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Geographic Exclusion
Spatial Analysis for Evaluating the Implications of Megan’s Law

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In the state of Ohio, House Bill 180, Senate Bill 175 and Senate Bill 5 collectively form Megan’s Law. This law requires individuals convicted of a sexually oriented offense to register with the local sheriff’s office at least twenty days prior to the move-in date of the offender. Beginning July 31, 2003, Megan’s Law prohibited an offender of a sexually oriented offense from establishing or occupying a residence within 1,000 feet of any school-related properties. A major social concern with this law and its subsequent enforcement is the belief that the geographic constraints placed on registered sex offenders effectively eliminate nearly all residential housing options. The purpose of this paper is to explore issues of geographic exclusion by conducting a spatial analysis of registered sex offenders in Hamilton County, Ohio. Analysis using geographic information systems (GIS), proximity evaluation and basic statistical techniques enables the impacts of this law to be assessed.

Keywords: sex offenders; proximity analysis; geographic exclusion; geographic information systems (GIS)

1. Introduction

Megan’s Law is a federal law that was passed in 1996, authorizing local law enforcement agencies to notify the public about convicted sex offenders living in, working in, or visiting their communities. Its origins are linked to the 1994 rape and murder of a 7-year-old New Jersey resident named Megan Kanka (Levi, 2000). The 1996 law was enacted as an amendment to the Jacob Wetterling Crimes Against Children and Sexually Violent Offenders Registration Act of 1994 (1994; U.S. Department of Justice [USDOJ], 2006). The Wetterling Act requires all states to establish a “sex offender and crimes against children registry” (Office of Justice Programs, 2006). Megan’s Law amends the Wetterling Act and requires each state to develop a procedure for public notification when a sex offender is released into one of its communities. Subsequent amendments require lifetime registration for recidivists and offenders who commit certain aggravated offenses (Lychnner Sexual Offender Tracking and Identification Act, 1996), registration of military and nonresident workers (Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations...
Act, 1998), and that offenders notify authorities when they enroll in or are employed by an institution of higher education (Campus Sex Crimes Prevention Act, 2000; USDOJ).

One of the more controversial aspects of Megan’s Law and its subsequent amendments is community notification, which requires that sexually oriented offenders register with local law enforcement agencies for the purpose of tracking the offender’s whereabouts. Although the constitutionality of sex offender registration and community notification is being debated (“Making Outcasts out of Outlaws,” 2004), there is no debate regarding the rapid increases in public consumption of this information. By 2001, nearly 386,000 convicted sex offenders had been registered (Adams, 2002). Currently, 40 states have sex offender registries that can be accessed electronically by the public (Tewksbury & Higgins, 2005).

Recently, scholars have started to consider the collateral consequences of sex offender registration (Levenson & Cotter, 2005; Lieb, 2000; Petrunik, 2003; Tewksbury, 2005; Tewksbury & Lees, 2006; Thomas, 2004). Specifically, concerns have been raised that the process of offender registration not only promotes the public shaming of those convicted of a sex crime (Blair, 2004) but also contributes to a higher degree of offender isolation within the community (Tewksbury & Lees). Collateral consequences for both the offender and the general public are quite varied. For instance, Tewksbury and Lees suggested that citizens attending community notification meetings experienced increased levels of anxiety. Moreover, citizens who are notified of a sex offender living in their neighborhood may contribute to the integration difficulties many offenders face (Zevitz & Farkas, 2000). Where offenders are concerned, it is feared that they often experience harassment and difficulty in finding employment and housing.

Perhaps the most controversial aspects of Megan’s Law are the spatial restrictions placed on the residential locations available to sex offenders. As of 2005, 14 states had enacted buffer zones that prohibit sex offenders from residing within a specified distance (typically, 1,000 feet) of a school, park, day care center, or school bus stop (Levenson & Cotter, 2005). As noted by Levenson and Cotter, the least restrictive distance requirement is in Illinois (500 feet), whereas the most restrictive is found in California. California law mandates that sex offenders on parole not live within 0.25 miles of an elementary school and not live within 35 miles of a victim or witness related to their crime.

At issue is the collateral consequence of housing availability to offenders. Are restriction zones too restrictive? Do restriction zones exacerbate the shortage of housing options, creating inequities? Is affordable housing available within the approved areas in which sex offenders may live? Levenson and Cotter (2005, p. 169) noted that the spatial arrangement of schools and parks can create a massive, overlapping restriction zone, “making it essentially impossible for sex offenders in some cities to find suitable housing . . . [and potentially] forcing offenders to cluster in high-crime neighborhoods.” As a result, “[S]uch restrictions can lead to homelessness and transience, which interfere with effective tracking, monitoring and close probationary supervision” (Levenson & Cotter, p. 169).

Given these concerns regarding the collateral consequences of sex offender registration and housing availability, the purpose of this article is to outline a methodology for evaluating offender exclusion zones in urban areas. Specifically, we utilize geographic information systems (GIS) and proximity analysis to (a) geographically locate registered offenders, (b) identify restricted locations and their associated exclusion zones, and (c) describe a process.
for testing housing inequity arguments for sex offenders. In order to illustrate this process, offender residences and school restriction zones are evaluated through the use of cadastral data in Hamilton County, Ohio.

2. Sex Offender Registration and Community Notification

In concept, sex offender registration laws are relatively simple. When convicted offenders are released from prison, they are required to register with local law enforcement agencies. Because each state is responsible for administering its own registration process, there are slight variations in the information collected. For example, the State of Mississippi requires a photo and a biological sample (in addition to employment and residential information). In contrast, the State of Kentucky does not require a photograph, even though a physical description for each offender is documented. Regardless of location and the set of information required, once registered, each offender is added to local, regional, and national databases.

Because there are concerns that sex offenders have a propensity to recidivate (Walsh, Cohen, & Flaherty, 1998), the vast majority of law enforcement agencies also provide some form of public disclosure and notification to the communities in which the sex offenders reside. There are four basic models of community notification (Bedarf, 1995; Finn, 1997; Levi, 2000; Presser & Gunnison, 1999):

1. State agencies determine the level of risk each sex offender poses to the public and then implement a community notification plan that reflects this level of risk.
2. Sex offender registration laws stipulate which types of offenders are subject to community notification as well as the method of notification. This process is then carried out by a state agency (e.g., local law enforcement).
3. Sex offenders are required to carry out the notification process.
4. Concerned citizens and community groups request information regarding sex offender locations, and this information is released by a state agency.

Perhaps the most interesting aspect of the community notification laws centers on the risk-level classification for each offender. For example, in the State of Washington, risk levels correspond to a three-tier designation: (a) low, (b) moderate, and (c) high. Low-risk offenders are usually first-time offenders, are not predatory, and are currently involved in or have just completed approved treatment programs (Whatcom County Sheriff’s Office [WCSO], 2006). In most cases, these offenders live with or are related to their victims. Risk-level 2 offenders have a higher likelihood of recidivism than risk-level 1 offenders. Typically, these offenders have problems with drugs or alcohol and have failed to participate in approved treatment programs. More troubling is the propensity of risk-level 2 offenders to “groom” their victims, using a position of trust to commit crimes, and in this respect, they are considered predatory (WCSO). Recidivism is the most significant threat with risk-level 3 offenders. High-risk offenders have had multiple victims, and in many cases, these victims were not known by the offender. Risk-level 3 offenders are predatory in nature, often display an alarming degree of cruelty to their
victims, and usually deny the crime or underplay its significance. In many instances, these offenders have clear indications of personality disorders or mental illness (WCSO).

In the State of Ohio (Ohio Megan’s Law, 1996), the classifications are somewhat different, but the overall levels of risk are very similar to the taxonomy outlined by the State of Washington. For example, in Ohio, a sexual predator corresponds to a level-3 offender. Ohio law mandates that sexual predators must register with local law enforcement every 90 days for life and whenever the offender changes residence. Habitual sex offenders in Ohio correspond to level-2 offenders in Washington. Habitual sex offenders must register once a year for 20 consecutive years and whenever the offender changes residence. Finally, Ohio’s sexually oriented offenders (risk-level 1) must register once a year for 10 years and whenever a change in residence is made.

2.1 Residential Restriction Zones

One of the more intriguing aspects of community notification laws is the residential restriction zone imposed by many states. As mentioned previously, these restriction zones are in place to prohibit convicted sex offenders from establishing a residence within a given distance of schools, parks, day care centers, or playgrounds. From a practical standpoint, the purpose of this restriction zone is to eliminate both the temptation and opportunity for convicted sex offenders to commit another crime. In this context, it is clear that public safety and child protection are the primary considerations for enacting restriction zones (Levenson & Cotter, 2005). However, as noted in Section 1, there are concerns regarding the collateral consequences of community notification and residential restriction zones. Most notably, not only do restriction zones create a shortage of viable housing options for offenders, but also these statutes may increase the risk of recidivism by aggravating the stressors (e.g., isolation, shame, and lack of social support) that trigger sex offenders to relapse (Edwards & Hensley, 2001; Freeman-Longo, 1996; Levenson & Cotter).

From a more pragmatic standpoint, there are also issues regarding how these restriction zones are calculated. What portion of a school-related property is to be used when creating restriction zones? Does a zone include only the school structure? Do the restriction zones apply to parking lots and athletic fields? To be sure, there are some “gray” areas when dealing with these types of residential restrictions. However, there are spatial analytical approaches that offer promise in both the enforcement of Megan’s Laws and the evaluation of the impact of their enforcement on housing opportunities for convicted sex offenders. The next section outlines a methodological approach for evaluating the impact of residential restrictions on housing availability and choice, and details the data and results of such an evaluation for Hamilton County, Ohio.

3. Data and Methodology

The study area for this article is Hamilton County, Ohio. Hamilton County is part of a large metropolitan complex in southwestern Ohio that includes portions of Kentucky and Indiana. The city of Cincinnati (populationn = 331,458) is located in Hamilton County.
3.1 Sex Offender Data

There are several key databases used for this spatial analysis. First, a comprehensive database of all registered sex offenders in Hamilton County, and their associated residential address, was acquired from Simon L. Leis and the Hamilton County Sheriff’s Office (HCSO; 2005). Data were obtained on June 11, 2005. The obtained database consisted of 1,098 registered sex offenders. Because this site is continually updated by the HCSO and is subject to change, these data represent a snapshot of offender locations for June 11, 2005. Several steps were taken to clean up this database, including rectifying misspelled street names, erroneous street types (e.g., Ave. versus St.), and incorrect zip codes. In three cases, the registered sex offenders did not live in Hamilton County. These offenders were not used in the subsequent cartographic or spatial analysis. Similarly, there were instances where the registered offenders did not have a residential address. In total, 1,095 observations were mapped and utilized for spatial analysis.

3.2 School Data

The second major database utilized in this article was obtained from the Ohio Department of Education (ODE) and includes all high schools, junior high schools, middle schools, elementary schools, vocational schools, special schools, and nonpublic schools (grades: preschool-12) for Hamilton County (ODE, 2005). Data were obtained on June 11, 2005. The obtained database consisted of 353 schools. Because this site is continually updated by the ODE and is subject to change, these data for school locations also represent a snapshot for June 11, 2005. A similar effort was made to clean up this database for spatial and cartographic analysis. In several cases, P.O. boxes were used as the contact address for a school. Unfortunately, these do not represent the true geographic location of a school. When possible, these problems were rectified and updated with an actual street address. In other instances, there were multiple entries or names for a single school. In most cases, this was simply an additional contact person or additional school functioning on the same campus. For example, there were two entries for Withrow High School and Withrow International High School, both of which are housed and located on the same physical campus. In total, 345 school addresses were mapped and utilized for spatial analysis.

3.3 Parcel Data and Land Use Information

Hamilton County cadastral data, including parcel records and land use information, were obtained from the Cincinnati Area Geographic Information System (2005). There are a total of 406,527 parcel observations for Hamilton County, 256,946 which are classified as residential. Supplementary databases, including county subdivision, streets, railroads, and water features, were obtained from the 2000 TIGER line files from the U.S. Census Bureau (U.S. Census Bureau, 2006). This information is utilized to support the cartographic display of the information presented in this analysis.
Figure 1
3.4 Spatial Referencing of Sex Offender Data

Figure 1 Displays Hamilton County, Ohio, and its 45 political subdivisions, including its major cities and townships.

Once the study area was established, the first step in the analysis was to “spatially reference” the sexual offender records obtained from the HCSO. There are basically two ways to do this. First, offender street addresses (e.g., 123 Main St., Cincinnati, OH 45202) can be matched with the addresses assigned to parcel records for Hamilton County using a GIS. In effect, this process highlights the associated parcel as the location where the offender resides. Most of the records in this analysis were matched to the actual parcel of residence. Unfortunately, not all parcels could be found for offenders due to problematic addresses in the databases. A supplementary option for matching offender data to geographic locations is a process known as geocoding. Geocoding assigns latitude and longitude coordinates to the offender record and places a representative point on a map of Hamilton County. For this study, geocoding was accomplished in a commercial address-matching package, Centrus (Centrus, 2006). It is important to note that locations geocoded in this manner are not always as accurate as when using parcel matches, although the overall accuracy of these geocoding routines is typically quite good. Harries (1999) provided a more detailed discussion about the geocoding process and its associated sources of error. One hundred and twenty-one offenders were matched in this way, with the remaining offenders assigned to actual parcels (Figure 2).

Once these assignments were made, all parcels corresponding to a spatially referenced sex offender were flagged as active, simply to denote the presence of a matched record.

3.5 Spatial Referencing of School Data

The second step in the analysis was to spatially reference the school records obtained from the ODE. Because these records were, in general, of higher quality than the sex offender records, 100% were matched to the parcel. Therefore, the assignment of latitude and longitude coordinates was not necessary. Once the assignments were made, all parcels corresponding to a spatially referenced school were flagged as active, simply denoting the presence of a matched record.

It is important to note that the school parcel corresponding to the school address is not necessarily the only parcel associated with a school campus. For example, athletic fields, driveways, and parking lots must also be included when delineating a school campus. As a result, the second step for spatially referencing schools included a comprehensive examination of local land use codes for parcels surrounding ODE records. If parcels were zoned “educational,” they were given a secondary flag, denoting them as active school zones. Similarly, if the ODE schools were operated by a religious organization (e.g., the Archdiocese of Cincinnati), parcels associated with that campus were also flagged as active school zones. Figure 3 displays the results of these processes, highlighting all parcels determined to be affiliated with some type of educational activity catering to children 18 years of age or younger in Hamilton County.

3.6 Establishing a School Restriction Zone

The next step in the analysis was to identify the 1,000-foot buffer zone around schools (the ODE address-matched parcels). According to Ohio’s version of Megan’s
Law (House Bill 180, Senate Bill 175, and Senate Bill 5), which became effective on July 31, 2003, all registered sex offenders in the state are prohibited from establishing or occupying a residential premise that is within 1,000 feet of any school premises. This does not apply to bus stops, neighborhood parks, or any other zones that are not formally affiliated with a school. In addition, it is important to note that it is not a criminal offense for a registered sex offender to live within this school restriction zone (SRZ); however, if offenders are found to be residing in violation, they will be forced to move by court order. Where the SRZ is concerned, it is defined by the land parcel where the
school and/or activity is located, extending out from the parcel boundary to 1,000 feet. Given the definition of an SRZ, distance is assumed to be best reflected by the Euclidean (or straight line) measure. School restriction zones are derived in ArcView, a commercial GIS, utilizing this distance measure in the parcel/point buffer procedure. Identified SRZs are those areas where offenders are prohibited from residing. As noted previously, the ODE address-matched parcels are not only the parcels comprising a school campus. Therefore, an identical buffering procedure was implemented for the
secondary educational parcels denoted in the land use assessment, with the results of these efforts displayed in Figure 4.

A final step in the analysis was to identify all parcels which are zoned residential. Given questions about the exclusionary nature of SRZs for registered sex offenders, which effectively limit their housing options, it is important to identify those residential parcels in the county available to offenders.

Figure 4
4. Results

Offender residences and their spatial relationship to the identified school parcels in Hamilton County are assessed using the actual residential parcel of the offender as the unit of analysis (unless only a point location is known). These parcels are critical for determining whether sex offenders reside within any SRZ. Analytically, this assessment is carried out using the intersection procedure in ArcView GIS. Simply put, any parcel that intersects (or is in “contact”) with the 1,000-foot SRZ buffer is determined to be in violation.

4.1 Scenario 1: SRZs Based on ODE Address-Matched Parcels

In this first scenario, sex offenders residing within parcels flagged as “intersecting” the 1,000-foot boundary established for ODE matched parcels are highlighted as points. Similarly, offenders residing in parcels that were identified in the geocoding process and flagged with latitude and longitude coordinates are highlighted as triangles. As mentioned previously, the positional accuracy of the offenders and their associated parcels is somewhat less certain than those matched to the actual parcel. The results highlighted in Figure 5 suggest that 309 offenders linked to a parcel (points) are in violation and 31 offenders linked to latitude and longitude coordinates (triangles) are in violation, for a total of 340 offenders residing within 1,000 feet of a school educating minors.

4.2 Scenario 2: SRZs Based on All Parcels Affiliated With Education or Zoned Education

This scenario is more stringent than the first because it incorporates all education facility locations in the analysis and, thus, would be expected to produce a greater number of violations. Sex offenders residing within parcels flagged as intersecting the 1,000-foot boundary established for ODE matched parcels and all others determined to be affiliated with educational activities are highlighted as points. Similarly, offenders residing in parcels that were identified in the geocoding process and flagged with latitude and longitude coordinates are highlighted as triangles. The results in Figure 6 indicate that 450 offenders linked to a parcel (points) are in violation and 44 offenders linked to latitude and longitude coordinates (triangles) are in violation, for a total of 494 offenders residing within 1,000 feet of a school educating minors.

4.3 Housing Equity

Given the results of Scenarios 1 and 2, where it was determined that 31% to 45% of all registered sex offenders living within Hamilton County were residing in an SRZ, there are several concerns worth mentioning. First, it is safe to assume that the vast majority of offenders are familiar with Megan’s Law and understand that living within 1,000 feet of a school is prohibited. That said, why are so many offenders in violation? As noted previously, one hypothesis is that offenders purposefully place themselves in the restriction...
zones to access potential child victims (Walker, Golden, & VanHouten, 2001). Despite evidence that contradicts such speculation (Colorado Department of Public Safety, 2004; Minnesota Department of Corrections, 2003), the fact that so many offenders are in violation within Hamilton County remains a concern. A second potential explanation for the number of offenders living in restricted zones is a lack of available housing choices. More specifically, there are concerns that the overlapping restriction zones are so large that offenders cannot find suitable housing outside the SRZs.
4.4 Proximity Analysis for Housing Equity

In order to explore the second theory, a basic proximity analysis was performed on the cadastral data for Hamilton County. In all, 63% (256,946) of parcels in Hamilton County are zoned residential. Even when the more aggressive SRZs are applied to the residential parcels, 63% \( (n = 162,005) \) are still available to sex offenders for the establishment of a permanent residence. Naturally, there are potential problems with using a pure parcel count to determine housing equity under Megan’s Law because it does not address the
affordability of these residential options, particularly in the context of geographic exclusion and housing equity. If only high-rent residential options are available, convicted sex offenders might be forced to look elsewhere, effectively eliminating another swath of residential choices. To that end, two U.S. Census–based measures were utilized to assess both the affordability and the availability of housing options outside of restricted zones for the Hamilton County housing market. Specifically, Census 2000 blocks and their associated data (e.g., housing units, renter-occupied units, and vacancy rates) were used for analysis. Second, census data for average contract rent during the year 2000 at the block group (BG) level were acquired for analysis. These figures represent the average rent paid for rental units available in the BG. In order to calculate the distribution of non-restricted areas and their housing availability and affordability, a basic aggregation routine was administered.

Table 1 highlights several interesting results regarding housing availability for Hamilton County. Of the 373,393 housing units in the Census 2000 block tabulations for the county, nearly 63% are located outside of the most aggressive SRZs. Further, where renter-occupied units are concerned, 32.74% \( \frac{n}{H11005} \) are located outside the SRZ. To calculate a basic measure of availability for these units, the total number of renter-occupied housing units is multiplied by the rental vacancy rate for each census block. This represents the approximate percentage of available rental units, at any given time, for each block in Hamilton County. The results indicate almost no discernable difference between blocks located either within or outside the SRZ. In other words, approximately 50% of all available rental units are located outside the defined SRZs.

Clearly, availability is not the only concern. As mentioned previously, if the only units available in Hamilton County are upscale accommodations, the palette of rental choices becomes somewhat exclusionary. Figure 7 displays histograms summarizing a basic metric for tracking the affordability of rental units in the study area.

Unfortunately, this information is not provided at the census block level, so census block groups were substituted, which are aggregations of census blocks. Figure 7a illustrates the distribution of rents at the BG level across six rental categories. Notably, the rental range of $251-500 contains over 400 block groups within Hamilton County.
importantly, approximately 92% of all block groups in the county have an average contract rent less than $750. If one incorporates the SRZs into the analysis and examines available residential parcels in the average contract rent categories, a more refined level of detail is revealed. Figure 7b displays the number of parcels which are located outside
of the 163,005 non-restricted residential parcels, 58.4% are located within block groups with an average contract rent of less than $500 and 88.8% are located in BGs with rents less than $750. Obviously, this says nothing about the quality of these units, but it does reflect a reasonably affordable group of housing options for convicted sex offenders.

4.5 Spatial Distribution of Nonviolators

A final snapshot of the residential locations of convicted sex offenders is provided in Table 2. Displayed is a summary of the spatial proximity to an SRZ of offenders who are not in violation of the established 1,000-foot SRZ. In other words, this table displays a summary metric to evaluate the proximity of sex offenders not in violation of Megan’s Law to an SRZ. Of the 1,098 offenders utilized in this analysis, 604 were located outside of the most aggressive SRZ. However, Table 2 indicates that nearly 20% of the nonviolating sex offenders are located within 250 feet or less of the established SRZs and that over 40% are located within 500 feet of the SRZs. In sum, our results suggest that 88% of all registered sex offenders live within 2,000 feet of a school or school-related property in Hamilton County, Ohio.

5. Discussion and Conclusion

Given the results of this study, there are several important points worth further discussion. For example, why are so many convicted sex offenders living in restriction zones in Hamilton County? There is no clear-cut answer to this question; however, there are a number of challenges associated with the registration and tracking processes that contribute to these violations. First and foremost, there is often a knowledge gap between offender registry information and the actual spatial location of the offenders. Clearly, addresses for the offenders documented in this article are available. However, making the leap between obtaining tabular address data and tracking the actual location of offenders in geographic space, particularly where schools and their restriction zones are concerned, is a different
matter. In such instances, the need for geographic information systems and a moderate level of sophisticated analysis is required to establish these spatial relationships. Unfortunately, these types of resources are not always available to the agencies charged with enforcing Megan’s Law. Second, there are problems with the registry information itself. Often, there is a lack of consistency among states in classifying sexually oriented offenses. As a result, when convicted offenders move among states, many law enforcement agencies are unsure which offenders need to reregister (Matson, 1999). Similarly, the need to deregister offenders once they move is often overlooked, contributing to an out-of-date and inaccurate registry. Third, and more pragmatically, maintaining a comprehensive national, statewide, or local database of sex offenders is difficult, expensive, and time-consuming. In many jurisdictions, there is simply not enough required staff to handle the increased workload (Bedarf, 1995; Matson). A complicating factor is that states are mandated to develop sex offender registries by a federal directive (i.e., the Wetterling Act) but receive no federal funding to develop the required registries. Given the budget constraints of most state and local governments, the cost of these initiatives is a significant burden.

From a conceptual standpoint, the issues presented by the zoning restrictions in Megan’s Law have implications for other laws imposing zoning restrictions to regulate socially unacceptable practices. For example, there are many interesting parallels between the spatial restrictions mandated by Megan’s Law and the zoning laws associated with regulating sexually oriented businesses in many U.S. cities. Most notably, efforts made in New York City during the mid-1990s were designed to spatially restrict the operation of X-rated video stores, movie houses, and topless bars to certain locations in the city. Also included in the ordinance was language that restricted the operation of such establishments within 500 feet of residences, schools, houses of worship, or one another (Cameron, 2004; Myers, 1994a, 1994b; Papayannis, 2000; Ryder, 2004). Interestingly, the constitutionality of regulating these types of commercial activities was upheld by the U.S. Supreme Court in 1967. The decision was related to the City of Detroit’s ability to prevent pool halls, pawn shops, and other “questionable” businesses from operating within 1,000 feet of each other (Papayannis). Put in this context, there is a relatively clear relationship between land use regulation and zoning for adult entertainment districts and the social and/or geographic exclusion of convicted sex offenders. Both approaches attempt to control the spatial distribution of a perceived “threat” to the community—but often fail to formally consider the collateral consequences of such measures (McDonald, 1997; Paul, Linz, & Shafer, 2001; Tucker, 1997).

Finally, the social consequences related to the analysis presented above require an assessment of the methodological issues associated with this type of analysis. First, there is the need for quality control related to offender addresses. Although we were able to link 89% of the offenders to their actual parcel of residence, we were also forced to geocode 11% of the offenders’ addresses to determine their residential locations. Although there are no formal benchmarks established for this type of analysis, this does introduce a marginal, though perhaps significant, level of error into the analysis (see Ratcliffe, [2001], Harries [1999], and Grubesic and Murray [2004] for a more thorough discussion on the accuracy of geocoding routines). The requirement of a 1,000-foot school restriction zone is geographically specific. Therefore, geocoded locations that do not exactly correspond to the
offender’s residential parcel raise concerns regarding the accuracy of the analysis and issues pertaining to the enforcement of Megan’s Law.

A second concern deals with the distance measure used to determine SRZs. Some may argue that Euclidean (or straight-line) distance is an unfair metric, because it does not accurately represent the manner in which convicted sex offenders navigate urban environments. Proponents of this argument might suggest the use of network distance to provide a more fair and accurate representation of a restriction zone given the impossibility of straight-line navigation in many urban areas. However, from a computational standpoint, there are merits for using Euclidean distances. This computationally simple measure does not require a familiarity with issues like shortest paths, minimum cost paths, and a variety of other representational issues for geographic space (Miller, 1996; Miller & Wentz, 2003), as do their network-based counterparts. The use of network-based distance presents several analytical issues for calculating SRZs and their related distances. Should the analysis begin at streets adjacent to school parcels or perhaps the driveway entry to a school parking lot? Unfortunately, there are no clear-cut answers to these questions. Analysts must not only familiarize themselves with their local version of Megan’s Law to effectively make such decisions but also endeavor to update databases of school-related properties frequently to ensure the restrictions remain current.

This article has provided a basic methodological framework for mapping and tracking convicted sex offenders and establishing a school restriction zone to support the analysis of Megan’s Law in Hamilton County, Ohio. More specifically, the approaches developed in this article were used to explore issues of geographic exclusion pertaining to housing availability and the implementation of 1,000-foot restriction zones to support the enforcement of Megan’s Law. Results suggested that geographic information systems are extremely efficient and effective tools for evaluating school restriction zones in conjunction with the residential locations of convicted sex offenders. Finally, although the empirical analysis focuses on Ohio, adjustments to the parameters of the presented methodology can be made to accommodate variations in local and regional laws.

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