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**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);



- ❑ 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.



## 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.



*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<sup>9</sup> 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.

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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.



## **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 dispose 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.

