SECTION 1

NEED

1 NEED

Purpose

Veolia ES Zion Landfill, Inc. (the "Applicant") is applying for local siting approval to the City of Zion (the "City") for an expansion of the Veolia ES Zion Landfill (the "Landfill" or "Facility"). The expanded landfill will provide solid waste disposal capacity to the City, Lake County ("County") and other communities in the service area for years to come.

In applying for local siting approval of the proposed landfill expansion, the Applicant must demonstrate that the Facility complies with the criteria of Section 39.2 of the Illinois Environmental Protection Act ("Act"). Criterion 1 of Section 39.2 and of the City of Zion Pollution Control Facility Siting Ordinance requires that applicants for siting approval demonstrate "the facility is necessary to accommodate the waste needs of the area it is intended to serve."

The purpose of this report is to analyze whether the proposed Veolia ES Zion Landfill Site 2 East Expansion is necessary to accommodate the waste needs of the area it is intended to serve. In conducting the investigation for the needs analysis, Shaw Environmental, Inc. has compared projections of the amount of waste which will be disposed by the service area between 2009 and 2022 (the estimated operating life of the combined current and expanded Facility) with the amount of permitted capacity available to the service area to dispose of the waste. In addition, Shaw Environmental, Inc. has compared the remaining capacity at permitted landfills (as of January 1, 2009) with their historical fill rates, in order to determine their projected remaining useful operating lives (refer to Appendix E.4).

The analysis contained in this report demonstrates that the Facility is necessary to accommodate the waste needs of the service area and that there is a clear need for the additional capacity which the proposed expansion will provide to the service area. This conclusion is supported by the following findings:

- ❏ Lake County communities have historically relied on local landfills, including the Veolia ES Zion Landfill, for disposal capacity. Unlike other counties in the Chicago metropolitan area, there are no transfer stations in Lake County and the County disposes of most of its waste by direct haul to local landfills.

- ❏ Historically, most of the County's waste has been disposed at 3 facilities: the Veolia ES Zion Landfill, the Countryside Landfill (located near Grayslake) and the Pheasant Run Landfill (located in Kenosha County, Wisconsin). These landfills reported a combined remaining capacity of 9,572,000 tons as of January 1, 2009. In December, 2009, the Pheasant Run Landfill received approval for an expansion of 5,710,000 tons. Based on their combined intake of 1,985,000 tons of waste in 2008, the three landfills have approximately 6 ½ years of combined remaining capacity (as of the date of this report).

- ❏ The Veolia ES Zion Landfill had a remaining capacity of 3,345,000 tons of waste as of January 1, 2009 and took in 657,000 tons of waste in 2008. The Facility therefore has approximately 4 years of remaining life based on 2008 disposal volumes (as of the date of this report). Based on projected average disposal quantities of 3,100 tons of waste per day (886,600 tons per year), the Facility has approximately 3 years of remaining life (as of the date of this report).

- ❏ The Solid Waste Agency of Lake County (SWALCO), the designated solid waste planning authority for Lake County, entered into a solid waste disposal agreement with the Veolia ES Zion Landfill in 1994. Under this agreement, the landfill accepted set-aside capacity for Lake County waste. Because waste volumes from Lake County have exceeded the annual set-aside amount, the Landfill's capacity commitment is estimated to have been fulfilled in 2007 instead of 2018 as anticipated when the disposal agreement was signed. Likewise, the set-aside capacity at the Countryside Landfill is estimated to have been fulfilled in 2008 versus 2016 as originally anticipated. This demonstrates that Lake County relies on local disposal capacity.

- ❏ The County's Solid Waste Management Plan (as updated) recommends that the County rely on privately owned and operated landfills for disposal capacity.

- ❏ In particular, the County's 2004 Plan Update recommends that existing disposal agreements (including the agreement with the Veolia ES Zion Landfill) be maintained to provide disposal capacity.

- ❏ Moreover, the 2004 Plan Update recommends that the County secure additional landfill capacity to meet the County's needs for a 20-year period. The proposed expansion of the Veolia ES Zion Landfill will help the County to address a portion of that need.

- ❏ The service area is projected to grow in population, which will lead to greater quantities of waste that must be managed.

- ❏ The capacity deficit within the service area over the analysis period 2009-2022 is approximately 104,282,000 tons, significantly greater than the estimated 12,298,000 tons of capacity the expanded Facility will provide.

- ❏ Even if more distant landfills are considered, the Chicago metropolitan region has only approximately 12 years of permitted capacity as of the date of this report. This is far less than the 20 years recommended for Lake County by the 2004 Plan Update. Moreover, most of this regional capacity is not available to Lake County because of the extended distance to the landfills and because there are no transfer stations in Lake County.

Proposed Service Area

The Veolia ES Zion Landfill expansion is intended to serve the City of Zion, Lake County, Cook County, eastern McHenry County (including the following townships: Algonquin, Dorr, Grafton, Greenwood, Hebron, McHenry, Nunda and Richmond) and Kenosha County, Wisconsin (see Figure 1-1). This represents the historical service area for the Veolia ES Zion Landfill. The proposed expansion represents a continuation of the existing landfill's business.

The expanded landfill will provide numerous benefits to the City of Zion and other communities in Lake County and the service area. These benefits include the following:

- ❏ A conveniently-located landfill that will provide disposal capacity to local communities for approximately 13 years (as of the date of this report, and inclusive of existing capacity and expansion capacity);

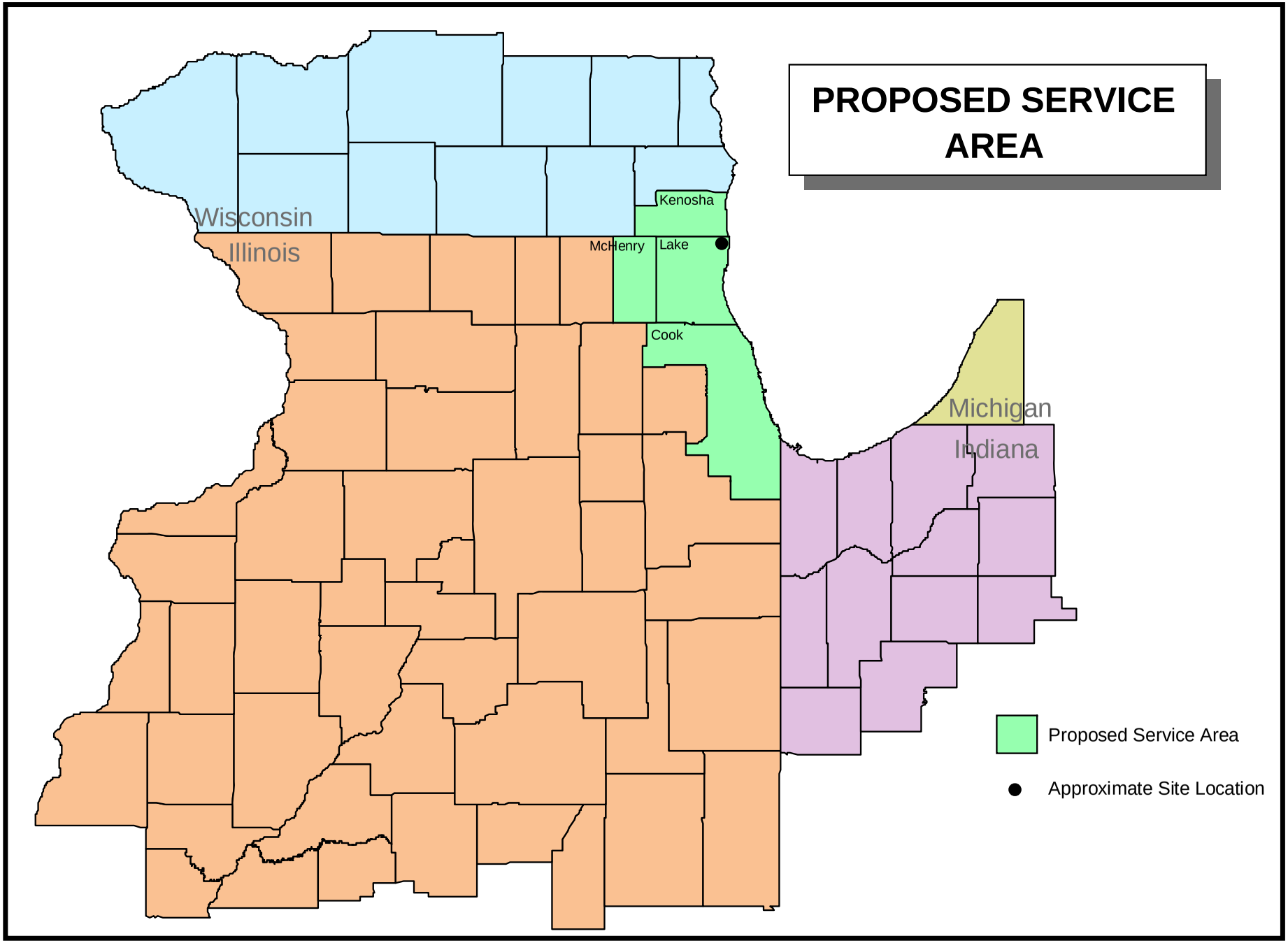
PROPOSED SERVICE AREA
Wisconsin
Illinois
Kenosha
McHenry
Lake
Cook
Michigan
Indiana
Proposed Service Area
Approximate Site Location

FIGURE 1-1

- ❑ Reduced waste transportation costs, and therefore reduced tax burdens and costs to residents and local businesses;

- ❑ A landfill that will compete with other landfills and assure that local communities will have the continued availability of a cost-competitive, safe and convenient disposal option;

- ❑ A large development project that will inject jobs and significant dollars into the local and regional economy.

Size of Expansion

The landfill expansion will provide approximately 8,953,000 tons of additional needed disposal capacity to the proposed service area (refer to Appendix E.1). The capacity of the Facility is far smaller than the amount of waste the service area is projected to require disposal of during the anticipated life of the expanded Facility.

Based on an estimated average throughput of 3,100 tons per day, the expanded landfill will provide approximately 13 years of disposal capacity as of the date of this report (including existing capacity and expansion capacity -- refer to Appendix E.1). This projected throughput is based on the approximate average daily quantity of waste handled at the existing landfill over the period 2004-2008. The proposed expansion represents a continuation of the existing landfill's business.

Types of Waste Received

The expanded landfill will receive municipal solid waste and non-hazardous special waste. Based on historical data for the Veolia ES Zion Landfill (for the period 2000 to 2007), it is anticipated that municipal solid waste will account for about 90 percent of the incoming waste material by weight, and non-hazardous special waste will account for approximately 10 percent of the incoming waste material by weight (3 percent excluding contaminated soils). Historically, the landfill has accepted significant quantities of soil materials, including topsoil and contaminated soils. Some of the contaminated soils are decertified special waste and are therefore included in the municipal solid waste percentage.

Data Sources

Data for the analysis in this report was collected from several sources (see References section). These sources include:

- ❑ County solid waste management plans and solid waste needs assessments. These reports provide historical information (generally from the late 1980s and early 1990s) on estimated waste quantities and waste handling methods in the counties comprising the service area.

- ❑ Data on solid waste disposal capacity and quantities of solid waste disposed from the Illinois Environmental Protection Agency (IEPA). An annual report is published by the IEPA which tracks the landfills in every county in the state, including the amount of waste disposed at the landfills and their remaining capacity. In addition, landfill capacity certification reports submitted by each landfill to the IEPA on an annual basis were reviewed. The landfill data reported to the state provides more up-to-date information on disposal quantities than may be contained in county solid waste plans.

- ❏ Data on solid waste disposal capacity and quantities of solid waste disposed from the Indiana Department of Environmental Management (IDEM), the Michigan Department of Environmental Quality (MDEQ) and the Wisconsin Department of Natural Resources (WDNR). These agencies monitor disposal trends in Indiana, Michigan and Wisconsin, respectively.

- ❏ Data on current recycling rates from the Illinois Environmental Protection Agency. IEPA's annual report provides data reported by each county in the state regarding annual recycling tonnages.

- ❏ Data on county population projections from the Chicago Metropolitan Agency for Planning (formerly Northern Illinois Planning Commission) and the Wisconsin Department of Administration. The population forecasts are utilized in this report for estimating future waste disposal quantities.

In addition, various publications and trade magazines from the waste industry were consulted to secure additional information utilized in this report, such as trends in the number of landfills nationwide. All of the information sources utilized are recognized within the industry as standard, accepted sources of data.

Waste Management in the Service Area

This section of the needs analysis considers trends in the management of waste in the service area. Key findings include the following:

- ❑ Solid waste collection and disposal services are principally provided by private sector companies.
- ❑ Landfilling is the primary means of managing waste generated in the service area.
- ❑ After growing during the late 1980s and early 1990s, diversion of waste through recycling programs appears to have leveled off (refer to Figure 1-3).

History of Waste Management in Lake County

Historically, Lake County has relied on the private sector to collect and dispose of solid waste. Residential waste has generally been collected through a contract between the municipality and private sector waste companies and disposed at the discretion of the waste companies[1]. Likewise, the majority of Lake County commercial and industrial establishments have utilized private companies to collect their refuse.

> *Analysis of collection practices ascertained from the municipal questionnaire and other data collection efforts indicate that approximately 24 percent of the County's residential waste quantities are collected by municipally operated systems and 32 percent by municipally contracted operators. The remaining 44 percent of the residential waste is collected by private haulers under a regulated (permit or license) or unregulated system. Essentially all commercial, industrial, construction and demolition wastes are handled by private haulers.* (Lake County, 1989, Volume I, p. 11)

Lake County has historically relied on locally-available, privately-owned landfills to meet its disposal capacity needs. In the 1989 Solid Waste Management Plan, the County determined that 9 landfills were principally used to dispose of the County's waste. Of the nine landfills, six were located in Lake County (ARF -- now the Countryside Landfill; BFI – now the Veolia ES Zion Landfill; Zion Municipal; Lake Bluff Municipal; Land & Lakes; and, Lake County Grading) and disposed of approximately 85 percent of the County's waste. Of the remaining three landfills, one was located in northern Cook County (Techny), one was located in DuPage County (Mallard Lake) and one was located in Kenosha County, Wisconsin (Pheasant Run). All of these facilities have subsequently closed except for the Veolia ES Zion, Countryside and Pheasant Run facilities.

The County continues to rely on locally-available landfills, and the County's 2004 Plan Update indicates that the majority of the County's waste is disposed at the three remaining landfills:

> *Most of the waste generated in Lake County is taken to three landfills: Countryside Landfill, Onyx Zion Landfill, or Waste Management's Pheasant Run Recycling & Disposal Facility located in the Town of Bristol, Wisconsin.* (SWALCO, 2004, p. 3-30)

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[1] Currently two communities in Lake County provide residential collection services with municipal crews (Lake Bluff and Lake Forest), down from four communities reported in the County's 1988 Needs Assessment study.

The Solid Waste Agency of Lake County (SWALCO) has executed disposal agreements with each of these three landfills, and the County's Solid Waste Management Plan calls for continued use of the three landfills in the future:

> *Maintain contracts with the sanitary landfills serving Lake County to provide for privately-owned-and-operated landfill disposal capacity.* (SWALCO, 2004, p.3-33)

Recycling has increased in importance as a method of managing waste in Lake County. In 1988, as the County was developing its Solid Waste Management Plan, the County reported that less than 1 percent of its waste was recycled[2]:

> *In addition to landfills, a very small amount of municipal waste (estimated at less than 1%) is currently being recycled and composted.* (Lake County, 1989, Volume II, Appendix A-1, p. 22)

Based on the latest data reported by the County to IEPA, the level of recycling increased to 55 percent in 2007 (although the County's draft 2009 Plan Update estimated 2008 recycling at 38 percent). Recycling services are typically provided through private companies, although SWALCO operates a Household Chemical Waste Collection Program.

Despite the advances that have been made in recycling practices, a significant amount of waste must still be disposed in landfills. Though the Lake County Solid Waste Management Plan includes a waste reduction component aimed at reducing the amount of waste that must ultimately be disposed of, the Plan (as updated) also acknowledges the importance of landfilling as a method of managing waste which is not diverted through recycling:

> *Fifteen years after adoption of the Plan, landfilling continues to be the predominant method of waste disposal in Lake County.* (SWALCO, 2004, p. 3-29)

Landfills play an important role in supporting recycling programs. The local surcharge fees and host fees paid by landfills can be used to subsidize the cost of recycling programs, which are often more expensive on a per ton basis than landfill disposal of waste. Based on an analysis of recycling data reported by the IEPA, counties that have a landfill surcharge in place have recycling rates about double that of counties that do not have a surcharge[3]. The IEPA recognizes the importance of local surcharge funds for paying for recycling programs and other solid waste initiatives of local government:

> *Some of these expenditures have become important sources of revenue for others, supporting various solid waste and recycling programs. State law allows local governments to charge landfills a solid waste management fee of $1.27 per ton on wastes landfilled within their borders.* (IEPA, 2001, p. 5)

> *An issue for local commerce is the closure of any of these active landfills...Landfill closures also have an unfortunate resultant effect on revenues available to implement local recycling and environmental education programs.* (IEPA, 2008, p. viii)

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[2] The County's plan was developed prior to the implementation of curbside recycling programs and landscape waste diversion programs.

[3] IEPA, 2008. The average reported recycling rate for counties or other jurisdictions which collect a local surcharge is about 27 percent; the average reported rate for counties without a landfill or a surcharge is about 13 percent.

History of Waste Management in Other Counties in the Service Area

The waste management infrastructure in the other counties of the service area is similar to that in Lake County. Historically, most waste services have been provided by the private sector. Although there have been a number of publicly-owned landfills in the past (see Table 1-1), many were smaller, local facilities which have closed. The landfills operating today are primarily privately-owned, larger, regionally-oriented facilities. Hence, the national trend which has seen the replacement of the local, public landfill with the regional, private landfill has taken hold throughout the service area.

TABLE 1-1. STATUS OF PUBLICLY-OWNED DISPOSAL FACILITIES IN SERVICE AREA

Facility	County	Status	Year Permitted
Northwest Incinerator	Cook	Closed	1972
Winnetka Municipal	Cook	Closed	1974
Lake Bluff Municipal	Lake	Closed	1974
Zion Municipal	Lake	Closed	1976

Source:
1. IEPA annual capacity reports, 1987-2007.

The trend toward regional facilities stems from a number of factors, including the promulgation of stringent federal and state regulations and consolidation (i.e., mergers and acquisitions) within the waste industry. The IEPA reports, for instance:

> *Landfills that were operating when the Subtitle D rules were implemented were forced to choose between complying with the stricter regulations or closing in the prescribed manner...Whether it was the effect of tougher Subtitle D rules, the result of other business considerations, or a combination of both, one thing is clear: between 1992 and 1994[4], the number of active landfills in Illinois fell from 106 to 59 - a drop of 44 percent...(IEPA, 2002(b), p. 3)*

Similarly, the Environmental Industry Association, a waste industry trade group, reports:

> *The dramatic change in the number of landfills in the U.S. over the last 10 years is primarily attributable to the promulgation and implementation of the federal MSW landfill criteria (i.e., RCRA Subtitle D) which became effective in October 1991. (Repa, 1999)*

The new landfill regulations have increased the cost of developing and operating a modern landfill. The IEPA reports that:

> *Developing a landfill requires enormous investments in land and equipment totaling millions of dollars, plus engineering expenses, fees to state and local governments, taxes, typical operating costs and additional millions set aside for post-closure care. (IEPA, 2005, p. 3)*

[4] Key compliance deadlines occurred during this period.

The high cost of developing landfill facilities has led many jurisdictions, including Lake County, to rely on the private sector to develop needed disposal infrastructure. The County initially contemplated developing a publicly-owned landfill in the 1989 Solid Waste Management Plan. This strategy was re-evaluated in the 1994 Plan Update, however, at which time the County determined that it would rely on the private sector to develop needed landfill capacity:

> *Agency staff have monitored the activity of landfills serving Lake County. Staff have met with owners of the three major facilities serving the County (USA Waste, BFI, and Waste Management) to determine their future plans concerning site expansion. The Agency Board reevaluated the issue of public vs. private ownership of landfills during preparation of the Solid Waste System Model Report. In the five years since adoption of the Plan, new RCRA Subtitle D regulations have been adopted that increase closure monitoring requirements from the five years assumed in the Plan to thirty years. A private entity is better able to manage this increased closure responsibility than a governmental entity. (SWALCO, 1994, p.4-24)*

The County's decision to rely on private sector landfills for disposal capacity has been adopted by numerous other planning agencies in Illinois. Indeed, the disposal infrastructure in Illinois is largely privately-owned and operated:

> *Demands for capital and increasing technology requirements are among the reasons for the increasing privatization of the waste industry. Of the 51 active landfills profiled in this report that accepted waste for disposal, 44 (86 percent) are privately owned and 47 (92 percent) are privately operated. (IEPA, 2003, p.2)*

Inspection of the Annual Disposal Capacity reports published by the IEPA and WDNR shows that since 1987, there have been as many as 23 permitted landfills in the proposed service area operating at a given time. By the beginning of 2009, there were only 5 permitted landfills with remaining capacity in the service area (see Figure 1-2). One of these landfills, the CID Landfill in Cook County, had only negligible remaining capacity. Based on the volumes of waste received in 2008, the 5 landfills in the service area have a combined remaining life of 6 years as of the date of this report. As noted previously, the 3 landfills principally used by Lake County (Veolia ES Zion, Countryside and Pheasant Run) have a combined remaining life of approximately 6 ½ years as of the date of this report.

Historically, landfilling has been the primary means of managing waste generated in the service area. Table 1-2 shows that during the period 1988-1992, about 82 percent of the waste generated within the service area was landfilled, with about 12 percent recycled, 2 percent composted, and less than 4 percent incinerated. Although recycling has attained a greater role in managing waste, it has leveled off in recent years (refer to Figure 1-3 later in this section) and the majority of solid waste must still be disposed in landfills. Note that the data shown in Table 1-2 represents *total waste*, as opposed to *municipal waste*[5].

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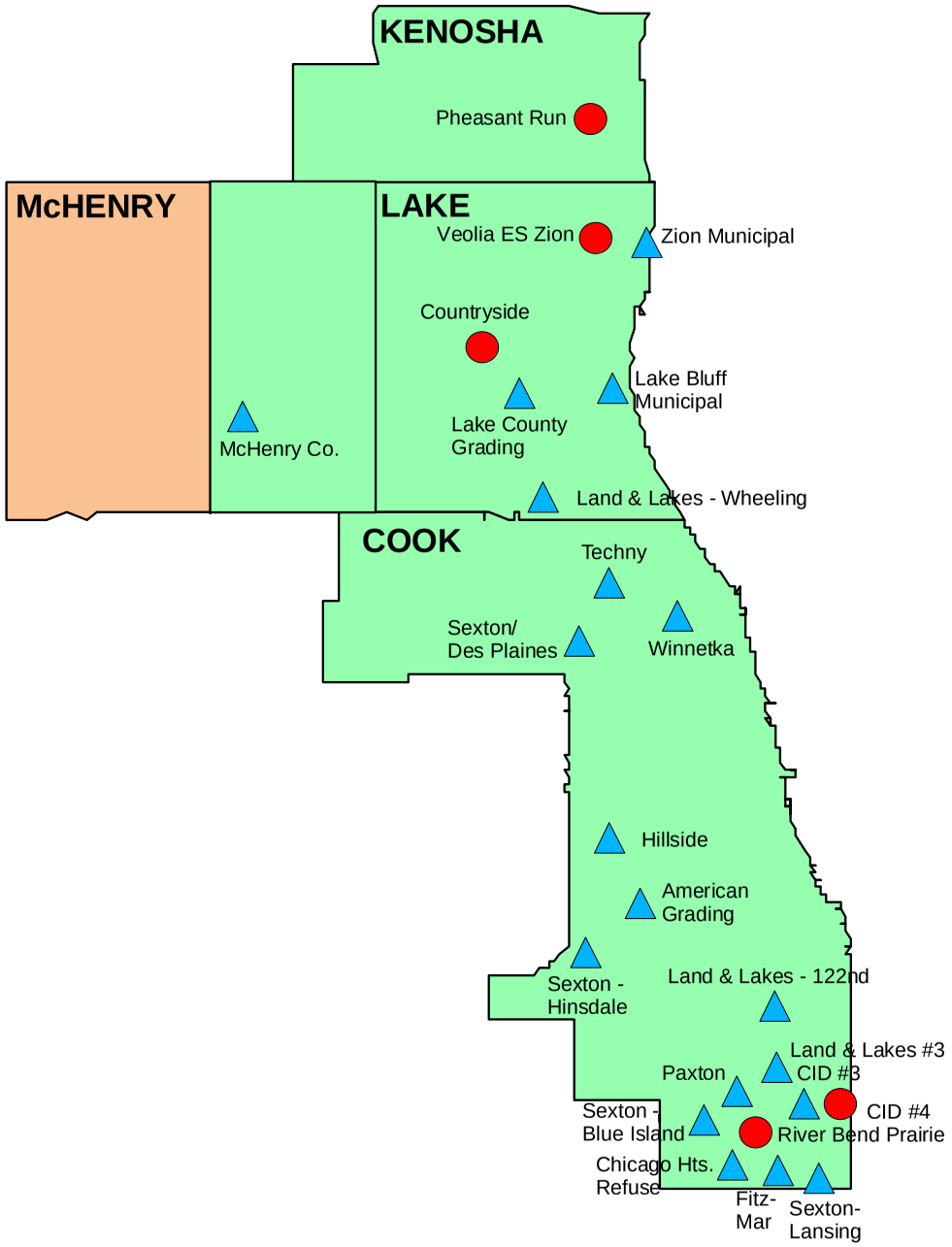
[5] Municipal waste is a subset of total waste and includes only a portion of industrial waste. In 1994, the IEPA issued a guidance letter to solid waste planners addressing the calculation of municipal waste recycling rates. The guidance states that, for the purpose of determining county recycling rates, municipal waste would include industrial lunchroom and office waste but not other industrial waste. This was done apparently to make achieving the State's recycling goal of 25 percent more difficult, since large amounts of industrial waste have been recycled by industry for years. The distinction between municipal and total waste is artificial, however, for the purposes of this report, since industrial waste does enter the regional waste system and must be managed. Hence, unless otherwise noted, this report will refer to total waste recycling as opposed to municipal waste recycling.



LANDFILL CLOSURES IN SERVICE AREA

Open Landfill

Closed/Inactive Landfill

Notes:

1. Sources: IEPA Annual Capacity Reports, 1987-2008; WDNR Solid Waste Landfill Tonnage and Capacity Reports, 1992-2008.
2. As many as 23 permitted landfills have received waste in a given year since 1987 (excluding landfills in Wisconsin).
3. Hillside Landfill ceased accepting waste in February, 2008.

FIGURE 1-2

TABLE 1-2. HISTORICAL MANAGEMENT OF WASTE IN SERVICE AREA (1988-1992)

Jurisdiction	Landfilled (tpy)	Recycled (tpy)	Composted (tpy)	Incinerated (tpy)	Total (tpy)
Cook County					
Chicago	3,271,540	358,915	700	286,160	3,917,315
SSMMA	581,089	46,911	0	0	628,000
SWANCC	1,384,522	268,120	8,185	11,998	1,672,825
WCCSWA	756,018	245,337	49,064	4,770	1,055,189
Lake County	520,202	33,491	116,664	4,000	674,357
McHenry County	189,314	48,326	1,397	1,149	240,186
Total	6,702,685	1,001,100	176,010	308,077	8,187,872
% of Total	81.9%	12.2%	2.2%	3.8%	100.0%

Notes:
1. These figures are based on total waste as opposed to municipal waste.
2. Data were collected from Solid Waste Plans or Solid Waste Needs Assessments, and from Northeastern Illinois Planning Commission, *Local Government Planning for Municipal Waste Management in Northeastern Illinois*, August, 1993. These reports were generally prepared during the period 1988-1992 and represent historical estimates.
3. SSMMA = South Suburban Mayors and Managers Association; SWANCC = Solid Waste Agency of Northen Cook County; WCCSWA = West Cook County Solid Waste Agency; tpy = tons per year.
4. The following jurisdictions did not differentiate between total waste and municipal waste: Chicago and Lake County.
5. Only a portion of McHenry County lies within the service area.

In summary, the proposed service area has historically disposed of the vast majority of its waste in landfill facilities, many of which have closed as the result of new landfill regulations. The national trend toward larger, regional facilities is also evident in the area. These facts support the need for the proposed expansion of the Veolia ES Zion Landfill.

Future Management of Waste in the Service Area

Landfilling will continue to be the dominant method of managing waste from the service area in the future, even as counties achieve the aggressive recycling goals contained in their solid waste management plans (see Table 1-3). Currently, the counties in the service area estimate that they are diverting approximately 45 percent of their waste from disposal[6]. This means, however, that 55 percent of generated waste would still require disposal in landfills.

TABLE 1-3. SUMMARY OF CURRENT AND GOAL RECYCLING RATES

County	Total Waste Recycling	
	Current Estimated Rate	Plan Goal
Cook County		
Chicago (see Note 5)	55 %	55 %
South Suburban Mayors and Managers Association	15 %	25 %
Solid Waste Agency of Northern Cook County	38 %	38 %
West Cook County Solid Waste Agency	21 %	41 %
Lake County	47 %	50 %
McHenry County (only a portion in service area)	27 %	54 %
Kenosha County	32 %	32 %
Weighted Average (see Note 4)	46 %	50 %

Notes:
1. Recycling rates refer to total (not municipal) waste.
2. Current estimated recycling rates for Illinois jurisdiction based on municipal waste recycling data reported to IEPA and industrial waste recycling data from county solid waste management plans. Value for Kenosha County is a statewide recycling rate for Wisconsin as reported in Biocycle, The State of Garbage in America, December, 2008. County-level recycling rates are not tracked by Kenosha County or WDNR.
3. Recycling goals calculated by adding municipal waste recycling goal in solid waste management plans to historical industrial waste recycling levels.
4. The average diversion rate is weighted based on the amount of waste estimated to be generated by each jurisdiction. As discussed later in this report, waste disposal quantities appear to have increased, which may result in the recycling rates being overstated.
5. The City of Chicago's goal diversion rate based on recycling goals in its Plan is estimated to be 40 percent. Because the estimated current diversion rate exceeds the goal diversion rate, the goal rate was set equal to the current rate.
6. As noted previously, the draft 2009 Plan Update for Lake County estimated 2008 recycling rates of 38 percent (for municipal waste) and 36 percent (for total waste). The draft 2009 Plan Update has a revised recycling goal of 45 percent.

[6] Current waste diversion is estimated by individual counties, many of which have not updated historical data on the quantity of waste generated and disposed. As is discussed later in this report, waste disposal quantities have in fact increased, which may result in the overall recycling rate being overstated by counties. In 2007, IEPA reported a statewide diversion rate of 39.3 percent based on data reported by individual counties. A recent statewide waste generation study commissioned by the Illinois Department of Commerce and Economic Opportunity and the Illinois Recycling Association, however, estimates 2007 statewide diversion at 19 percent. Note also that the high recycling rate reported by the City of Chicago, combined with the City's large population, contributes to a high average recycling rate reported within the service area.

Diversion rates also appear to have leveled off in the service area and in Illinois (refer to Figure 1-3)[7]. Any future growth in diversion rates will necessitate a continued shift in public attitudes and a significant increase in public expenditures to pay for additional recycling programs. Obtaining such funding will present significant challenges given the fiscal constraints faced by all levels of government. Landfills such as the Veolia ES Zion Facility may provide a source of funding for continued recycling activities (through local landfill surcharge payments and host fee payments to local jurisdictions).

Lake County has recognized that landfilling will continue to be the principal method of waste disposal in the future:

> *Reliance on landfills for the ultimate disposal of solid waste continues. (SWALCO, 2004, p.2-11)*
>
> *Fifteen years after adoption of the Plan, landfilling continues to be the predominant method of waste disposal in Lake County. (SWALCO, 2004 p.3-29)*
>
> *Based on current trends, it is expected to remain the predominant waste disposal method within Illinois and Lake County for at least the next five years. (SWALCO, 2004, p.3-31)*

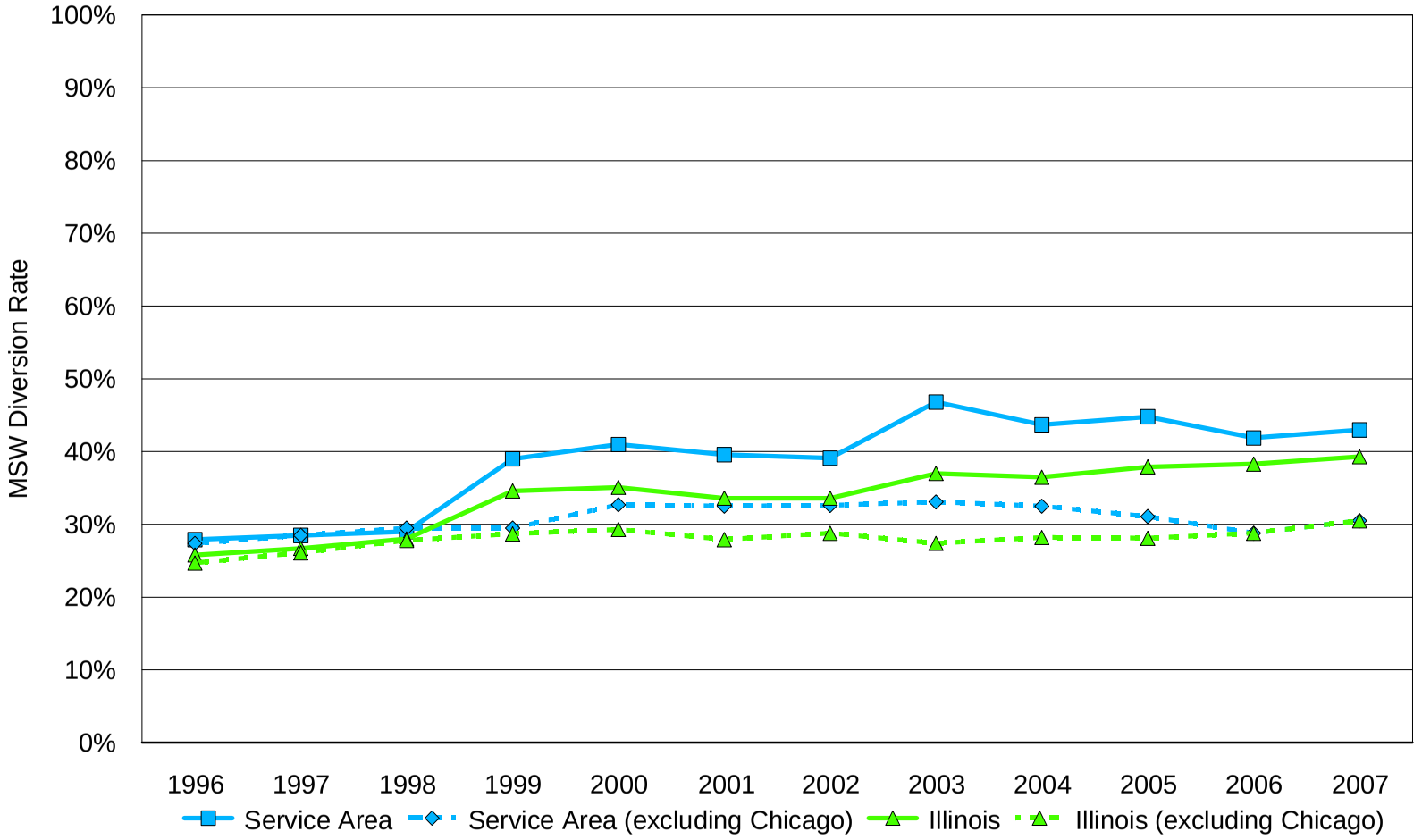
The County's Solid Waste Management Plan, as updated, recommends that the County secure additional long-term landfill capacity (i.e., 20 years). The Plan also recommends that disposal capacity be maintained at the three landfills (Veolia ES Zion Landfill, Countryside, and Pheasant Run) that SWALCO has executed disposal agreements with.

> *Maintain contracts with the sanitary landfills serving Lake County to provide for privately-owned-and-operated landfill disposal capacity. (SWALCO, 2004, p.3-33)*
>
> *Acquire additional landfill capacity for Lake County to meet waste disposal needs for a twenty (20) year period. (SWALCO, 2004, p.3-33)*

The proposed expansion of the Veolia ES Zion Landfill will help the County to fulfill these goals of the County's Solid Waste Management Plan.

[7] Note that Figure 1-3 presents diversion data reported by counties to IEPA. Counties typically report diversion of municipal solid waste, not total solid waste.

REPORTED MUNICIPAL SOLID WASTE DIVERSION RATES



Source:
1. IEPA Annual Reports, 1996 - 2007.

Notes:
1. Diversion rates as reported by Illinois counties to IEPA. Diversion rates are for municipal solid waste, not total waste.
2. Increase in diversion rates for 1999 and 2003 due primarily to increase reported by City of Chicago.
3. Service area data is for Illinois counties and does not include Kenosha County, Wisconsin.

FIGURE 1-3

Waste Disposal in the Service Area

This section of the needs analysis discusses the amount of waste generated by the service area and that requires disposal. Key findings include the following:

- ❏ The service area is experiencing growth in population, which will lead to greater quantities of waste that must be managed.

- ❏ During the period 2009-2022 (the analysis period which includes the projected operating period of the existing and expanded Veolia ES Zion Landfill), the service area will dispose of a projected 120,880,000 tons of waste (refer to Appendix E.2).

Service Area Disposal Quantities

In order to address the need for the proposed expansion of the Veolia ES Zion Landfill, it is important to project the quantities of waste generated by the service area that will require disposal up to and including the period in which the proposed Facility operates. The proposed landfill will provide disposal capacity through 2022 (inclusive of existing capacity and expansion capacity), assuming the Facility receives an average of 3,100 tons of waste per day. Because the data on disposal capacity is for January 1, 2009, an analysis period of 2009 through 2022 was selected.

In order to estimate the amount of waste that will require disposal during this period, projections of future population are multiplied by per capita waste disposal rates for each year during the period of analysis (refer to Appendix E.2). The population estimates for this calculation were obtained from the Chicago Metropolitan Agency for Planning (CMAP; formerly Northeastern Illinois Planning Commission or NIPC) and the Wisconsin Department of Administration (WDA; for Kenosha County). The per capita waste disposal rates were calculated based on the quantities of waste disposed in landfills for the period 1996 through 2008 (refer to Appendix E.3). This recent landfill data provides more current estimates of per capita disposal rates than may be contained in county solid waste management plans, many of which were prepared in the late 1980s and early 1990s.

The service area is projected to experience population growth over the forecast period, which will add to the quantities of waste that must be managed. Based on the projections prepared by CMAP and WDA, population within the service area is projected to increase by 7 percent during the period 2009-2022, rising from 6,702,000 in the year 2009 to 7,141,000 in the year 2022 (refer to Appendix E.2).

Appendix E.3 shows detailed calculations of the per capita waste disposal rates for the metropolitan area and counties in the service area. The calculated per capita waste disposal rates include residential waste, commercial waste, construction/demolition waste, and non-hazardous industrial waste. The waste disposal rates provide a measure of the amount of waste which is not currently being diverted and which must be disposed of in a landfill or other disposal facility.

The disposal rates in Appendix E.3 were multiplied by the population projections from CMAP and WDA to estimate the future quantities of waste which will require disposal by the service area, assuming current waste diversion rates remain unchanged. The projections of future disposal quantities are contained in Appendix E.2. It is projected that the service area will require disposal of 8,359,000 tons of waste in 2009, an amount which is estimated to increase to 8,910,000 tons in 2022 due to population growth alone. Over the period 2009 to 2022, the

total amount of waste requiring disposal is projected to be approximately 120,880,000 tons, or about 30,190 tons per day (tpd, stated on a 5.5 day per week basis). These projections of waste quantities are based on 2008 disposal rates, which were lower than in recent prior years due to the recession.

The projected increase in tonnage stems solely from the increase in population forecast for the service area during the period 2009-2022. Per capita disposal rates were conservatively assumed to remain constant during this period. Table 1-4 and Figure 1-4 show that, except for a decline in waste quantities in 2007-08 (likely due to the sudden slowdown in the housing market and the recession) and in 2002-03, waste disposal quantities generally increased between 1996 and 2006 (refer also to Appendix E.3).

TABLE 1-4. HISTORICAL TRENDS IN WASTE DISPOSAL QUANTITIES

Year	Chicago Metro-Area		State of Illinois	
	Population	Tons Disposed	Population	Tons Disposed
1996	7,918,882	10,809,523	12,023,817	14,972,772
1997	8,003,170	9,697,258	12,122,686	14,748,797
1998	8,087,453	11,097,952	12,221,555	16,330,124
1999	8,171,741	11,613,278	12,320,424	17,210,105
2000	8,256,027	12,067,887	12,419,293	16,879,536
2001	8,340,315	12,611,677	12,518,162	18,025,852
2002	8,424,601	12,364,946	12,617,031	17,619,832
2003	8,508,886	11,666,535	12,715,900	17,719,442
2004	8,593,172	12,969,129	12,814,769	18,170,951
2005	8,677,461	12,903,725	12,913,639	18,320,447
2006	9,055,467	13,337,301	13,012,508	18,550,831
2007	9,142,306	12,402,518	13,111,377	17,929,316
2008	9,290,166	11,532,904	13,210,246	16,814,867
Growth: 1996-2006	1.4%	2.1%	0.8%	2.2%

Notes:
1. Refer to Appendix E.3.
2. Chicago Metro-Area Population includes population of Winnebago County beginning in 2006 as discussed in Appendix E.3.

The total tons of waste disposed by the Chicago metro area increased by about 2 percent annually between 1996 and 2006. The quantity of waste disposed by the State of Illinois also increased by about 2 percent annually during the same period. Population within the Chicago metro area and within the State of Illinois is estimated to have increased by approximately 1 percent annually between 1996 and 2006. These data indicate that (with the exception of certain years in which the economy slows), per capita disposal rates have been growing. In either case, the amount of waste projected to be disposed by the service area is significantly greater than the capacity of the proposed expansion of the Veolia ES Zion Landfill.

HISTORICAL TRENDS IN WASTE DISPOSAL QUANTITIES

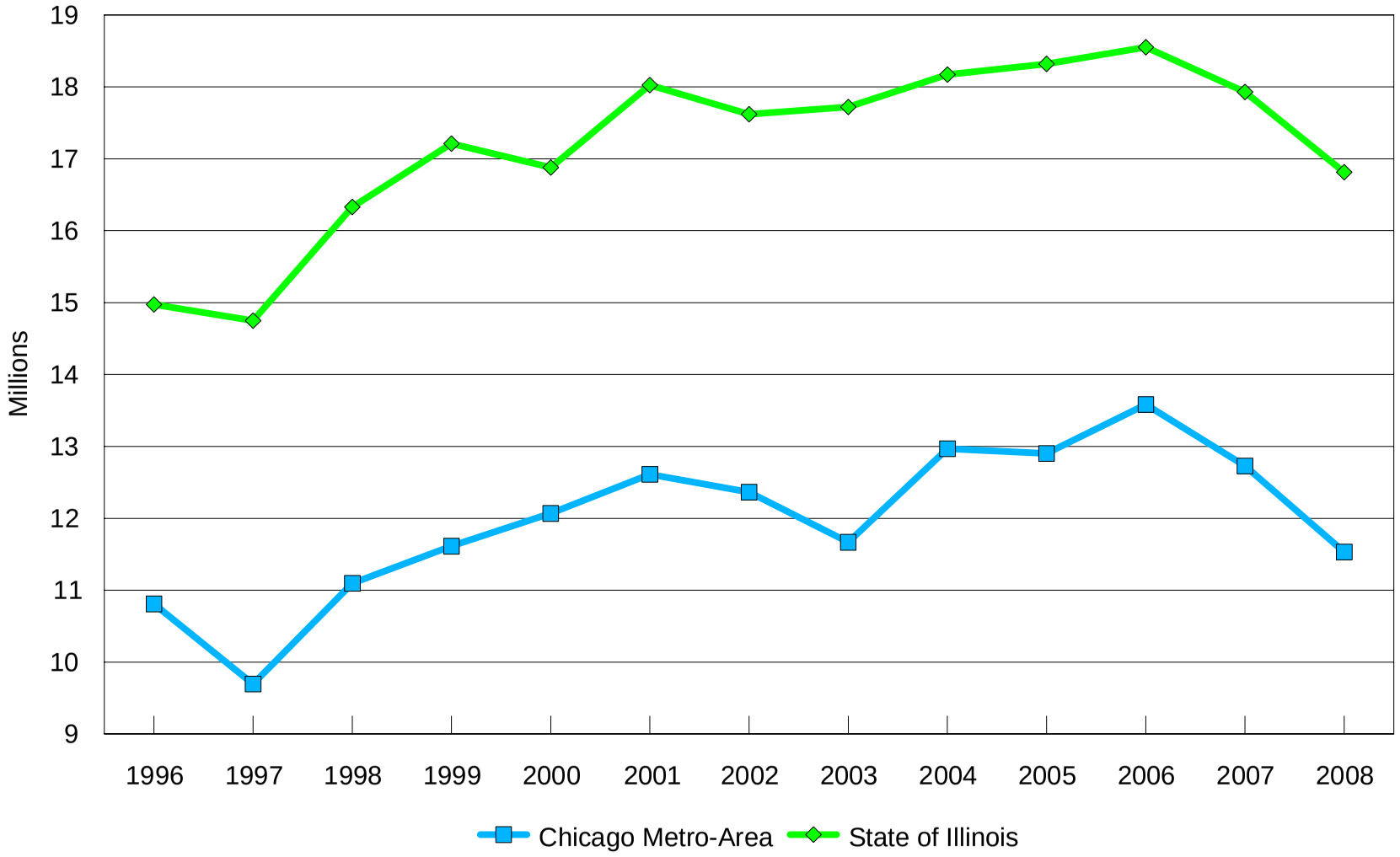


FIGURE 1-4

Service Area Disposal Capacity

In the previous section of this needs report, the quantity of waste generated by the service area and that require disposal was computed. This quantity of waste requiring disposal represents the "demand" for solid waste disposal capacity. In assessing the need for the additional disposal capacity that the proposed expansion of the Veolia ES Zion Landfill will provide, it is necessary to compute the existing "supply" of disposal capacity available to the service area. The analysis of disposal capacity was performed both for the service area and on a regional basis which takes into account disposal facilities located outside the service area. Key findings include the following:

- ❏ There are only 5 landfills located within the service area, and all have limited remaining capacity. As of the date of this report, service area landfills had approximately 6 years of combined capacity remaining. The three local landfills historically utilized by Lake County had approximately 6 ½ years of remaining capacity (refer to Appendix E.5).

- ❏ Regional landfills also do not have sufficient capacity to meet the long-term disposal needs of the service area when considering the disposal quantities of the other areas they serve.. The regional analysis included a larger number of landfills -- 37 facilities -- of which two have restrictions on waste acceptance and are not available to the service area. At the regional level, permitted landfill capacity will be exhausted by early 2022, approximately 12 years from the date of this report (refer to Appendix E.5). The vast majority of this disposal capacity is located 50 miles or more from Lake County, and Lake County has no permitted transfer stations to access that distant disposal capacity. The convenient location of the proposed expansion will save on fuel consumption and also help communities to contend with waste disposal cost increases stemming from higher fuel costs.

Service Area Disposal Capacity

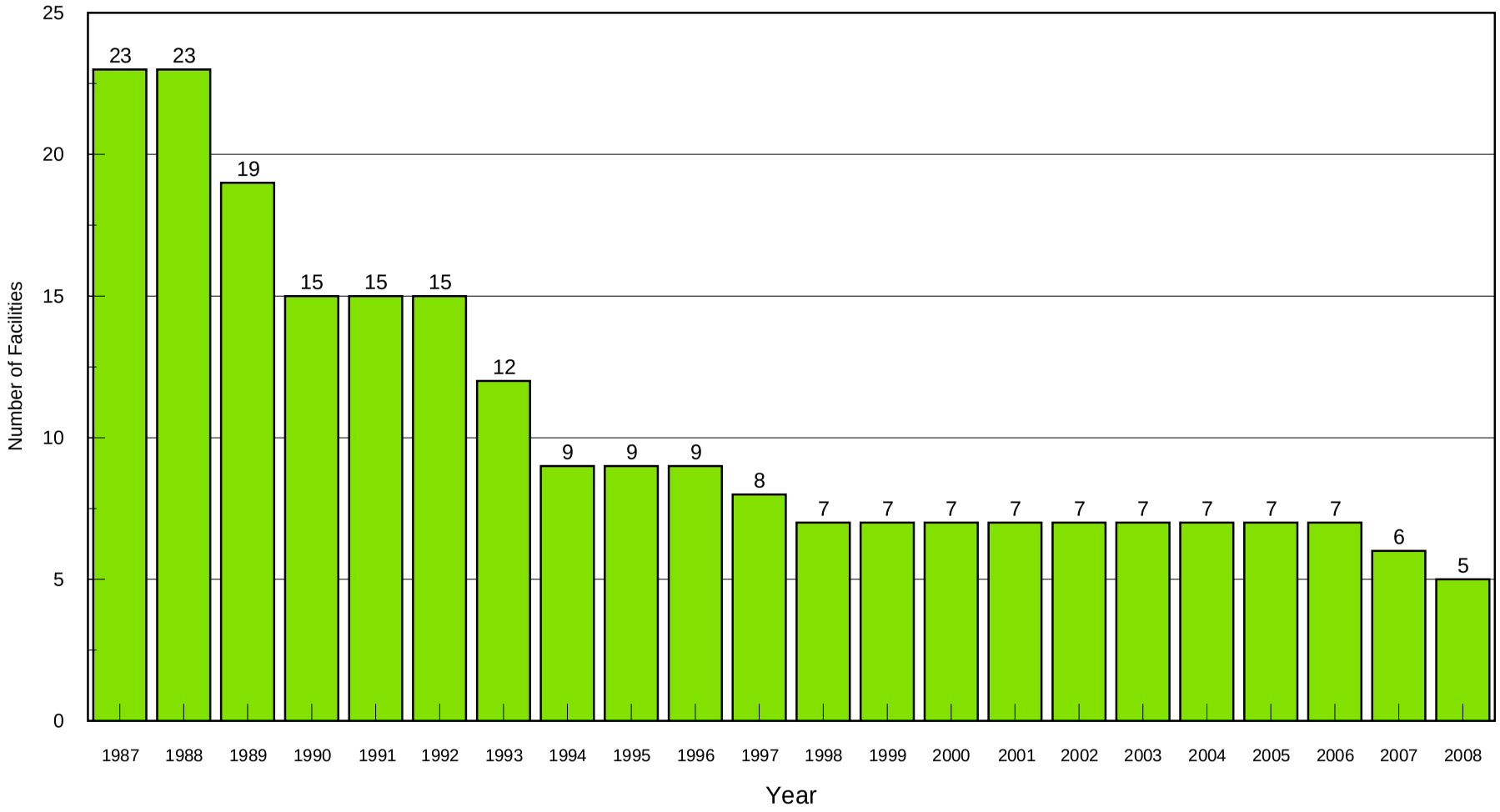
There are a number of trends within the service area that support the need for the proposed expansion of the Veolia ES Zion Landfill:

- ❏ The number of landfills located within the service area has declined by nearly 80 percent since 1987 (refer to Figure 1-5). Waste must therefore be transported increasingly greater distances for disposal.

- ❏ As of January 1, 2009, there were 5 permitted landfills operating within the service area. One of these facilities (CID #4) reported to IEPA that it had a minimal amount (12,000 cubic yards) of remaining capacity as of January 1, 2009.

- ❏ The capacity deficit within the service area over the analysis period 2009-2022 is approximately 104,282,000 tons, significantly less than the proposed Expansion capacity of 12,298,000 tons.

NUMBER OF LANDFILLS IN SERVICE AREA



Sources:
1. IEPA Annual Capacity Reports, 1987-2008.
2. WDNR Landfill Tonnage and Capacity Reports, 1991-2008.

FIGURE 1-5

- ❑ As of the date of this report, the landfills in the service area had approximately 6 years of combined capacity based on reported 2008 waste acceptance rates. The 3 service area landfills used by Lake County (Veolia ES Zion Landfill, Countryside Landfill and Pheasant Run Landfill) had approximately 6 ½ years of combined capacity based on reported 2008 waste acceptance rates. As noted previously, 2008 disposal tonnages were lower than in prior years due to the recession.

- ❑ Service area landfills do not have sufficient capacity to meet the long-term needs of the service area or Lake County. As indicated previously in this report, the Lake County Solid Waste Management Plan recommends that the County obtain 20 years of disposal capacity.

As of January 1, 2009, the 5 landfills within the service area had an aggregate remaining capacity of 10,888,000 tons. In December, 2009, the Pheasant Run Landfill received approval for an expansion of 5,710,000 tons. As noted previously, the service area is projected to require disposal of 120,880,000 tons of waste during the analysis period 2009-2022 This implies a capacity deficit for the service area of 104,282,000 tons over the period 2009-2022:

-104,282,000 tons = 10,888,000 tons + 5,710,000 tons - 120,880,000tons

The expanded Veolia ES Zion Landfill will have a capacity of approximately 12,298,000 tons over this analysis period and will therefore fulfill a portion of the need for disposal capacity within the service area.

Regional Capacity Considerations

The 5 landfills within the service area handled approximately 2,369,000 tons of waste in 2008. Based on the waste projections developed for the service area (refer to Appendix E.2), the service area disposed of approximately 8,316,000 tons of waste in 2008. This indicates that the service area is a net exporter of waste.

Because waste is exported from the service area (principally from the City of Chicago, Cook County and McHenry County), an evaluation of landfill capacity serving a larger regional area, consisting of the service area and the Chicago metropolitan area (refer to Appendix E.4), was also performed. By this analysis, a total of 37 landfills were identified in Illinois, Indiana, Michigan and Wisconsin (see Figure 1-6). Two of the landfills, DeKalb County and Prairie View RDF, are restricted to use by DeKalb County and Will County, respectively, and are not available to the service area.

The non-restricted facilities had an estimated aggregate remaining capacity of 239,320,000 tons as of January 1, 2009. Subsequent to January 1, 2009, the Pheasant Run Landfill received approval for an expansion of approximately 5,710,000 tons and the Newton County Landfill (in Indiana) received approval for an expansion of approximately 18,341,000 tons. The non-restricted landfills received approximately 17,499,000 tons of waste in 2008 (refer to Appendix E.4). However, as noted earlier, disposal quantities experienced a decline in 2007 and 2008, likely due to the impacts of the housing downturn and recession. The non-restricted regional landfills accepted an average of 19,686,000 tons of waste over the five-year period 2004-2008.

Based on the landfill capacity and five-year average throughput data cited above, regional disposal capacity is projected to be exhausted by early 2022, or approximately 12 years from the date of this report.

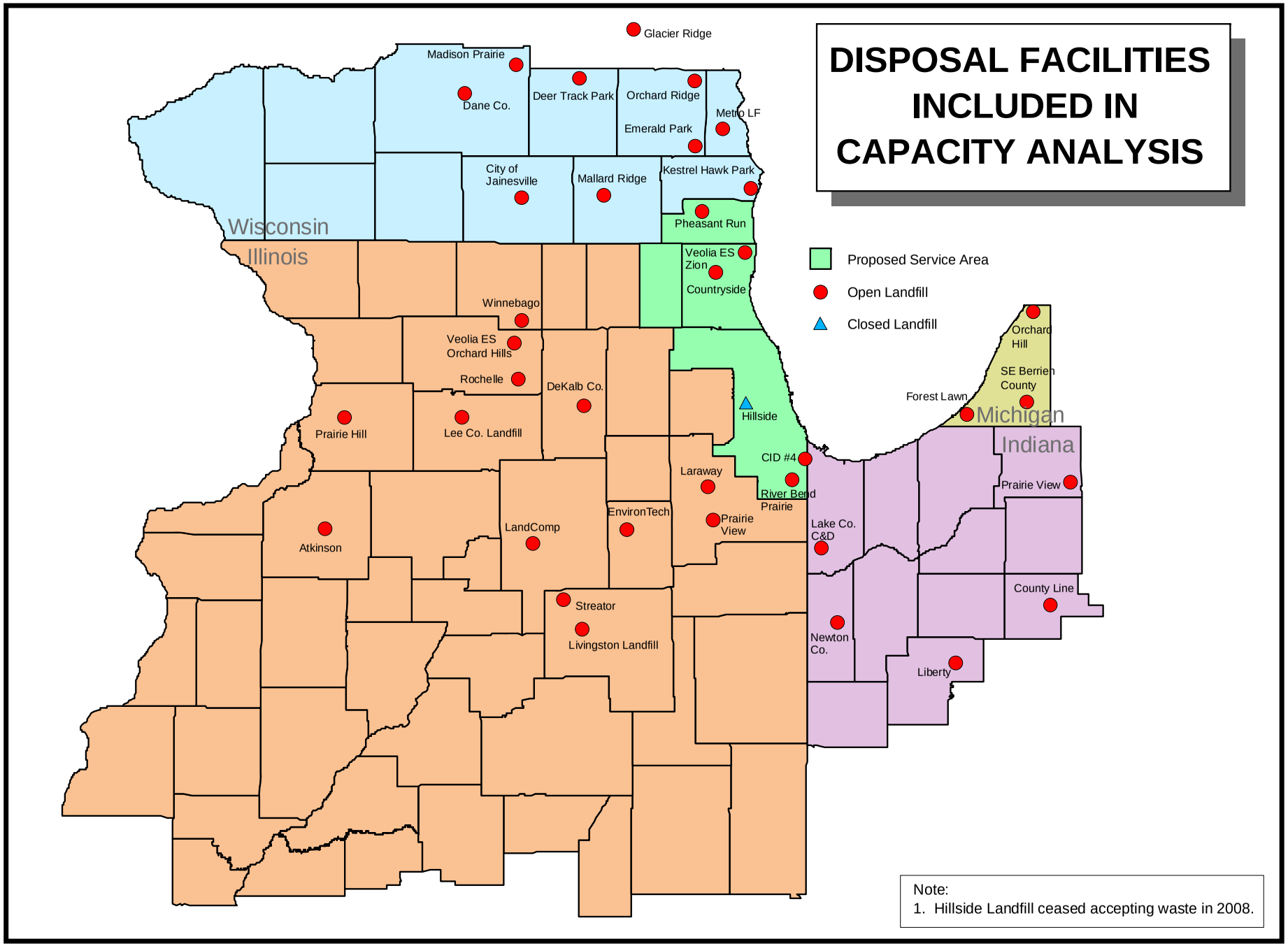

DISPOSAL FACILITIES INCLUDED IN CAPACITY ANALYSIS
Glacier Ridge
Madison Prairie
Dane Co.
Deer Track Park
Orchard Ridge
Metro LF
Emerald Park
City of Jainesville
Mallard Ridge
Kestrel Hawk Park
Pheasant Run
Wisconsin
Illinois
Veolia ES Zion
Countryside
Winnebago
Veolia ES Orchard Hills
Rochelle
DeKalb Co.
Prairie Hill
Lee Co. Landfill
Hillside
Orchard Hill
SE Berrien County
Forest Lawn
Michigan
Indiana
CID #4
Laraway
River Bend Prairie
Prairie View
EnvironTech
LandComp
Atkinson
Lake Co. C&D
County Line
Streator
Livingston Landfill
Newton Co.
Liberty
Proposed Service Area
Open Landfill
Closed Landfill
Note:
1. Hillside Landfill ceased accepting waste in 2008.

FIGURE 1-6

It should be noted that the vast majority (93 percent) of this regional disposal capacity is located more than 50 miles from Lake County. Because Lake County does not have any permitted transfer stations, much of the regional landfill capacity is not available to Lake County.

Planning jurisdictions have recognized that it takes extended periods of time to develop new landfill capacity. The U.S. EPA, for instance, indicates that long lead times are required to plan and develop landfills:

> *Careful planning by the developers of new or expanding landfills is important. A large amount of money and a long period of time are required to build a landfill. Some of the cost elements and time periods are listed below:*
>
> • *siting, design and construction: 3-10 years*. (U.S. EPA, 1995, p. 9-11)

Counties in Illinois have also acknowledged the extended periods of time to bring on new landfill capacity. The solid waste management plan for Lee County, for instance, indicates that it can take as much as 10 years to develop new landfill capacity:

> *Historical experience in Illinois indicates that it can take from three to ten years to site, permit and develop new landfill capacity.* (Lee County, 2003).

The IEPA has also stated in annual landfill capacity reports that siting and permitting new landfill capacity is an extended process. Historical landfill development experience in Illinois suggests that it can take long periods of time to develop disposal capacity. The previous expansion of the Zion Landfill, for example, took 9 years to complete (including property acquisition, litigation, siting and permitting) before waste could be accepted. Will County, as another example, adopted a solid waste management plan in 1991 that called for the development of an in-county landfill. Prairie View RDF, the facility developed to fulfill the plan, commenced operations in 2004, 13 years later. The Rochelle Municipal Landfill has sought to expand since 1995 (15 years) and has yet to secure final permitting approval. On average, it takes about 9 years to develop new landfill capacity in Illinois.

The proposed expansion of the Veolia ES Zion Landfill will provide needed additional disposal capacity to communities in the service area[8]. This is consistent with prudent solid waste management planning. The Illinois Solid Waste Planning and Recycling Act, which required every county in Illinois to develop a long-term solid waste management plan, contemplates a 20-year planning horizon:

> *Each waste management plan shall contain, at a minimum, the following provisions:*
>
> *A description of the facilities and programs that are proposed for the management of municipal waste generated within the county's boundaries during the next 20 years, including, but not limited to their size, expected cost and financing method.* (415 Illinois Compiled Statutes 15/4)

Moreover, plans are to be updated every five years and counties have recognized that continuous efforts will have to be made to secure long-term disposal capacity on an on-going basis. Ogle County, for instance, included in the Ten-Year Update to its solid waste management plan a goal of maintaining at least 20 years of disposal capacity:

---

[8] Because of the large quantities of waste disposed by the service area, the proposed expansion cannot meet the entire long-term needs of the service area.

> *The County will continue to implement programs and policies that address two primary areas: waste reduction and final disposal. Waste reduction includes source reduction, toxicity reduction, recycling, reuse and landscape waste management. Final disposal includes maintaining long-term (at least 20 years) disposal capacity for managing that portion of the waste stream that cannot be reduced or recycled.* (Ogle County, 2003)

Lake County also included a goal of providing for 20 years of additional disposal capacity in its 10-year plan update:

> *Acquire additional landfill capacity for Lake County to meet waste disposal needs for a twenty (20) year period.* (SWALCO, 2004, p.3-33)

Other states have indicated that developing long-term disposal capacity is an important component of sound solid waste management planning. In Indiana, for instance, the evaluation of need for landfills is based on disposal projections for a 20-year period (329 Indiana Administrative Code 10-11-7). California planning law established a goal of providing a minimum of 15 years of on-going landfill capacity:

> *AB939 established another important goal for all California counties: provide at least 15 years of ongoing landfill capacity. At a rate of 22 million tons per year, this means that in the year 2000 we will have to identify landfill capacity, statewide, for 330 million tons of solid waste...And, of course, there is the next 15 years, and the next, and so on.*
>
> *Today, 21 of the state's 58 counties, having 41 percent of the population, will exhaust their disposal capacity within 15 years. Of these, 17 have 8 years or less capacity. It takes 7 to 10 years to plan, design and permit a new landfill. Recognizing this problem, the IWMB has worked with other concerned agencies to expedite siting and streamline the permit process, while still protecting the environment. (CIWMB, Beyond 2000: California's Continuing Need for Landfills)*

The State of Washington indicated in its statewide solid waste management plan that counties should plan for 20 years of disposal capacity:

> *Local governments should show that the solid waste management systems proposed in their comprehensive solid waste management plans will provide dependable handling, processing and disposal of solid waste throughout their plans' 20-year period. (Washington State Department of Ecology, 1991)*

In sum, because permitted long-term disposal capacity to meet the needs of Lake County and the service area does not exist and because of the extended periods of time required to develop new disposal capacity, the Veolia ES Zion Landfill must be expanded. The proposed expansion will provide needed additional disposal capacity to communities in the service area, in accordance with sound solid waste management planning principles adopted by jurisdictions in Illinois and throughout the U.S.

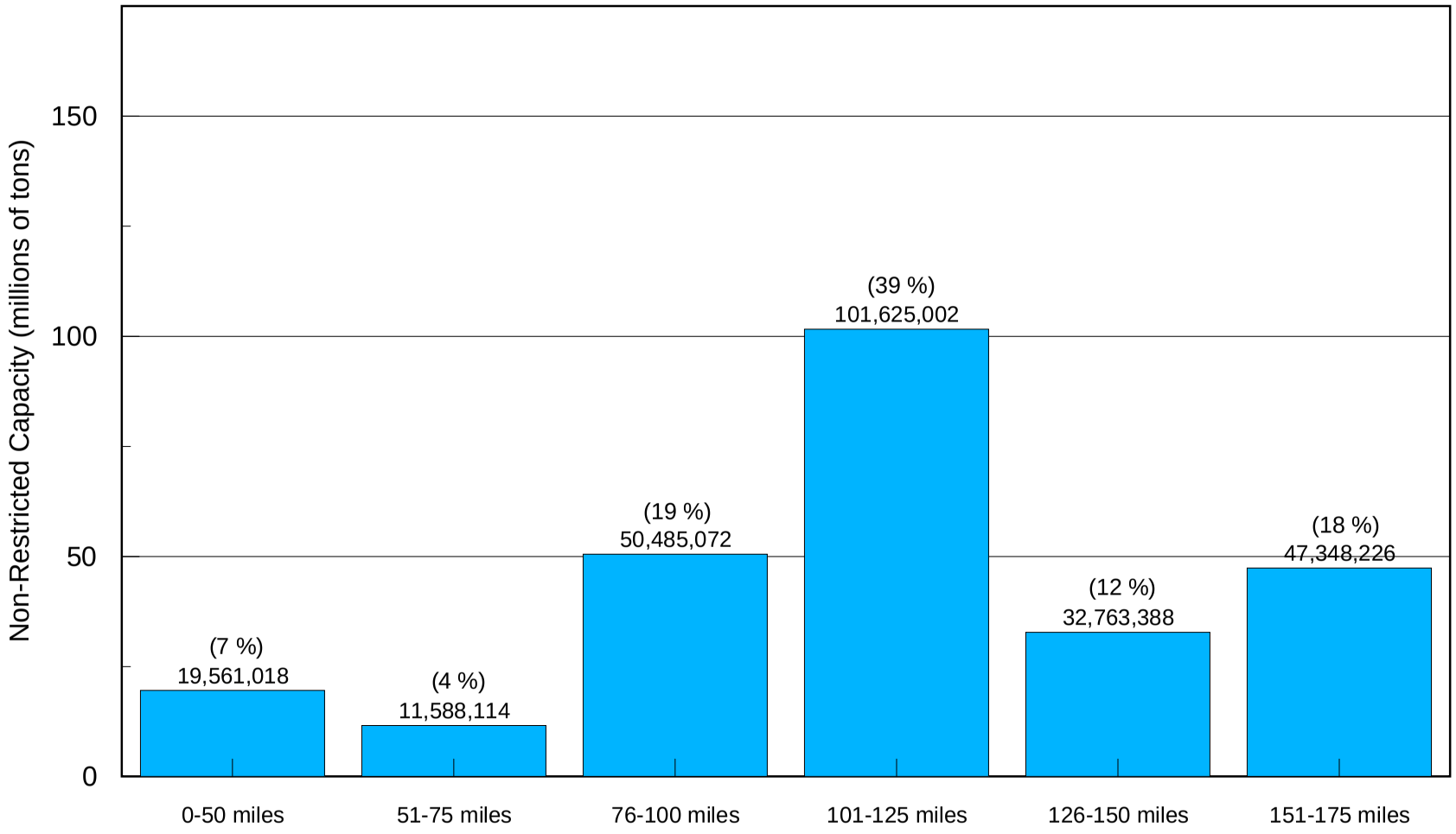
Economic Considerations

The expanded Veolia ES Zion Landfill will provide a conveniently-located source of disposal capacity to the service area. The proposed Facility will be located approximately 16 miles from the centroid[9] of Lake County and 46 miles from the centroid of the service area. Approximately 93 percent of the capacity at the 35 non-restricted landfills considered in the regional analysis is located greater than 50 miles from the Lake County centroid (refer to Figure 1-7). Approximately 96 percent of the capacity is located more than 50 miles from the service area centroid (refer to Figure 1-8). The average distance to the 35 facilities (weighted by capacity) is 113 miles from the Lake County centroid, and 98 miles from the service area centroid, or 2-7 times further than the Veolia ES Zion Landfill (refer to Appendix E.5).

Rising fuel costs as well as labor costs in the solid waste industry have added to the overall cost of managing waste. Figure 1-9 shows that the price of diesel fuel has increased significantly since the late 1990s and early 2000s. Although fuel prices declined in late 2008 and early 2009 from the very high levels observed in the summer of 2008, as of December, 2009, fuel prices still remain significantly higher than the 1995-2004 period. Many waste services companies have responded by adding fuel surcharges to customer bills. The siting of the proposed expansion may help to alleviate these cost increases and will save on fuel consumption by providing landfill capacity that is located nearer to waste generators within the service area.

[9] The centroid represents the "average" location at which the waste from the service area is generated, based on the spatial distribution of population. The centroid for Lake County is approximately located at the intersection of Casey Road and IL 21 west of Waukegan. The service area centroid is approximately located at the intersection of Belmont Avenue and Oak Park Avenue in Chicago.

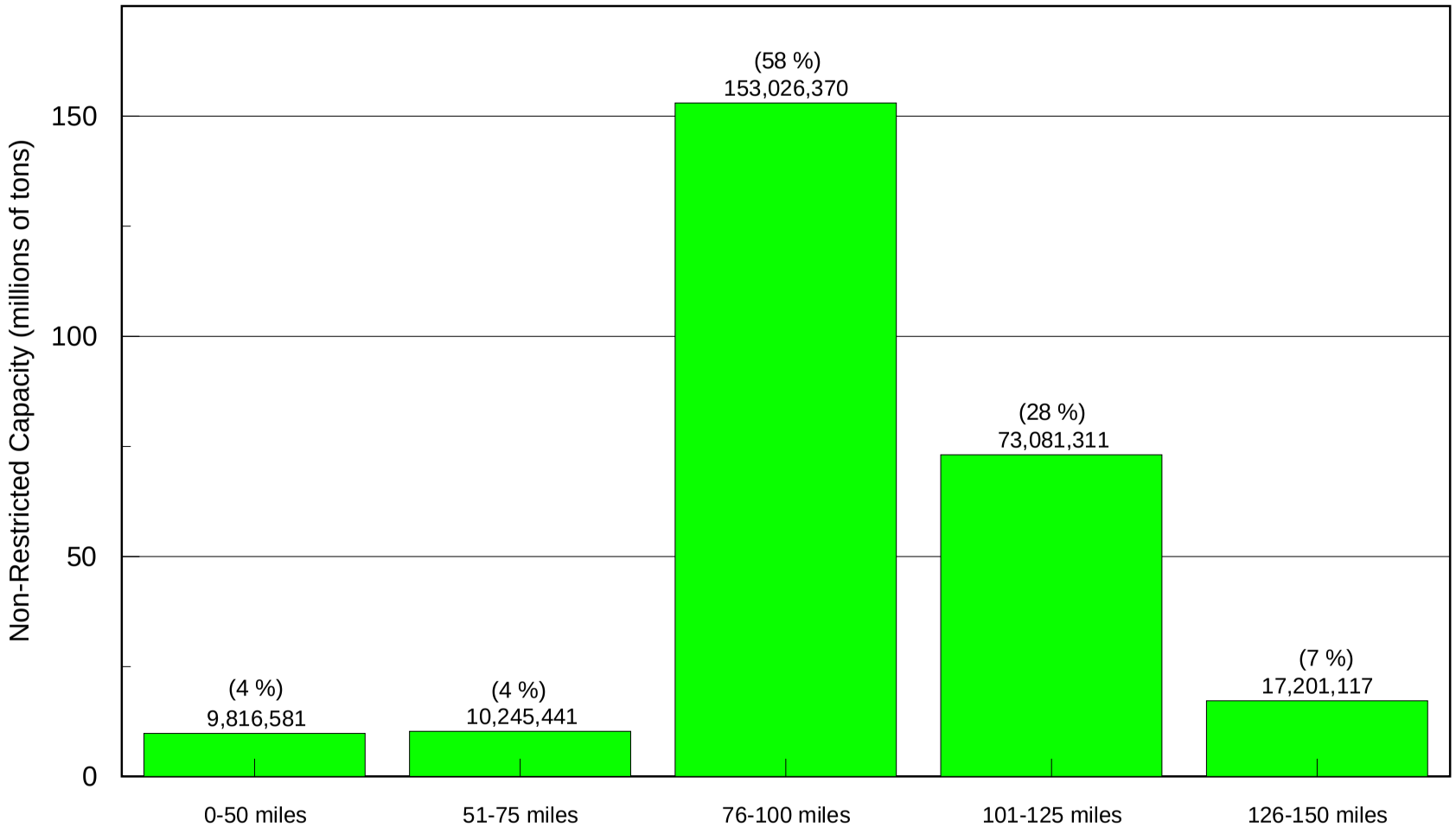
DISPOSAL CAPACITY VERSUS DISTANCE FROM LAKE COUNTY



Notes:
1. Distances are one-way, over-the-road measured from Lake County centroid.
2. Lake County centroid located at Casey Road and Highway 21 near Waukegan.

FIGURE 1-7

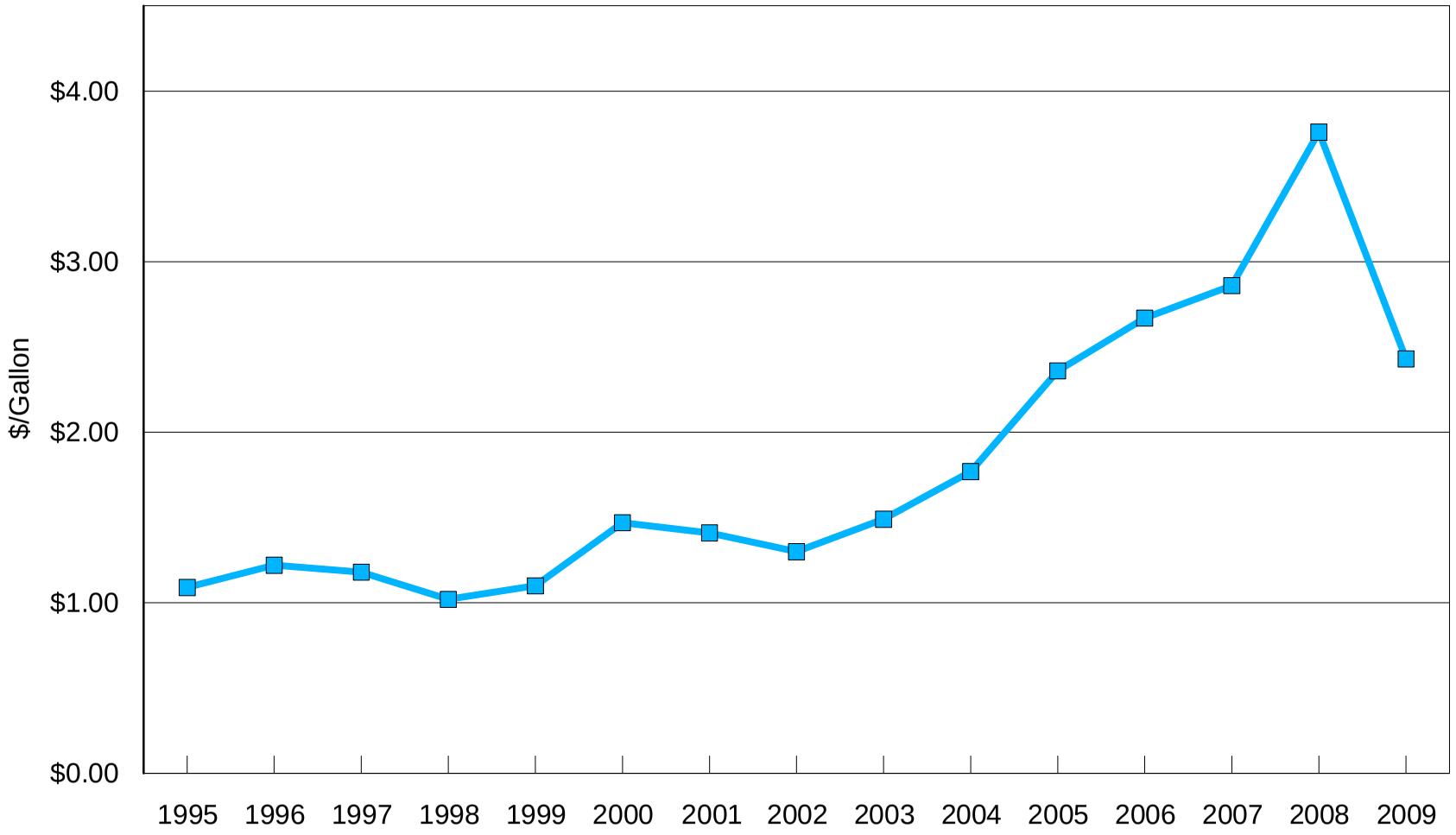
DISPOSAL CAPACITY VERSUS DISTANCE FROM SERVICE AREA



Notes:
1. Distances are one-way, over-the-road measured from service area centroid.
2. Service area centroid located near Belmont Ave. and Oak Park Ave. in Chicago.

FIGURE 1-8

MIDWEST DIESEL FUEL PRICES



Source:
1. U.S. Department of Energy, Energy Information Administration (http://tonto.eia.doe.gov/oog/info/wohdp/diesel.asp).

FIGURE 1-9

Potential Additions to Capacity

Two Illinois landfills have received local siting approval for potential additional landfill capacity: 1) an expansion of the Streator Area Landfill #3; and, 2) an expansion of the Rochelle Municipal Landfill #2. The Streator Area Landfill #3 received siting approval in early 2002 and has a permit application pending with the IEPA for an expansion which would provide approximately 2,548,800 tons of additional capacity. The Rochelle Municipal Landfill received siting approval for an expansion of approximately 6,700,000 tons and has a permit application pending.

Even if this proposed additional landfill capacity is developed, it would not materially diminish the need for new regional capacity. Including the potential capacity of the two expanded landfills into the previous analysis only adds approximately 0.5 years of additional life:

$$0.5 \text{ years} = \frac{(2{,}548{,}000 \text{ tons} + 6{,}700{,}000 \text{ tons})}{19{,}686{,}000 \text{ tons}}$$

A third Illinois landfill, Laraway Landfill, also received siting approval for an expansion. However, that facility is limited in the types of waste it may accept (special waste and inert materials), in contrast to the Veolia ES Zion Landfill and most other landfills in the region, which also receive municipal waste from households and businesses. The impact of this potential additional capacity (it has not been permitted as of the date of this report) was estimated as follows. The 35 non-restricted regional landfills discussed previously had a remaining capacity of 263,371,000 tons of waste as of January 1, 2009 (inclusive of the expansions at the Pheasant Run Landfill and Newton County Landfill approved subsequent to January 1, 2009), and a five-year average annual throughput of 19,686,000 tons per year of waste. According to the siting application for the Laraway expansion, the Laraway facility is projected to dispose of 624,000 tons of waste per year and to operate for approximately 30 years. The estimated remaining life of the 35 regional landfills was then compared assuming that the Laraway facility receives 624,000 tons per year of waste from the regional waste stream.

$$\text{Remaining Life (excl. Laraway expansion)} = \frac{263{,}371{,}000 \text{ tons}}{19{,}686{,}000 \text{ tons}} = 13.4 \text{ years}$$

$$\text{Remaining Life (incl. Laraway expansion)} = \frac{263{,}371{,}000 \text{ tons}}{(19{,}686{,}000 \text{ tons} - 624{,}000 \text{ tons})} = 13.8 \text{ years}$$

The Laraway expansion would therefore add approximately 0.4 years of additional capacity to existing permitted regional landfill capacity.

In 2001, Berrien County, Michigan adopted an update to its Solid Waste Management Plan. The Plan Update provided for the potential expansion of the Forest Lawn Landfill (13,900,000 airspace cubic yards), Orchard Hill Landfill (13,900,000 airspace cubic yards) and Southeast Berrien County (4,400,000 airspace cubic yards). Forest Lawn has subsequently permitted all but 1,100,000 airspace cubic yards of its capacity allotment and Orchard Hill has subsequently permitted all of its allotment. As of the date of this report, it is estimated that approximately 5,500,000 airspace cubic yards of expansion potential approved by the Plan Update have yet to be permitted. If fully permitted and developed, the expansion of the two facilities would add a maximum of 0.2 years of capacity[10]:

$$3{,}465{,}000 \text{ tons} = \frac{(5{,}500{,}000 \text{ airspace cu yds}) \times (0.9 \text{ cover factor}) \times (1{,}400 \text{ lbs/cu yd})}{(2{,}000 \text{ lbs/ton})}$$

$$0.2 \text{ years} = \frac{(3{,}465{,}000 \text{ tons})}{(19{,}686{,}000 \text{ tons/year})}$$

[10] The Southeast Berrien County Landfill and Orchard Hill Landfill are located in excess of 100 miles from the centroid of the service area. The Southeast Berrien County Landfill reported accepting only minimal quantities of waste from Illinois in 2004, and the Orchard Hill facility did not accept any waste from Illinois.

Other Factors Underlying Need

The proposed expansion of the Veolia ES Zion Landfill will provide much needed disposal capacity to Lake County and the approximately 6.7 million residents of the service area. The previous discussion clearly demonstrates that, based on the current demand for disposal capacity and the existing supply of permitted disposal capacity, there is a need for the proposed expansion. In addition, the expanded landfill will provide numerous added benefits to the City of Zion and Lake County:

- ❏ The proposed expansion serves as an example of effective solid waste planning, and as an example of a successful public-private partnership.

- ❏ The expanded landfill will provide additional disposal capacity to the City of Zion and Lake County. This will enable the City and other communities in the County to focus future solid waste efforts on increasing recycling and waste diversion.

- ❏ The expanded landfill will continue to provide jobs and significant revenues for the City and other units of government in Lake County. These revenues can be used to defer the cost of solid waste programs and other government initiatives.

- ❏ The construction of the expanded landfill will inject dollars into the local and regional economy. Continued development over the life of the expansion will add additional dollars into the local and regional economy. Significant amounts of the construction materials and equipment will be purchased locally, such as processed gravel, culverts, asphalt, heavy equipment and nursery products.

- ❏ Operating expenses incurred by the landfill will add additional money into the local economy.

- ❏ The availability of local, cost effective disposal capacity will help to minimize illegal and road side dumping.

- ❏ The continued availability of the landfill will assist the City and County in attracting and/or retaining industry, since many industrial facilities consider the availability of safe, competitively-priced disposal capacity in determining where to locate.

Conclusions

Based on the analysis contained in this report, the proposed expansion of the Veolia ES Zion Landfill is necessary to accommodate the waste needs of the area it is intended to serve. This conclusion is supported by the following facts:

- ❑ The service area is projected to experience growth in population in the future.
- ❑ The service area generates and disposes of substantial quantities of waste.
- ❑ The capacity deficit within the service area over the analysis period 2009-2022 is approximately 104,282,000 tons, significantly less than the 12,298,000 tons of capacity to be provided by the expanded landfill.
- ❑ Lake County communities have historically relied on local landfills, including the Veolia ES Zion Landfill, for disposal capacity.
- ❑ The combined landfill capacity at the 3 landfills currently used to disposed of the majority of Lake County's waste is projected to be exhausted in approximately 6 ½ years.
- ❑ The number of landfills located within the service area has declined by nearly 80 percent since 1987. Waste must therefore be transported increasingly farther distances and at greater cost for disposal.
- ❑ As of January 1, 2009, there were 5 permitted landfills operating within the service area, one of which (CID Landfill) had minimal remaining capacity. As of the date of this report, the landfills in the service area had approximately 6 years of combined capacity based on reported 2008 waste acceptance rates.
- ❑ On a regional basis, permitted disposal capacity is projected to be exhausted by early 2022. Because Lake County does not have any transfer stations, the majority of regional capacity is not accessible to the County because of the long transportation distances involved. Given the extended time necessary to plan, site, permit and develop new capacity, additional landfill capacity must be sited to meet the needs of Lake County and the service area.
- ❑ The expanded Facility will be conveniently located to Lake County and the service area. Existing landfills are located, on average, more than twice as far away from the service area as the Veolia ES Zion Landfill. The landfills are located approximately seven times further than the proposed expansion from Lake County. As a result, the proposed expansion will conserve significant quantities of fuel and enable communities in the service area to better contend with the rising cost of transporting waste farther distances.
- ❑ The County's Solid Waste Management Plan (as updated) recommends that the County rely on privately owned and operated landfills for disposal capacity.
- ❑ In particular, the 2004 Plan Update recommends that existing disposal agreements (including the agreement with the Veolia ES Zion Landfill) be maintained to provide disposal capacity.
- ❑ Moreover, the 2004 Plan Update recommends that the County secure additional landfill capacity to meet the County's needs for a 20-year period.

- ❑ The proposed Facility will contribute to economic development efforts through employment opportunities and purchases of goods and services from local businesses.

Therefore, the proposed Facility satisfies Criterion 1.

References

Becker Associates, Inc., *Lake County Solid Waste Management Plan Five Year Update*, September, 1994.

Becker Associates, and Black & Veatch, *West Cook County Solid Waste Management Plan*, July, 1992.

Berrien County, *Berrien County Solid Waste Management Plan, 2nd Update*, March 2001.

California Integrated Waste Management Board, *Beyond 2000: California's Continuing Need for Landfills* (http://www.ciwmb.ca.gov/landfills/needfor/).

Camp Dresser & McKee Inc., *Illinois Commodity/Waste Generation and Characterization Study,* commissioned by the Illinois Department of Commerce and Economic Opportunity and the Illinois Recycling Associations, May, 2009.

Camp Dresser & McKee Inc., *Lake County, Illinois 1999 Solid Waste Management Plan Update*, July, 1999.

Camp Dresser & McKee Inc., *McHenry County Solid Waste Management Plan Update*, July, 1997.

City of Chicago, Department of Environment, *City of Chicago Solid Waste Management Plan Five-Year Update*, September, 1997.

City of Chicago, Department of Streets and Sanitation, *Solid Waste Management Plan for City of Chicago*, (3 Volumes), March, 1992.

Envirodyne Engineers, *South Suburban Mayors and Managers Association Municipal Solid Waste Plan*, July, 1991.

Graef, Anhalt, Schloemer & Associates Inc., *McHenry County Solid Waste Management Plan,* February 18, 1992.

Illinois Department of Commerce and Economic Opportunity and Illinois Recycling Association, *Illinois Commodity/Waste Generation and Characterization Study*, May 22, 2009.

Illinois Environmental Protection Agency, Solid Waste Landfill Capacity Certification Forms, January 1, 2009.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2007 Annual Report*, November 2008.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2006 Annual Report*, December 2007.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2005 Annual Report*, October 2006.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2004 Annual Report*, December 2005.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2003 Annual Report*, November 2004.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2002 Annual Report*, October 2003.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2001 Annual Report*, December 2002(a).

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 2000 Annual Report*, January 2002(b).

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 1999 Annual Report*, January 2001.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 1998 Annual Report*, November 1999.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 1997 Annual Report*, December 1998.

Illinois Environmental Protection Agency, *Nonhazardous Solid Waste Management and Landfill Capacity in Illinois: 1996*, August 1998.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois, Ninth Annual Report*, December 1996.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois, Eighth Annual Report*, September 1995.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois, Seventh Annual Report*, March 1994.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois, Sixth Annual Report*, January 1993.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois, Fifth Annual Report*, October 1991.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois,* December 1990.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois,* October 1988.

Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois,* August 1987.

Indiana Department of Environmental Management, *2007 Summary of Indiana Solid Waste Facility Data*, undated

Indiana Department of Environmental Management, *2006 Summary of Indiana Solid Waste Facility Data*, undated

Indiana Department of Environmental Management, *2005 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *2004 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *2003 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *2002 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *2001 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *2000 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *1999 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *1998 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *1997 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, *1996 Summary of Indiana Solid Waste Facility Data*, undated.

Indiana Department of Environmental Management, Calculations for MSWLF Remaining Capacity Volume in Cubic Yards and Life in Years, undated spreadsheets for 2008.

Indiana Department of Environmental Management, *Summary of Indiana Solid Waste Facility Data: 1995*, undated.

Indiana Department of Environmental Management, *Summary of Indiana Solid Waste Facility Data: 1991-1994*, undated.

Lake County Joint Action Solid Waste Planning Agency, *Lake County Solid Waste Management Plan*, April, 1989.

Lee County, Amendment to the Lee County Solid Waste Management Plan, Resolution No. 07-03-001, July 15, 2003.

McHenry County Department of Planning & Development, *McHenry County, Illinois Solid Waste Management Plan 10-Year Update*, September 3, 2002.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2007 - September 30, 2008*, January 30, 2009.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2006 - September 30, 2007*, January 31, 2008.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2005 - September 30, 2006*, January 31, 2007.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2004 - September 30, 2005*, January 31, 2006.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2003 - September 30, 2004*, February 22, 2005.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2002 - September 30, 2003*, January 28, 2004.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2001 - September 30, 2002*, February 28, 2003.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 2000 - September 30, 2001*, February 22, 2002.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 1999 - September 30, 2000*, April 9, 2001.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 1998 - September 30, 1999*, February 9, 2000.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 1997 - September 30, 1998*, February 4, 1999.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 1996 - September 30, 1997*, February 27, 1998.

Michigan Department of Environmental Quality, *Report of Solid Waste Landfilled in Michigan, October 1, 1995 - September 30, 1996*, February 19, 1997.

Northeastern Illinois Planning Commission, *Local Government Planning for Municipal Waste Management in Northeastern Illinois*, August, 1993.

Northeastern Illinois Planning Commission (now Chicago Metropolitan Agency for Planning), *2030 Forecasts of Population, Households and Employment,* September 30, 2003.

Ogle County, *Ogle County Solid Waste Management Plan Ten Year Update*, August, 2003.

Patrick Engineering, Inc., *Solid Waste Agency of Northern Cook County Solid Waste Needs Assessment*, July 1989.

Patrick Engineering Inc., *Solid Waste Agency of Northern Cook County Solid Waste Management Plan*, April, 1991.

Solid Waste Agency of Lake County, *Lake County 2004 Solid Waste Management Plan Update*, November, 2004.

Solid Waste Agency of Lake County, *Draft 2009 Solid Waste Plan, Section 2 - Waste Generation and Management*, 2009.

U.S. Census Bureau, Census 2000, Table DP-1.

U.S. Department of Energy, Energy Information Administration, *U.S. On-Highway Diesel Fuel Prices*, http://tonto.eia.doe.gov/oog/info/wohdp/diesel.asp, January 25, 2010.

U.S. EPA, *Decision-Maker's Guide to Solid Waste Management, Volume II*, EPA530-R-95-023, August, 1995.

Washington State Department of Ecology, *The Executive Summary of the Washington State Solid Waste Management Plan*, April, 1991.

West Cook County Solid Waste Agency, *Solid Waste Management Plan 10-Year Update*, March, 2007.

Wisconsin Department of Administration, *Wisconsin Population 2030,* March, 2004.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2008 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, June, 2009.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2007 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, June, 2008.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2006 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, May, 2007.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2005 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, July, 2006.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2004 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, May, 2005.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2003 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, November 2004.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2002 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, June 2003.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2001 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, undated.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 2000 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, undated.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 1999 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, undated.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 1998 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, undated.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 1997 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, undated.

Wisconsin Department of Natural Resources, Bureau of Waste Management, 1996 Wisconsin Solid Waste Landfill Tonnage-Capacity Report, undated.