveness of Clean and Safe Drinking Water Act program activities in protecting groundwater in Illinois.

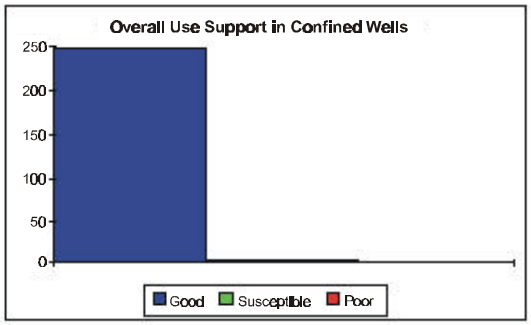
Figure 48, on the next page, illustrates the community water supply wells in Illinois, the subset of these wells which are used to statistically represent trends in the principal aquifers in Illinois (the CWS Network), and the resultant trends in the principal aquifers (the bar charts that accompany the maps) as statistically projected by CWS Network. For a more detailed description of the CWS Network monitoring procedures, locations, stratification criteria, and principal aquifer locations refer to the Illinois State Water Quality Report (1999, Clean Water Act, Section 305(b) Report).

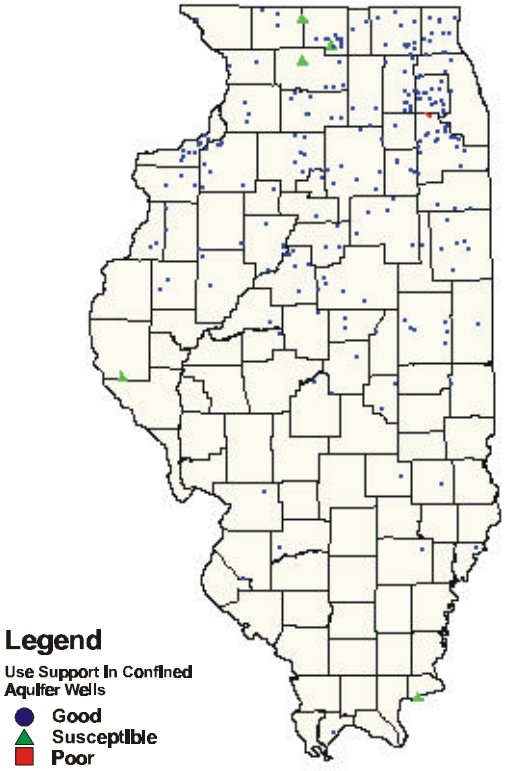
As illustrated, groundwater quality in three of the four major aquifer groups in Illinois are experiencing steady-state, or slightly decreasing, levels of contaminant detections. The exception to this analysis is the shallow bedrock aquifers, which show a slight upward trend in the number of wells that have an increase of the levels of contamination.

Figure 48

Overall Use Support in Confined Aquifer Wells

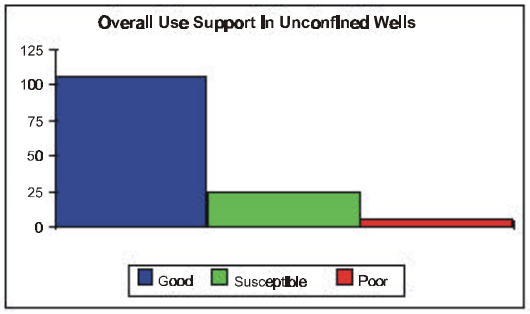
Good	Susceptible	Poor
242	5	1

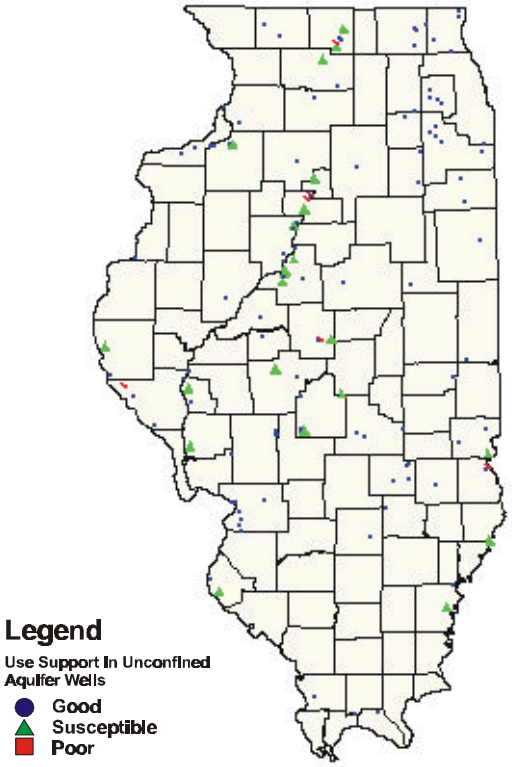




Overall Use Support in Unconfined Aquifer Wells

Good	Susceptible	Poor
106	24	6





Source Information
County boundaries obtained from the ISGS.
Use support information and map compiled by Illinois EPA Groundwater Section

PROGRAM PERFORMANCE

Program Objectives:

1. The total pollutant load discharged in the year 2005 will be 99.5% 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.


Shoreline of an Illinois river.

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.


Stormwater management system..

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.

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 2,264 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 49 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 2000.

The percent compliant load during this period increased from 98.5% to 99.4%. In other words, compliance improvement was noted and only an additional 0.1% will be needed to achieve the program objective of 99.5% for the year 2005.

The compliant load during 2000 was greater than 99.5% for 1,493 facilities, greater than 90% but less than 99.5% for 294 facilities, and less than 90% compliant for 477 facilities as shown in **Figure 50**

Figure 49

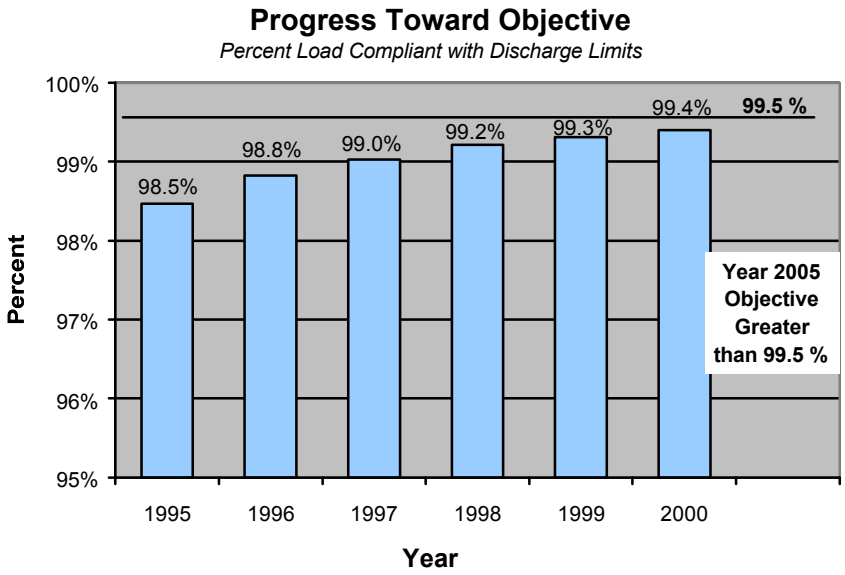
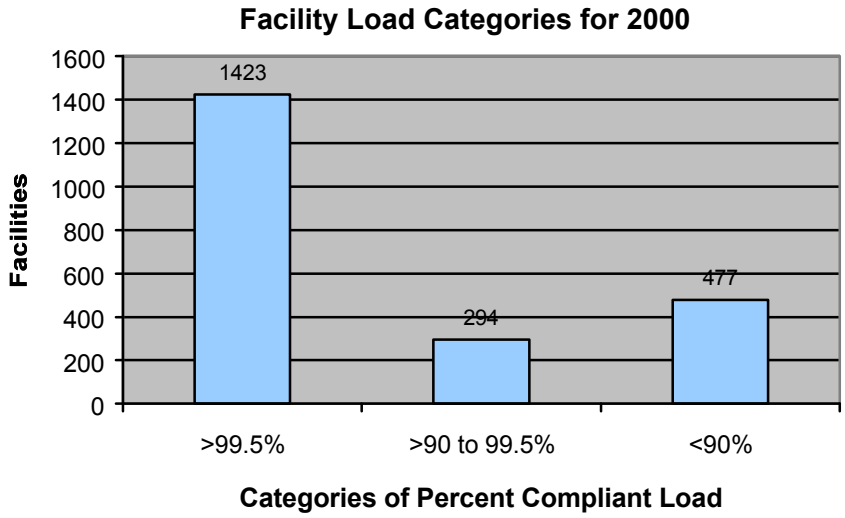


Figure 50

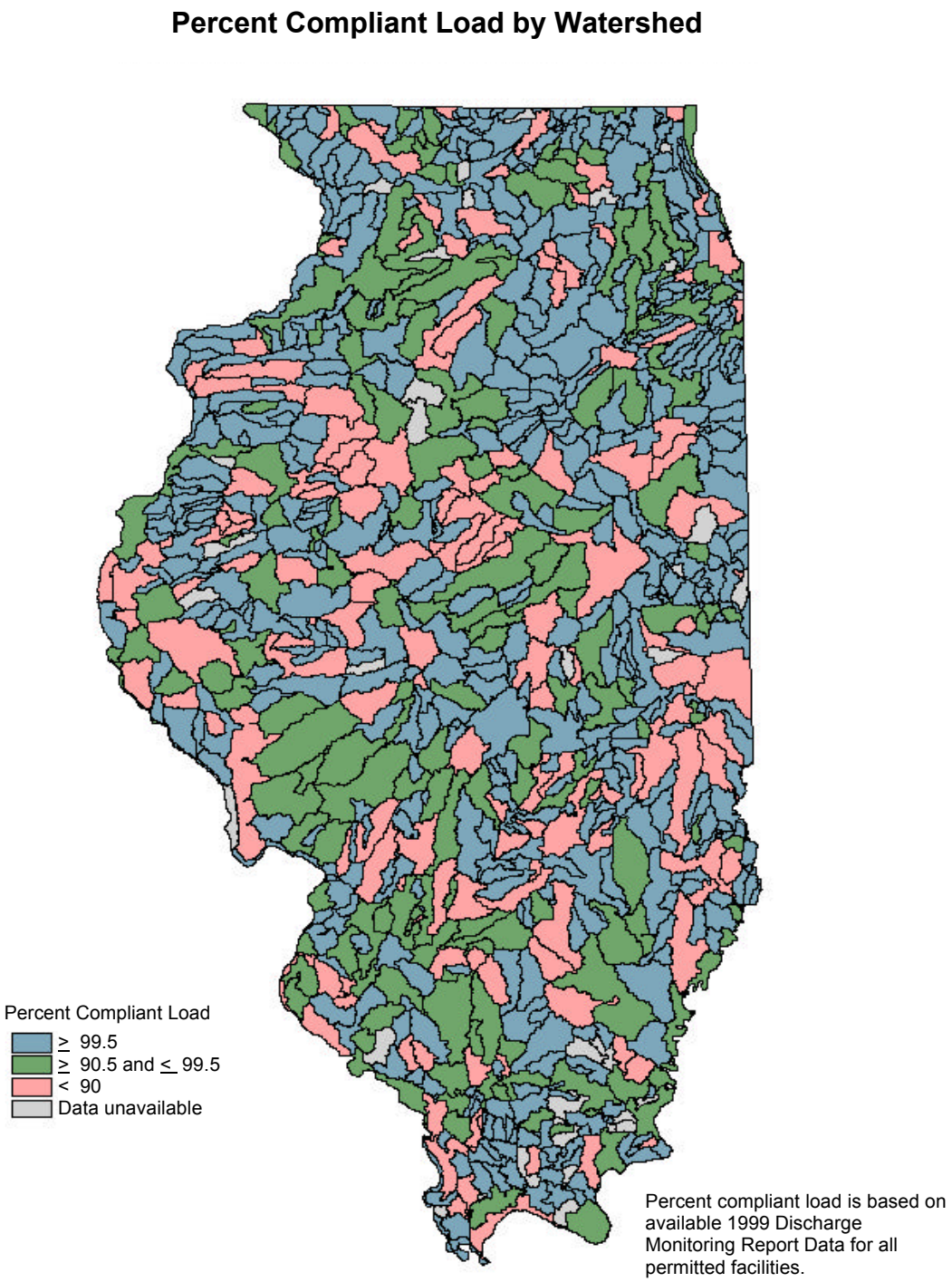


Conventional vs. Priority Pollutants

Further analysis of permit exceedances shows that 99.997% of the non-compliant pollutant loading relates to conventional pollutants and only 0.003% to priority pollutants

Figure 51 provides an illustration of the percentage of compliant load by watershed for all permitted facilities based on discharge monitoring data.

Figure 51



Watershed Plans

The Illinois EPA continues to utilize 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. To enhance program coordination and improve communication between agencies, a Natural Resources Conservation Service liaison position has been established and is housed at Illinois EPA. The Unified Watershed Assessment will be used in the expansion of programs, and enhanced coordination of watershed activities with other state and federal agencies. Watershed Implementation Plan development has been initiated in two watersheds selected from the Unified Watershed Assessment 1999-2000 Restoration Schedule for Category I Watersheds most in need of restoration. The development of watershed plans in targeted watersheds, utilizing 104(b)(3) funding, is an ongoing process which has implemented 15 watershed efforts to date. Section 319 funds are utilized to implement watershed plans developed through these programs as well as plans submitted by local planning groups.

TMDLs in Illinois

When waters fail to meet the uses for which they have been designated—swimming, drinking water supply, or any of a number of other activities—the federal Clean Water Act requires that these water be identified and that pollutant loads to those waterbodies be reduced. Total Maximum Daily Loads (TMDLs) are developed by the Illinois EPA for impaired waters (those with "fair" and "poor" classifications). A TMDL must also include a plan to reduce those loads. Illinois' most recent list of impaired waters, "Clean Water Act Section 303(d) List: Illinois' Submittal For 1998," was approved by USEPA in August 1999.

Since November 1999, the Agency has hired consultants and begun work on TMDLs in six watersheds, in keeping with the schedule established in the 1998 303(d) List. The Agency and its consultants have started data collection and evaluation, model selection and calibration, and public outreach. Contracts with the consulting firms that will be tasked with preparing the TMDLs and implementation plans were completed in January 2000, and the first in a series of public meetings/hearings was held in February 2000. Following initial collection of water quality, land use and other data by the consultants, data gaps were evaluated. This evaluation and the discussion of possible remedies are now underway. In two instances (Cache River and Big Muddy River), further TMDL development activities were suspended due to an assessment of updated water quality and biological data from the stream segment indicating that conditions had improved to the point that the stream at that location was no longer impaired (formal delisting of these stream segments will be conducted in April 2002). Completion of all activities for the remaining four watersheds is scheduled for Summer 2001.

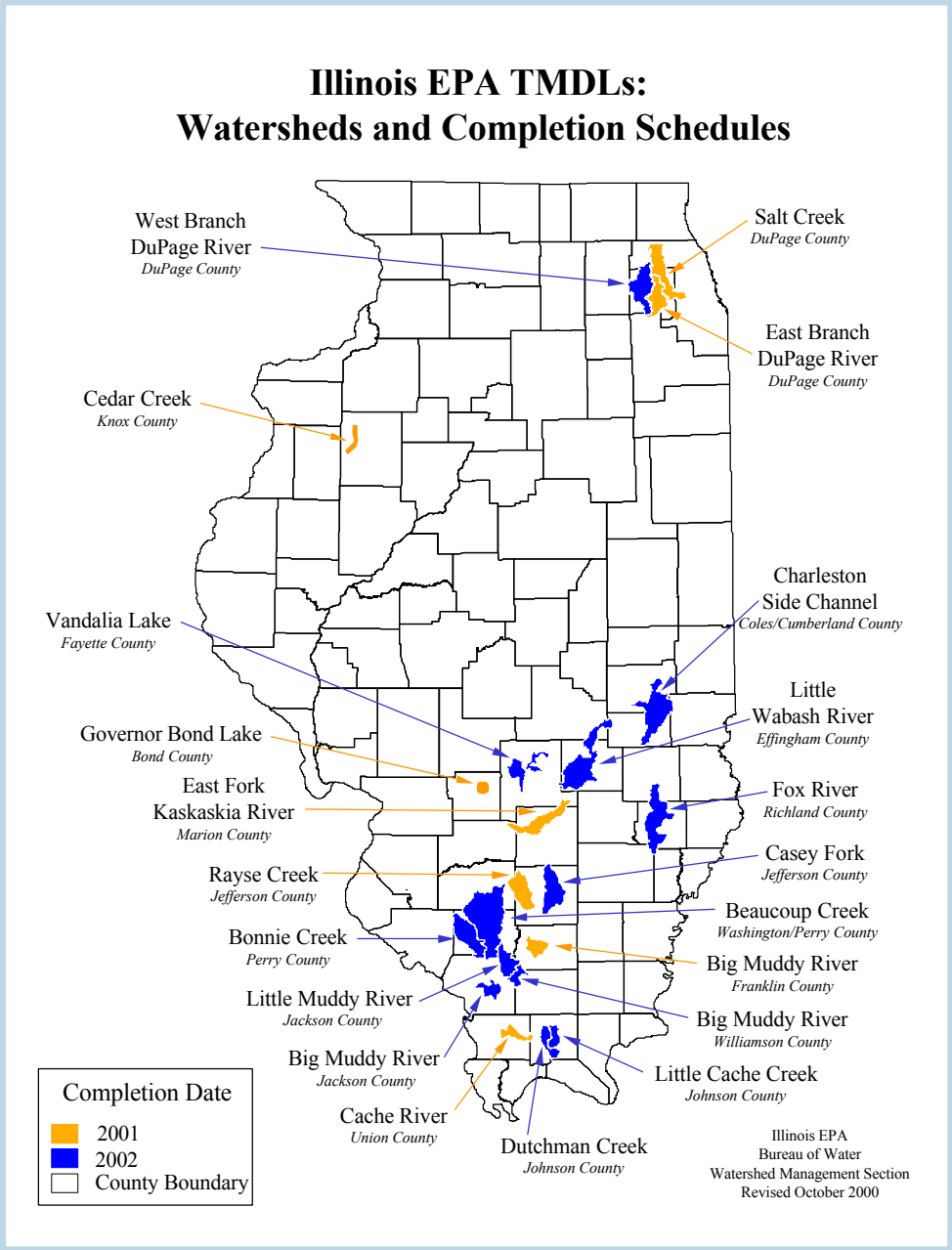
The next round of TMDLs will be conducted on 13 watersheds, as specified in the 1998 303(d) List. A request for proposals was issued in April 2000. The Agency selected contractor(s) in September 2000, with contracts entered in May 2001. A public meeting on the 13 watersheds will be held in June 2001.

In an effort to start additional TMDL work, in June 2000 the Agency applied for a Section 104 (b)(3) grant from Region 5 for TMDLs on the Fox River. That application was approved by Region 5. The work would be subject to procurement of a contractor capable of completing the

dissolved oxygen and fecal coliform related TMDL work on three Fox River segments. Another Section 104(b)(3) grant application was recently submitted to USEPA, to conduct additional TMDLs on impaired segments of Cedar Creek, near Galesburg.

The Illinois EPA is currently assisting USEPA and their contractor with TMDL development on two impaired waters--Cedar Creek near Galesburg and Governor Bond Lake near Greenville. Many of the same procedural steps will be involved in this activity as with the Agency initiated TMDLs, including public participation. Work is currently scheduled to be completed (submittal of the final TMDLs to Region 5 by Illinois EPA) at the end of calendar year 2001. Reference **Figure 52** for more information.

Figure 52



Source Water Protection

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

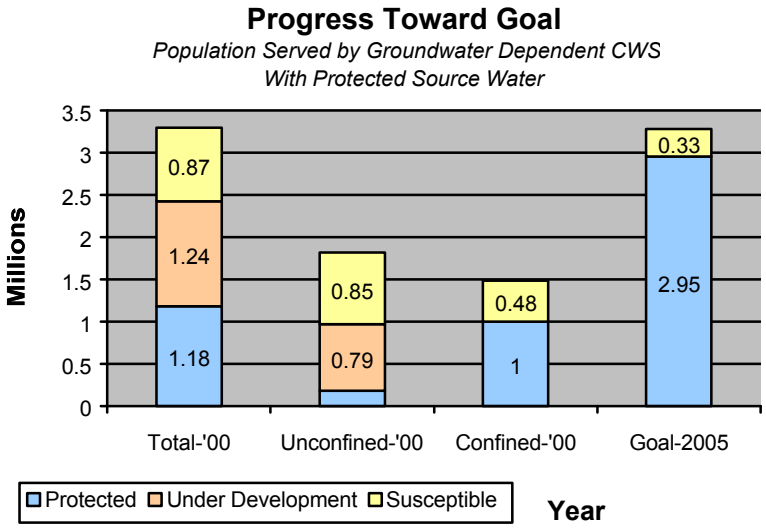
Protection of Illinois' valuable groundwater resource is critical. During 1995, groundwater withdrawals averaged 953 million gallons per day ("MGD"). Groundwater in Illinois supports domestic (drinking water use), commercial, agricultural, industrial, mining, thermoelectric and special resource uses. 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.

- Approximately 400,000 residences of the state are served by their own private 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

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.

These partnerships have utilized regulatory and non-regulatory programs to achieve success. Source water assessment and protection information is now provided to the public through an Internet geographic information system (GIS) at *http://il.water.usgs.gov/proj/il_swap/index.html*.

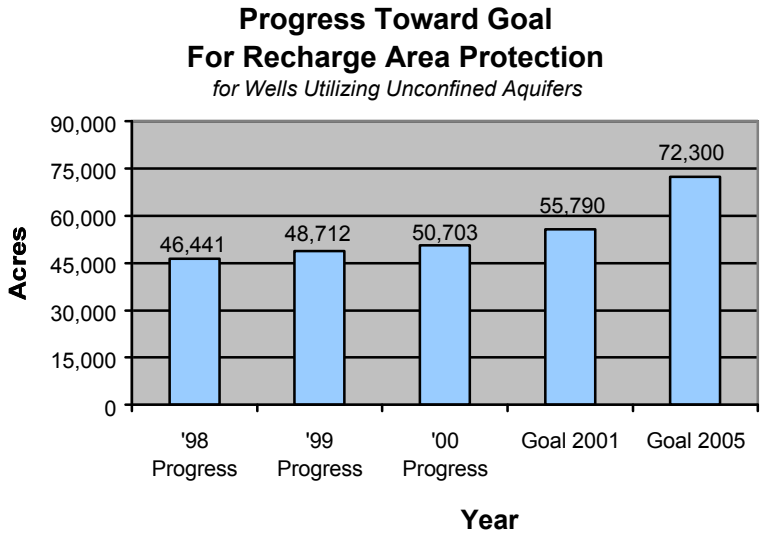
Figure 53



As illustrated in **Figure 53**, Illinois EPA is measuring the population served by systems with protected unconfined and confined aquifer resources.

Since approximately 1.8 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 54



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 54**, measuring the acres with protection programs under development or in place provides an effective indicator of Illinois' progress in protecting these susceptible areas.

Areas of Concern

Waukegan Harbor is Illinois' only Great Lakes "Areas of Concern" and is also a Superfund site. The Harbor was contaminated with PCBs from years of industrial activity in the area. Harbor sediments were highly contaminated and bioaccumulation resulted in contamination of fish residing in the Harbor. Special signs were placed warning the public not to consume fish taken from the Harbor. Subsequent to a settlement of Superfund litigation, including a major cleanup commitment from the primary source of PCB contamination, over one million pounds of PCB contaminated sediments were dredged from the Harbor. A Citizens Advisory Group was formed and a Remedial Action Plan has been developed to restore the Harbor to full attainment of all uses. The Remedial Action Plan has been fully implemented. The project is now in a monitoring stage to document the adequacy of the clean up and elimination of any residual use impairment in preparation for formal delisting as an Area of Concern. In February 1997, the special public advisory against human consumption of fish taken from the Harbor was lifted based on two years worth of post clean up monitoring data. Other monitoring programs continue as the Agency is developing both data and criteria for formal declassification as a Great Lakes Area of Concern.

The stage 3 report was submitted to the International Joint Commission (IJC) in December, 1999. The Corps is preparing to dredge the federal channel and deepen portions of the harbor that currently restrict commercial shipping due to shallow depths. A critical component of the CDMP is securing an acceptable site for the confined disposal facility. Currently the schedule calls for dredging to be underway by 2002.

Municipal Sludge Production

Approximately 384,127 dry tons (DT) of sludge were produced in 2000 by 518 publicly owned treatment facilities or private utility companies. Of these 518 facilities 14 are lagoon type facilities, which are removing accumulated sludge on a one-time basis (5024 DT permitted). The remaining facilities are mechanical plants, which produce sludge on a regular basis. This represents an increase of 15 facilities from last years figure. This increase reflects 1) a review of the sludge database, which found several facilities, which had been incorrectly identified as lagoons, 2) new facilities which have come online in the past year, and 3) the conversion of some lagoon facilities to mechanical plants.

The largest single generator in the state of Illinois is the Metropolitan Water Reclamation District of Greater Chicago (MWRD). MWRD generated 63 % of the sludge generated in the state of Illinois (242,106 DT). The application method final cover reflects the use of MWRD sludge as daily cover at the CID and Land & Lakes landfills. 95 % of this category is MWRD sludge. MWRD sludge used at the Fulton County coal mine reclamation site composes the bulk of the sewage sludge used for land reclamation purposes (17804).

Of the 513 facilities generating sludge in Illinois in 2000, 360 had active state permits for the land application of sewage sludge to land. The remaining 153 facilities include facilities, which landfill their sludge, hold their sludge in storage on a long term basis, or discharge to another treatment plant.

Figure 55 shows the sludge produced and applied in Chicago for 2000 and sludge produced in previous years which was held in storage and applied in 2000 (294,580 tons). The data shows that since 1998 the total amount of sludge being produced has decreased and that more sludge is used as final cover and applied to agricultural land rather than being landfilled.

Figure 55

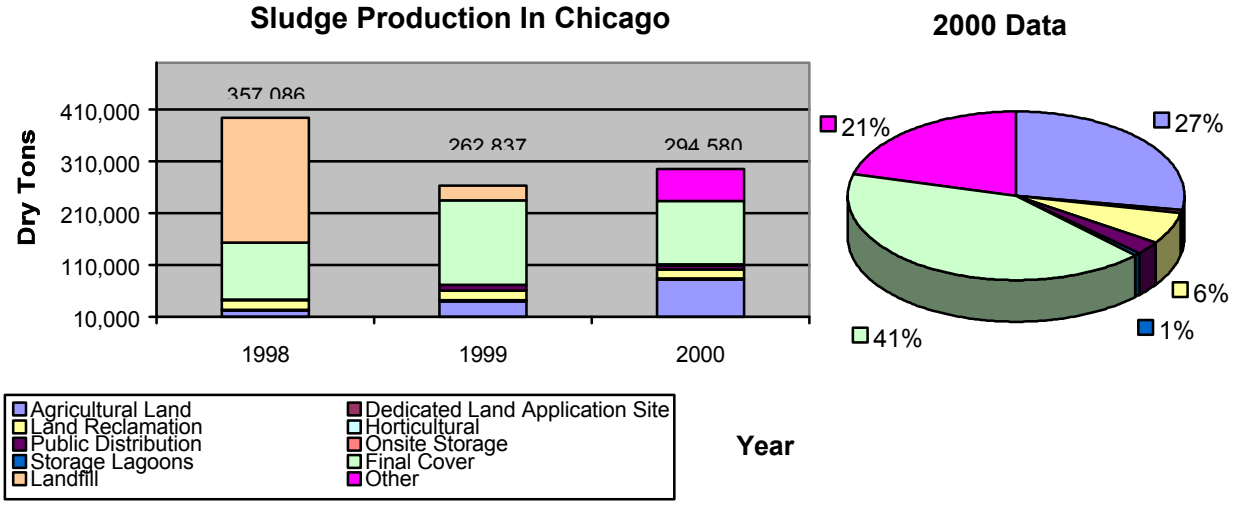
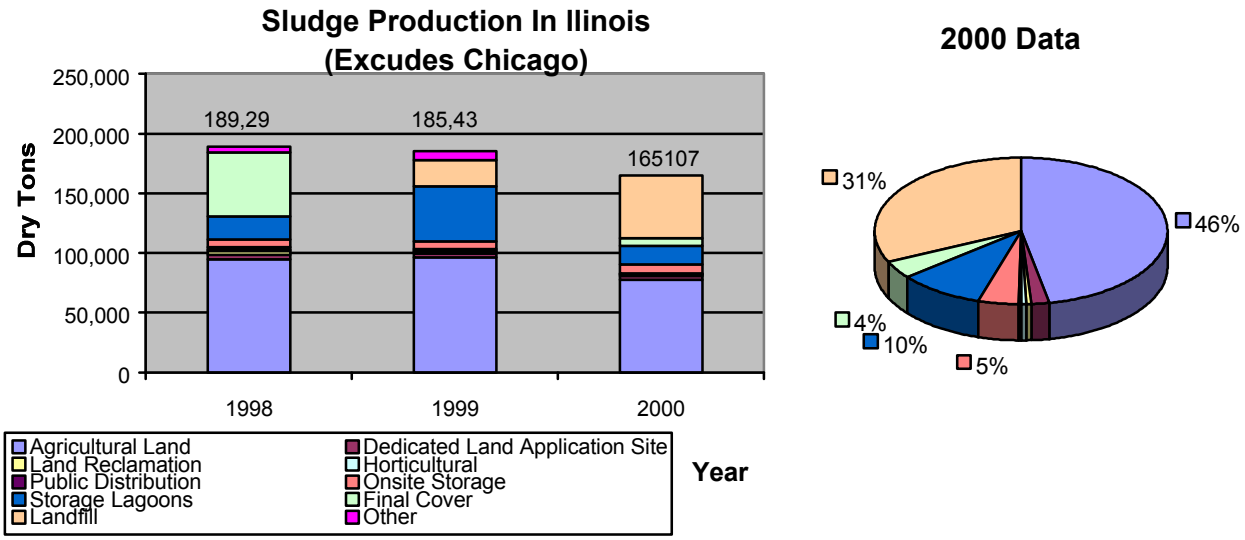


Figure 56 shows the same data but excludes Chicago (165,107 tons in 2000). While there is also a reduction in sludge being produced, the manner of sludge disposal is somewhat consistent during the past three years.

Figure 56



Sludge users

There are 19 active permits issued to sludge users in Illinois at this time. Peabody Coal-Will Scarlet Mine is a coal mine reclamation project which applies sludge to property the company owns rather than transporting sludge to fields owned by third parties. Wheelabrator-Bio Gro, the largest sludge hauler in the state, has two operating permits. 1998-SC-0674 governs the land application of stabilized sludge from various generators within Illinois. 1999-SC-2909 Covers material treated by Wheelabrator, using a pelletization process, which is distributed as a bagged product under the trade name Granulite.

Semi-public facilities

Also producing sludge in Illinois are 91 semi-public facilities, which have either state operating permits or reported generating more than one ton of sludge per year. Two of these facilities are lagoons, which are being cleaned out on a one-time basis. The remaining 89 facilities are schools, mobile home parks, private campgrounds, retirement homes and other facilities, which were not included under previous categories.

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:

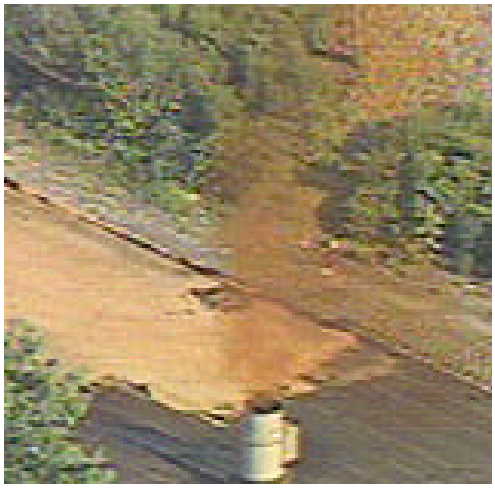
1. Toxic chemical hazards will be reduced over the next five years.
2. Better environmental performance is demonstrated over the next four years by participants in non-regulatory, structured situations.

PROGRAM PERFORMANCE

Program Objectives:

1. Emergency incidents will be timely controlled and fully resolved within 180 days.
2. Annual toxic chemical releases will show a downward trend due to various forces and actions.
3. Majority of pilot innovation projects undertaken will be fully or partially successful.
6. Effective on-site P2 assistance offered by IEPA non-regulatory engineers and technical specialists will increase by 10 percent each year.
9. One or more quality P2 recommendations will be provided in 20 percent of the regulatory field inspections by 2003.
10. Small businesses will be making changes or improving performance as a result of IEPA compliance assistance activities.
11. Small business awareness and use of IEPA telephone Helpline will increase by 10 percent each year.

Release of diesel products into a nearby creek.



Accidental release of nitric acid plume.

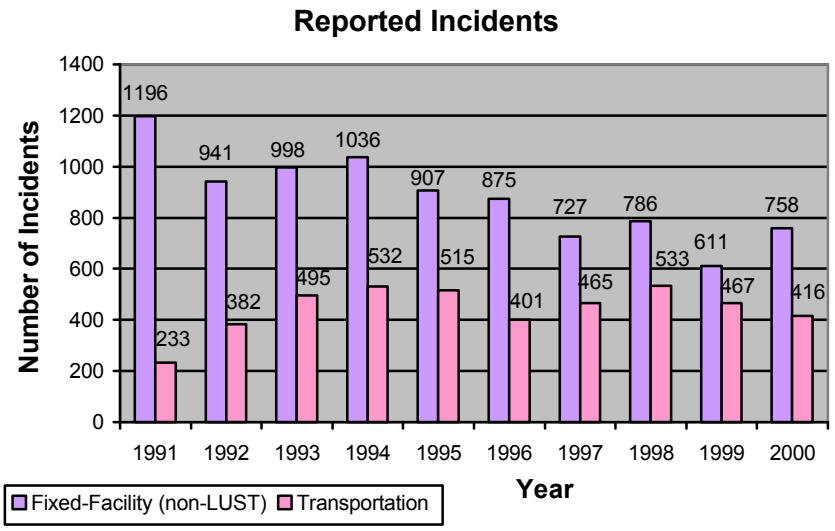
Emergency Incidents

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 declining since 1995, as shown in **Figure 57**, which suggests that prevention efforts by facilities are 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 57



Total Incidents :	1429	979	1493	1568	1422	1276	1192	1319	1078	1174

Certain reported emergency incidents require on-scene involvement from the Illinois EPA. In 2000, a total of 223 (18%) reported emergency incidents necessitated an on-scene Illinois EPA emergency response.

Toxic Chemical Releases

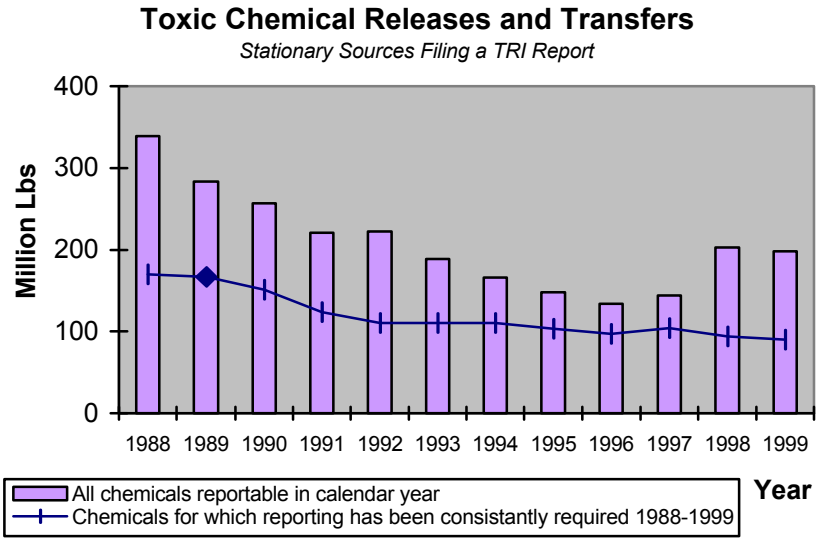
Over 60,000 chemicals are in commercial use in the United States. Many of the substances have toxic effects on humans and the environment. Unwanted exposure situations can occur in a myriad of ways from transportation accidents to spills at facilities, unsafe handling of certain hazardous paints, or 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.

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.

TRI data shows that in 1999, 1,318 facilities filed reports for 305 different chemicals, as indicated in **Figure 58**.

Figure 58



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 some innovative ways of achieving continuous improvement. In particular, environmental management systems (ISO 14001) are often utilized by project sponsors as the driving mechanism.

There are two approaches for generating innovation projects. First, under state law, we may enter into environmental management system agreements (EMSAs) with regulated entities that want to pilot test specific innovations. Second, we may participate as a party to a facility project agreement (FPA) under the USEPA's XL program. Both types of agreements typically provide for multi-year (e.g. three to five) projects.

There are currently two signed EMSA project agreements under the Illinois pilot program. The first facility to sign a project agreement was the 3M Corporation located in Bedford Park, IL. This agreement was signed in March 2000. The second project agreement signed was for Nestle Corp located in Jacksonville, Il. This agreement was signed in March 2001. 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. There are several other projects under development that we hope will lead to additional agreements.

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

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.

P2 intern conducting a waste audit at an industrial facility

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

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

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

P2 Internship Program

One of OPP's most popular technical assistance programs involves recruiting upper-level university students to develop and pilot P2 projects at Illinois facilities during the summer. In 1999, eighty percent of the 26 facilities that hosted a P2 intern implemented at least one of the student projects. Seven facilities reported specific environmental benefits and cost savings from the internship program. These P2 benefits and savings totaled:

- 450,000 pounds reduction in waste generation
- 16. 9 million gallons reduction in water use
- $171,000 savings in operating/disposal costs.

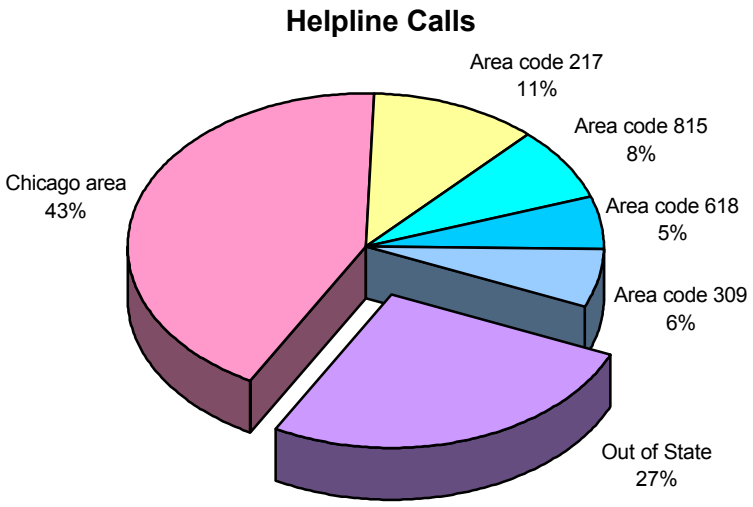
Assistance to Small Businesses

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.

Office of Small Business	2000
Small businesses made changes or improved performance as a result of compliance assistance activities.	25%
Small business awareness and use of the Helpline increased.	83%

Figure 59

Figure 59 illustrates the geographic location of the callers using the helpline.



APPENDIX A
MASTER LIST FOR REFERENCE MATERIALS*

AIR QUALITY MANAGEMENT

1. 2000 Illinois Annual Air Quality Report (June 2000)
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 2000)

WATER QUALITY MANAGEMENT

1. Illinois Water Quality Report (April 2000)
2. The Condition of Illinois Water Resources (August 2000)
3. Lake Michigan Water Quality Report 1992-1993 (June 1997)
4. Annual Compliance Report for Public Water Supplies (June 2001)
5. Illinois Groundwater Protection Program Biennial Comprehensive Status & Self-Assessment Report (January 2000)
6. The Illinois Wellhead Protection Program Biennial Report (October 1997 - September 1999)

LAND QUALITY MANAGEMENT

1. Leaking Underground Storage Tank Program, 2000 Annual Report (March 2001)
2. Response Action Program, 2000 Annual Report (March 2001)
3. Federal Sites Remediation Program, 2000 Annual Report (March 2001)
4. Site Remediation Program, 2000 Annual Report (May 2001)
5. The Office of Brownfields Assistance: Brownfields Assistance Program (February 2000)
6. Brownfields Redevelopment Grant Program: Project Descriptions (January 2001)
7. Nonhazardous Solid Waste Management Landfill Capacity, 1999 Annual report (January 2001)

MULTIMEDIA MANAGEMENT

1. Thirteenth Annual Toxic Chemical Report (April 2001)
2. 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 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, in accordance with 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.

Depending upon the size of the source, sources must submit emissions data on:

• Carbon monoxide (CO) • Dioxin • Furan • Di-Benzo-P-dioxins • Fluorides • Hydrogen sulfide • Lead • Methylene Chloride • 111-Trichloroethane	• Nonvolatile organic material • Nitrogen oxides • Course particulate matter (PM_{10}) • Fine particulate matter ($PM_{2.5}$) • Sulfuric acid mist • Sulfur dioxide (SO_2) • Total reduced sulfur • Volatile organic material (VOM)

In addition to the above pollutants, certain categories of facilities regulated in accordance with Section 112 of the Clean Air Act are required to provide annual source totals of the hazardous air pollutants (HAPs) that have been emitted by those facilities.

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 composed 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 noncriteria 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, NO_2, SO_2, lead, 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 $PM_{2.5}$.

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 72 AQI	7 ppb 10 AQI		
Wood River			3 ppb 4 AQI		
Edwardsville		83 ppb 97 AQI*			
Granite City			6 ppb 9 AQI	1.1 ppm 13 AQI	77 ug/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	24.5ug/m^3 69 AQI	56 ppb 44 AQI	25 ppb 37 AQI		
Sauget			3 ppb 4 AQI		

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

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.

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. 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 recordkeeping 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%. This provides Illinois with a specific, creditable VOM emissions reduction in the Chicago nonattainment area.
7. 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 rare 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 2000 acres remediated:

Cleanup Program	Authority	Acres Remediated (In 2000)
Leaking UnderGround Storage Tank (LUST)	RCRA Subtitle I; 415 ILCS 5/57 35 Ill. Adm. Code 731, 732	1,769
National Priorities List (Superfund)	Comprehensive Environmental Response, Compensation, and Liabiity Act CERCLA)	446
Response Action	415 ILCS 5/4 35 Ill. Adm. Code 750	46
Site Remediation Program	415 ILCS 5/58 35 Ill. Adm. Code 750	870
Federal Facilities	42 U.S.C. 9601 et seq. 40 CFR 300 et seq.	490
Resource Conservation and Recovery Act (RCRA)	RCRA Subtitle C 35 Ill. Adm. Code 724, 725	6,784

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	99 Tons	Code
Facilities in detection monitoring			
AFA - Renwick Road	1970500011	11,672	D
American Disposal Servs /Bloomington Landfill	1130200042	89	D
Brickyard Disposal and Recycling	1838040029	226,845	D
CDT Landfill	1978170006	153,636	D
CID Recycling and Disposal Facility #4	310390001	15,135	D
CIPS Coffeen Power Station	135800005	0	D
Clinton Landfill #2	398080007	230,152	D
Congress Development Co. Landfill (Sexton #2)	318170002	225,347	D
Cottonwood Hills RDF (under development)	1630755017	0	D
Countryside Landfill	970250003	418,956	D
Envirotech Landfill	638140002	131,240	D
FGDS - Springfield	1678250020	5	D
Knox County Landfill #3	958160003	75,300	D
LandComp Landfill (new)	990808103	14,185	D
Landfill 33 (Effingham Co. LF)	498100007	41,986	D

Name	ID Number	99 Tons	Code
Laraway Recycling and Disposal Facility	1970450002	67,236	D
Lawrence County Regional Landfill (new)	1010100002	68,582	D
Lee County Landfill (new)	1030205110	37,376	D
Livingston Landfill	1058210002	1,611,989	D
NSSD - Newport Harbor	978100002	10,184	D
Orchard Hills Landfill (new)	1410175005	427,923	D
Peoria Disposal Co. #1 (PDC)	1438120003	48,487	D
Prairie Hill Recycling and Disposal Facility	1950350014	141,608	D
Quad Cities Landfill#*	1610400007	261,712	D
RCS Landfill	830250012	23,202	D
Rochelle Municipal Landfill #2	1418030020	55,000	D
Saline County Landfill	1658080001	101,390	D
South Chain of Rocks RDF - Phase2	1198010002	163,872	D
Streator Area Landfill #3	1054900003	210,246	D
Upper Rock Island County Landfill	1618100014	303,000	D
Wayne County Landfill, Ill. Inc.	1918040003	110,776	D
	Total:	**5,187,131**	
*Quad Cities III and BFI - Quad Cities IV report together			

Name	ID Number	99 Tons	Code
Facilities in assessment monitoring			
American/CIPS #2	798080002	113,311	A
D & L Landfill	50050001	21,953	A
Five Oaks Recycling and Disposal Facility	218160006	335,758	A
Freeport Municipal Landfill #4	1770200015	25,101	A
Granite City Steel	1190400001		A
Indian Creek LF/Mineral Solutions	1798090002	0	A
Kankakee Recycling and Disposal Facility	910550006	87,337	A
Lincoln Stone Quarry	1978090001	0	A
Peoria City/Counsel Landfill #2 (new)	1438165003	117,319	A
Pike County Landfill	1498160001	92,650	A
Salem Municipal Landfill #2	1218130007	3,376	A
Settler's Hill Recycling and Disposal Facility	890100009	924,520	A
St. Louis Auto Shredding	1631000003	10,112	A
Wheatland Prairie Recycling/Disposal Facility	1978200004	305,665	A
Woodland Recycling and Disposal Facility	894830005	384,140	A
Zion Landfill (new)	978020002		A
	Total:	**2,421,242**	

Name	ID Number	99 Tons	Code
Facilities in corrective action			
CID Recycling and Disposal Facility #3	31600030		C
Coles County Landfill	298050007		C
DeKalb County landfill	378020001		C
Envirofil of Illinois Landfill	1098100003		C
Illinois Landfill	1830450009	65,508	C
Litchfield-Hillsboro Landfill	1358150007		C
Macon County Landfill	1158040008		C
Milam Recycling and Disposal Facility	1630450001		C
Morris Community, A & B	630600001		C
River Bend Prairie Landfill	310690003	90,052	C
Roxana Landfill Authority	1190900002		C
Southern Ill Regional Landfill (Jackson Co.)	770200002		C
Tazewell Recycling and Disposal Facility	1798060004		C
Winnebago Reclamation Service	2018080001		C
	Total:	**155,560**	

3. Municipal Solid Waste

A municipal solid waste landfill is a sanitary landfill permitted by the Illinois EPA to receive household solid waste. 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 out of state and disposed in Illinois to evaluate its impact on municipal solid waste disposed 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.

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 (i.e., domestic and commercial large appliances) that have not had their components removed; (4) lead-acid batteries; and (5) liquid used 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 2000, the Illinois EPA orchestrated 230 Household Hazardous Waste Collections funded by statewide fees on landfilled nonhazardous 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.

Date	**Site**	**Cosponsor/Cosponsor Contributions**	**55 gal drums collected**
4/29/00	Dixon	Lee/Ogle County Lee $50,000/ Ogle $25,000	257
6/3/00	Clinton	Dewit Co. Soil & Water Cons Dist	100
6/10/00	Palos Hills	Palos Hills, MWRDGC MWRDFC $20,000	415
6/24/00	Glenview	SWANCC SWANCC $7,500	619
7/8/00	Deerfield	SWALCO Landfill SEP	353
9/9/00	Watseka	Iroquois County Solid Waste	135
9/16/00	Robinson	City of Robinson	91
9/23/00	Bartlett	Village of Bartlett	140
9/23/00	Libertyville	SWALCO Landfill SEP $35,000 SWALCO paid difference	269
9/30/00	Decatur	Macon County	88
10/7/00	Broadview	Village of Broadview	125
10/14/00	Effingham	Effingham Co. Soil & Water Cons Dist	90
10/21/00	Chicago UIC	Chicago Department of Env (CDOE)	108
10/28/00	Arlington Heights	Arlington Heights/MWRDGC MWRDGC $20,000	701

Fourteen collection events were held in 2000 with the following local sponsors:
MWDGC = Metropolitan Water Reclamation District of Greater Chicago
SWANCC = Solid Waste Agency of Northern Cook County
SWALCO = Solid Waste Agency of Lake County
CDOE = Chicago Department of Environment

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[a]	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
TOTAL	**18,096**	**$4,409,130**	**72,757**	**$258.25**

[a] 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 three state fiscal years (SFY96, SFY97, SFY98, SFY99 and SFY00):

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
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
TOTALS		**9,786**	**$1,618,472**	**66,645**	**$159.20**

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 $258 per drum of wastes collected. During the same time period, the Illinois EPA spent 40% less (or approximately $159 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. Unusable or waste paint is poured into drums for pickup and disposal by an Illinois EPA contractor.

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 educational waste collections at 67 high schools in 37 communities:

1.	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
2.	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
3.	1998	Batavia HS, Griggsville HS, York HS, Rushville HS	Batavia, Elmhurst, Oak Lawn, Rushville
4.	1999	Schaumburg, St. Jacob, Jacksonville Routt, Porta, Piasa, Brookfield	Schaumburg, Troy, Jacksonville, Petersburg, Greenfield, Brookfield
5.	2000	Ten schools in 12 communities	Dixon, Rochelle, Clinton, Palos Hills (Carl Sandburg), Deerfield, Robinson, Bridgeport (Red Hill School), Decatur, Effingham, Greenville

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.

Year	Number of Listings	Number of Transfers	Cost Savings	Volume (Gallon Equivalents)
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
Total	**7027**	**1409**	**$188,733,746**	**468,776,120**

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 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 the Used and Waste Tires regulations (35 Ill. Adm. Code 848):

PTE =Weight of whole or shredded tires (approximately 25 pounds)

Twenty-five county-wide collection events were conducted in 2000. An average of 160 tons (approximately 12,849 PTEs) were collected per county. Below is a list of the participating counties, sponsors and tons collected at each event:

County	Sponsor	Weight (Tons)
Bureau	Bureau Co. Farm Bureau	116.18
Champaign	Champaign Co. Farm Bureau	130.13
DeWitt	Dewitt co. States Attorney	43.6
Dupage	Dupage Co. Public Words Dept	22.82
Edwards	Edwards Co. Farm Bureau	36.26
Effingham	Effingham Co. Farm Bureau	191.55
Fayettte	South Central FS	48.29
Jefferson	City of Mt. Vernon	103.26
JoDavies	JoDaviess Co. Health Dept	225.1
Lake	Solid Waste Agency of Lake Co.	83.41
Madison	Madison Co. Building, Zoning & Env.	487.02
McDonough	McDonough Co. Soil & Water	97.02
Mchenry	Mchenry Co. Farm Bureau	300.48
Menard	Menard Co. Farm Bureau	24.46
Morgan	City of Jacksonville	43.38
Peoria	Peoria Co. Extension Service	276.1
Randolph	City of Sparta	48.37
Saline	Egyptian Health Dept	76.66
St. Clair	St. Clair co. States Attorney	500.86
Union	Southern Seven Health Dept	159.86
Vermillion	Vermilion Co. Farm Bureau	222.8
Warren	Environmental Management Corp.	83.3
Washington	Agripride FS, Inc	194.74
Williamson	Williamson Highway Department	195.1
Winnebago	County of Winnebago	304.86
TOTAL TONNAGE	**4,015.61 (160.62 ave tons/county) (12,849 ave PTEs/county**	

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 (tons)	Year	Amount of Used and Waste Tires Collected or Cleaned Up (tons)
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		
TOTAL		**91,662.89 (7.35 million passenger tire equivalents)**	

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 landscape waste compost facilities. Owners and operators of Illinois compost facilities must meet the operating, permitting, and reporting requirements in 35 Ill. Adm. Code 830 – 832. The data do not reflect farms and households engaged in composting landscape wastes.

White goods (e.g., discarded refrigerators, ranges, water heaters, freezers, air conditioners, humidifiers, etc.) that have not had their components removed, lead-acid batteries, and liquid used oil are also banned from landfilling (415 ILCS 5/22.28, 415 ILCS 5/22.23, and 415 ILCS 5/21.6, respectively).

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 1999, Illinois EPA had written delegation agreements with 20 units of local government to conduct inspections, investigations, and enforcement activities at open dumps, transfer stations, landscape waste compost facilities, municipal solid waste landfills, tire dumps, and other nonhazardous waste management units (415 ILCS 5/4(r)):

Delegated Local Government	
Ambraw Valley Solid Waste Agency	McHenry County Health Department
(Crawford, Lawrence and Richland Counties)	Montgomery County Coordinated Services
City of Chicago Department of Environment	Ogle County Solid Waste Management Department
Christian County Solid Waste Management Dept.	Perry County Health Department
DuPage County Solid Waste Division	St. Clair County Health Department
Jackson County Health Department	Sangamon County Department of Public Health
Kankakee County Health Department	Tazewell County Health Department
Lake County Health Department	Vermilion County Health Department
LaSalle Department of Environmental Services and Land Use	Wayne County Health Department
Macon County Solid Waste Management Department	Will County Land Use Department
Madison County Building, Zoning & Environmental 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 within 3 years of their discovery. The following tables identify the number of open dumps discovered in 1999 and the cleanup status. The Illinois EPA divides the state into seven regions with field offices located in Rockford, Des Plaines, Peoria, Champaign, Springfield, Collinsville, and Marion.

1999 Open Dumps								
Region	Open Dump Sites Discovered in 1999		Open Dump Sites Cleaned up in 1999		Open Dump Sites Remaining to be Cleaned up		Cubic Yards of Waste Removed from open dump sites as of 12/31/99	
	IEPA	County	IEPA	County	IEPA	County	IEPA	County
1	22	90	7	63	15	27	361	1,013
2	23	230[a]	5	65[a]	18	165[a]	831	3,469[a]
3	44	12	25	9	19	3	1,466	149
4	43	13	19	7	24	6	1,112	240
5	50	55	19	20	31	35	2,526	1,279
6	23	88	15	59	8	29	300	1,365
7	41	46	36	42	5	4	4,995	10,550
SUB TOTAL	246	534	126	265	120	269	11,591	18,065
TOTAL	**780**		**391**		**389**		**29,656**	

[a]Chicago figures were not available

Illinois EPA continued aggressive compliance and enforcement activities on open dump sites discovered prior to 1997; however, the status of these sites are not specifically included in this annual environmental conditions report.

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 nonhazardous materials, energy, water, other resources as well as those that protect natural resources through conservation or more efficient use (see Multimedia Management section).

In 1999, the following facilities reported hazardous waste disposal in Illinois.

Facility	Illinois Identification Number	Location	Hazardous Waste Management Unit	Amount Disposed (tons)
Cabot Corporation	148080001	Tuscola	Underground Injection Well	516,376
LTV Steel	1558010006	Hennepin		
Peoria Disposal Corporation	1438120003	Peoria	Hazardous Waste Landfill	86,670
Marathon Oil	338080002	Robinson	Land Treatment	18,269
TOTAL				**621,515**

The annual amount of hazardous waste disposed in Illinois that was reported in previous Illinois EPA Annual Environmental Conditions Reports was updated to include hazardous waste managed and disposed at land treatment units for the years 1991 through 1995. 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 USEPA 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 nonhazardous waste.

Facility	Illinois Identification Number	Location
Cabot Corporation[a]	418080001	Tuscola
LTV Steel	1558010006	Hennepin
Equistar	418080002	Tuscola

[a] 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 below shows the type of completion letters issued by the Illinois EPA cleanup programs.

Program	Types of Completion Letters Issued in 2000	Authority
Leaking Underground Storage Tank (LUST)	815 No Further Remediation (NFR) Letter	415 ILCS 5/57.10
Site Remediation Program	136 4(y) Letter No Further Remediation (NFR) Letter	415 ILCS 5/4(y)} 415 ILCS 5/58.10
National Priorities List (Superfund)	Construction Completed	CERCLA/SARA
Response Action	Termination and Satisfaction Letter	415 ILCS 5/4(q)
Federal Facilities	12 Finding of Suitability for Transfer Letter 4(y) Letter	42 U.S.C. 9620(h)(3) 415 ILCS 5/ 4(y) 415 ILCS 5/57.10
Resource Conservation and Recovery Act (RCRA)	17 Closure Letter No Further Remediation (NFR) Letter	35 Ill. Adm. Code 725.215415 ILCS 5/58.10

9. Contaminated Areas Evaluated and Ready for Remediation

Contaminated areas are generally brought to the attention of the Illinois EPA through citizen complaints, notification of a release as required by permit or regulation, or referrals from other governmental agencies.

Before actions are taken at a site, the Illinois EPA considers many factors including (a) identified release or threatened release of a hazardous substance or pesticide; (b) risk to human health; (c) ecological concerns; (d) availability of funds; (e) releases or threatened releases at other sites requiring greater urgency; (f) public concern about the site; (g) benefits of the investigation or remediation (e.g., potential for redevelopment); and (h) potential costs recovery (i.e., responsible parties who are able to conduct the corrective action).

Remediation activities may include (a) investigation to determine the nature and extent of contamination; (b) removal of hazardous substances from the site (e.g., removal of hazardous waste drums or contaminated soil); (c) containment of hazardous substances (e.g., installing and maintaining a landfill cap and leachate collection system); (d) treatment of hazardous substances (e.g., incineration or bioremediation of contaminated soil); (e) post-remedial activities (e.g., groundwater monitoring); and (f) administrative activities (e.g., cost recovery).

10. 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 an annual 305(b) report cycle. This *2000 Annual Environmental Conditions Report* uses data from the most recently completed 00 Cycle 305(b) report which presented data collected through 1998. 17.6 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 with use impairments from point sources only, nonpoint sources only, and from both point and nonpoint sources. The number of 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 1999, the Illinois Fish Contaminant Monitoring Program tested fish at 440 stations in Illinois. Fish consumption data was available for approximately 5% of the total stream miles and 41% of the total lake acres in Illinois. Fish have been tested and found to be safe for unlimited consumption in 82% of the stream miles and 73% of the lake acres for which there is fish consumption information available. Fish advisories have been issued for the entire Illinois portion of Lake Michigan.

The program tests for pesticides and other compounds such as chlordane, dieldrin, PCBs, and mercury. Since bans have been imposed for many of the pollutants causing advisories (except mercury), the Illinois EPA expects a reduction in the number of fish advisories issued for these pollutants in Illinois over the next five years.

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 an annual 305(b) report cycle. This *2000 Annual Environmental Conditions Report* uses data from the most recent "00 Cycle" 305(b) assessment process which looks at data collected through 1998. For that cycle, 62.2% 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 lake acres with use impairments from point sources only, nonpoint sources only, and from both point and nonpoint sources. The 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 more strict 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 an annual 305(b) report cycle. This *2000 Annual Environmental Conditions Report* uses data from the 00 cycle 305(b) assessment which utilized data from 1998. All 63 shoreline miles of Lake Michigan in Illinois were assessed.

4. Persons Served by Compliant Water Supplies (Report text has complete explanation)

5. 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.

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

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

8. 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://il.water.usgs.gov/proj/il_swap/index.html.

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 EQUIP Eligibility Bonus Points.

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

10. 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.