

# Estimating the Need for Cemetery Spaces in South Florida: An Exercise in Applied Economic Geography

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## Introduction

The purpose of this paper is to relate the author's experiences in preparing for and participating in an administrative hearing to petition the Florida Department of Banking and Finance for a license to establish a cemetery for a group of investors. The case had a significant geographic component in the necessity to define a market area and to estimate the demand for, and supply of, cemetery spaces in that market area. This paper also demonstrates the extent to which the legal system supports the avoidance of certain issues that might damage the case of one's client, though such methods of investigation would be unacceptable in an academic setting.

First, this paper briefly reviews some of the literature on the geography of cemeteries. Second, this paper discusses the cemetery licensing process in Florida. Third, the method used to estimate the demand for cemetery spaces is examined. Fourth, the method used to estimate the supply of cemetery spaces is presented.

## Literature Review

While cemeteries are not, percentage-wise, a major user of urban land, unlike other land uses, cemetery land use is static, rather than dynamic. That is, once land is used for burial purposes, society is very reluctant to permit a change in land use. Given this unique aspect of cemeteries, it is surprising that relatively little literature exists on the geography of cemeteries. Most of the extant literature is oriented toward cultural and religious issues. A number of studies focus on the cultural symbolism of cemeteries

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(Francaviglia 1971; Howett 1971; Kniffen 1967; Knight 1973; and Price 1966). The location and development of cemeteries as part of the urban landscape forms a second focus (Darden 1972; Hardwick Claus, and Rothwell 1971; and Pattison 1955). Newman (1986), Gonen (1998), and Bar-Gal and Azaryahu (1998) all examine the special case of Jewish cemeteries in Israel. Pattison (1955), Hardwick (1971), and Park (1994) emphasize cemeteries as land uses that compete with other land uses. Finally, Krim (1983) examines the diffusion of garden cemeteries in New England. This paper extends the literature on cemeteries in geography by emphasizing the methodology employed in Florida to determine the economic feasibility of a new cemetery.

### Cemetery Licensing

In Florida, one must obtain a license to establish a new cemetery. Simply put, one must show that the existing supply of cemetery spaces is not adequate to cover the demand for spaces over the next 30 years.

The purpose of licensing is similar to the reasoning behind the issuing of Certificates of Need for hospitals and nursing homes. That is, if cemeteries are simply allowed to open, an oversupply of spaces may result. Such an oversupply might lead to cemeteries failing and to the consequent problem of lack of attention to existing graves and loss of monies for those who have purchased plots on a pre-need basis. In addition, the placing of land into use as a cemetery basically removes it from being converted to an alternate use for the foreseeable future. Thus, it may be viewed as right and proper for the State to regulate entry into this business.

The Florida Department of Banking and Finance (DBF), acting upon a State of Florida **Statute** (497.006 H3)<sup>1</sup> and one of its own rules<sup>2</sup>, is responsible for the licensing of cemeteries. Basically, the Statute suggests that the DBF shall determine the need for a new cemetery by determining the adequacy of the existing cemetery facilities, given the need for burial spaces over a thirty-year period. To encourage competition, at least six cemeteries per county are to be allowed. The DBF **Rule** suggests that the "community" of the cemetery is the area from which it draws 75 percent or more of its business. While not a part of the rule, the DBF for years has assumed this market area to be a circle of radius equal to fifteen miles, although there is no known justification of the assumption of a market area of 15 miles. The Rule also states that the current

supply of spaces shall include all spaces at cemeteries *deriving most of their business from the same community* as the applicant for the new cemetery. It further states that unplatted reserve acreage is to be counted at 1,200 spaces per acre.

A person wishing to open a cemetery must submit a series of documents to the DBF concerning financial matters. The DBF then examines the need for a new cemetery in this area and issues a ruling. If the ruling is negative, the owner of the proposed facility may ask for an administrative hearing. Such was the case for *Memorial Sunset Park v. Department of Banking and Finance*. Represented at the hearing was Memorial Sunset Park (the proposed cemetery by which I was employed), the DBF, and Vista Memorial Park, an existing cemetery, in the role of "intervener."

Note that unlike a hospital or nursing home, once a license is obtained, no additional approval is needed to purchase additional acres to expand a cemetery. Thus, existing cemeteries can exclude any potential competition by continually expanding.

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<sup>1</sup>The State of Florida Statute 497.006 governing cemetery licensing reads as follows:

The department shall determine the need for a new cemetery in the community by considering the adequacy of existing cemetery facilities, licensed and unlicensed, within the county; the solvency of the trust funds of the existing facilities; and the relationship between population, rate of population growth, death rate, and ratio of burials to deaths to meet the projected need for burial spaces for a period of 30 years. In order to promote competition, the department may waive the criteria of this subsection so that each county may have at least six cemeteries operated by different licensees.

<sup>2</sup>The Florida Department of Banking and Finance rule on cemetery licensing reads as follows:

The community in which the cemetery is to be located shall be defined for the purpose of seeking authority to organize a cemetery pursuant to Chapter 497, F.S., as the smallest area contiguous to the proposed cemetery from which approximately seventy-five percent of burial spaces are to be expected.

After the community area is determined, the Department shall consider the adequacy of the existing facilities by obtaining from all profit, non-profit, religious, and municipal cemeteries that would also derive the majority of their sales from the same community as the applicant, the number of burial spaces available in ground burials, lawn crypts, mausoleums, including contemplated mausoleum structures in which sales have been made, requiring construction within five years from date of sale, plus unplatted reserve acreage as stated on the annual report of cemetery estimated at 1200 burial spaces per acre.

The population, its rate of growth, the death-rate, and the ratio of burials to deaths shall be determined from latest statistical information available for the community in which the proposed cemetery is to be located.

## Estimating the Demand for Cemetery Spaces

The legal statements presented above indicate the necessity to estimate the demand for cemetery spaces in the proposed cemetery's community. The proposed cemetery was in extreme northwest Dade County and, thus, the fifteen-mile circle contains most of northwest Dade and southwest Broward County. The steps involved in estimating the demand in **Broward County** were as follows:

- 1) Determine which census tracts lie within the fifteen-mile circle. For those tracts that "span" the circle, the percentage of the area of the tract lying inside the circle was estimated.
- 2) Determine the population of each tract for each of the next 30 years from Broward County Planning Department publications.
- 3) Apply the death rate published by the Broward County planning department to estimate the number of deaths.
- 4) Multiply the number of deaths times the burial rate. Not all persons who expire in Broward County are buried locally. Some are cremated; others are removed from the state for burial elsewhere (Florida Department of Health and Rehabilitative Services, 1987). Because solid reasons exist to believe that the burial rate in South Florida is increasing, a regression was performed between "year" and "burial rate" from 1980 to 1987. The regression proved insignificant and instead the burial rate used was the average of the burial rates in Broward County during the 1980s.

[Two reasons may be forwarded for the expected increase in the burial rate. First, a good portion of the elderly population is Jewish and migrated into the area in the 1970's (Sheskin 1991). As this population's length of residence increases and more family members move to South Florida, they will be more likely to be buried locally rather than have their bodies shipped north. Also, the percentage of the population in South Florida that is black has been increasing; blacks are more likely to be buried and less likely to be cremated than are whites (Lino 1990, 8).]

This procedure yields an estimate of 47,685 burials in the Broward county portion of the service area during the next 30 years.

The procedure used by the DBF varied somewhat from the above. They calculated that 15.5 percent of Broward County's population currently lives inside the circle and assumed that this percentage would remain constant for the next 30 years. Anyone

with local knowledge would see the fallacy of this assumption; Southwest Broward is a major growth region. Thus, the DBF estimated the 30 year burials as 33,705, about 29% below my estimate. In fact, under oath, the DBF expert admitted that the procedure that I used was superior to the procedure he had used.

For Dade County, I was faced with a clear conflict between the appropriate methodology for an academic setting and that for a legal setting. The DBF had assumed that the fifteen-mile circle included several cities that are inside the circle<sup>3</sup>, plus North Miami, North Miami Beach, Miami, and Coral Gables and two-thirds of the population of the unincorporated area. North Miami, North Miami Beach, and Coral Gables lie clearly outside the fifteen-mile circle; the City of Miami lies mostly outside the circle. The percentage of the unincorporated area's population inside the fifteen-mile circle is *well* below two-thirds. Thus, using the census tract procedure that I used for Broward, yielded a total of 619,827 population in the Dade County portion of the fifteen-mile circle (Metro-Dade County Planning Department, 1987). The DBF had estimated a population of 1,318,124, more than double my estimate (University of Florida 1987).<sup>4</sup>

Thus, we decided to challenge the DBF Broward County estimate, but not the Dade County estimate. To challenge the Dade County estimate would clearly lower the demand for cemetery spaces by about half and might have lost the case for our client. I emphasized to the cemetery's lawyer that the DBF or Vista Memorial lawyers might very well query as to why I was accepting the DBF procedure for Dade, while rejecting it for Broward. We agreed that I would simply repeat that we had accepted the Dade County DBF estimate of the current population of the Dade County market area. Fortunately, the question was not raised at the trial. This was an exercise in "telling the truth," but not volunteering the "whole truth," a situation with which I was not comfortable.

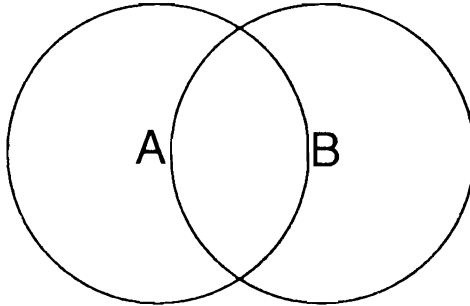
Given the acceptance of the 1,318,124 figure, I then applied the countywide growth rate to obtain the population for each year for the next 30 years and applied the death rate to the population. As for

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<sup>3</sup>These cities are El Portal, Hialeah, Hialeah Gardens, Medley, Miami Springs, Opa Locka, Sweetwater, Virginia Gardens, and West Miami.

<sup>4</sup>Prior to finding this major error in our favor, we had planned to challenge the 15 mile circle concept (which has no basis in reality) by perhaps the use of Reilly's Law or Thiessen polygons. These plans were abandoned at this point.

**Figure 1**  
**The Twelve-Mile Rule**



Broward County, a regression was performed to examine the relationship between “year” and “burial rate” for 1980 - 1987. In this case, the regression proved significant and the burial rate was increased from 62.8% to 71.5% over the 30-year period. This yielded an estimate of 299,837 burials. Combining this with the 47,685 estimate for Broward yields a total demand of 339,407. (Had the population estimate for Dade County been accurately determined, then the number of burials would have been estimated at about 150,000, for a total of about 200,000 burials as the total demand from both Dade and Broward Counties.)

### **Estimating the Supply of Cemetery Spaces**

Given the Statute and Rule referenced above, nine cemeteries were stipulated to by all parties as lying within the fifteen-mile circle. These nine cemeteries are shown in Table 1. The total number of unused spaces is shown to be 390,726. On this basis, the DBF would have to reject the new cemetery, since the supply (390,726) is greater than the demand (339,407).

Thus, we went back to the DBF Rule that states that the department shall consider the supply at “all profit, nonprofit, religious, and municipal cemeteries that would also derive the majority of their sales from the same community as the applicant.” This allowed us to eliminate all but two of the nine cemeteries based on two arguments:

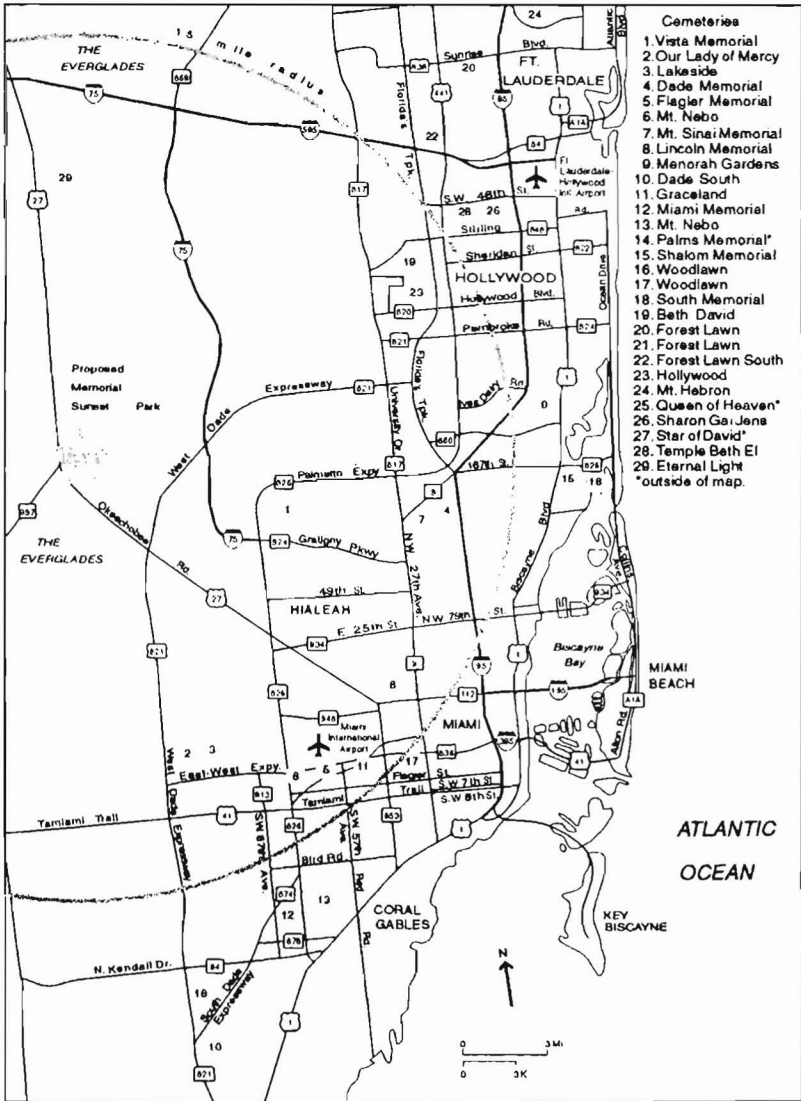
**Table 1**  
**Competing Cemeteries**

Cemetery	Unused Spaces	Religious Restrictions	Mileage from Proposed Cemetery
1 Vista Memorial	85,821		8.6
2 Our Lady Mercy	93,700	Catholic	10.0
3 Lakeside Memorial	55,746	Jewish	11.0
4 Dade Memorial	54,656		10.0
5 Flagler Memorial	14,448		15.0
6 Mount Nebo	11,069	Jewish	15.0
7 Mount Sinai Memorial	2,027	Jewish	10.0
8 Lincoln Memorial	1,259		15.0
9 Menorah Gardens	72,000	Jewish	15.0
<b>Total</b>	<b>390,726</b>		

I) Cemeteries 5, 6, 8, and 9 (Table 1) are all fifteen miles from the proposed cemetery. Figure 1 shows the market areas for cemetery A (the proposed cemetery) and cemetery B. Each circle is fifteen miles in radius and cemetery B is located on the circumference of cemetery A's market area circle. The shaded area is the portion of B's market area that lies outside A's market area. Clearly, cemeteries that lie at fifteen miles from a proposed cemetery have the majority of their market area outside the proposed cemetery's market area. If we make a set of assumptions similar to those of central place theory, then these four cemeteries also derive a majority of their sales from outside the community of the proposed cemetery. A mathematical proof was offered to show that any cemetery at twelve miles and beyond would not derive the majority of its sales from the same community as the applicant. We termed this argument the **twelve-mile rule** (Figure 1).

II) Cemeteries 2, 3, 6, 7, and 9 (Table 1) are all religiously-based institutions. One must be Jewish to be buried in a Jewish cemetery and Catholic to be buried in a Catholic cemetery. For the Jewish cemeteries (3, 6, 7, 9), we argued that, because only 2% of the population of the proposed cemetery's market area was Jewish (Sheskin 1982; Millon, 1989), it was impossible for these cemeteries to derive most of their business from the market area of the proposed cemetery. For the Catholic cemetery, because only 28% of the market area of the proposed cemetery is Catholic (Sheskin 1986),

Figure 2  
Cemeteries  
Ft. Lauderdale - Miami Metro Area





we argued it to be highly unlikely that the Catholic cemetery derives most of its sales from the same market area. We termed this argument the **religious exclusion rule**.

A further argument was tendered, providing additional support for the consideration of only cemeteries 1 and 4: a few cemeteries are subject to both arguments. Numbers 6 and 9 are both Jewish and fifteen miles away. In addition, the three other religiously-based cemeteries (2, 3, and 7) are also at least ten miles away. In these four cases, in addition to the religious restrictions, a good portion of the cemeteries' market area is outside the market area of the proposed cemetery.

Having eliminated all but two cemeteries (1 and 4) by this argument, the total supply of cemetery spaces in this area can now be calculated as 140,477, showing a clear need for additional cemetery spaces.

### **Arguments for the Intervener**

The lawyer for the intervener (Vista Memorial) tried to take issue with the Dade County Planning Department's projections of population growth in Northwest Dade, calling a witness who testified as to the presence of large rock pits. My counter testimony was that there were also two airports and countless lakes in the area, and that the Dade County Planning Department, no doubt, accounted for these factors in making their projections. The intervener also pointed out that there were a few cemeteries just outside the fifteen-mile limit, and also introduced evidence to suggest that many cemeteries (including his client's) now bury people two deep, effectively doubling the capacity of each acre from 1,200 to 2,400. He further argued that his client's cemetery (Vista Memorial) had been approved for 20 mausoleums and that this also would increase the supply of cemetery spaces. Never did he take issue with arguments I and II above, concerning the elimination of competing cemeteries from consideration.

### **Conclusion**

The population within a fifteen-mile circle of a proposed cemetery was estimated, and given death and burial rates, the demand for cemetery spaces over a 30-year period had been estimated at 339,407. The supply of cemetery spaces was estimated at only 140,477, after eliminating cemeteries that are religiously-based

and/or were more than twelve miles away. On this basis, the cemetery was approved. The fact that the Hearing Officer accepted both the 12-mile rule and the religious exclusion rule effectively meant that this case made "new law" in the State of Florida.

This case represented an instance of conflict between my duty as an academic to present an accurate portrayal of a situation and my duty as an expert witness to provide the best possible case for the lawyer representing the proposed cemetery. Had we been absolutely certain that the judge would accept our twelve-mile and religious exclusion rules, we could have been more straightforward about the incorrectness of the Dade County estimate. Our case would have been almost as strong.<sup>5</sup> However, since the lawyer and I could not be certain of this, we found it necessary to present the best possible case for our client, which meant accepting the validity of "given" figures that were not, in fact, valid.

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<sup>5</sup>If the Dade County estimate of demand were properly derived, then the demand would have been about 200,000 spaces versus the supply of about 141,000, and we still would have won the case.

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