Critical Risk Zones: Violators of Megan Law
Praveen Maghelal, Miriam Olivares

Abstract
Sex offenders are required to register and notify their movement in the United States. In Brazos County, Texas, the child safety zone is within 1,000 feet of premises--such as schools, day-care facilities, playgrounds and parks, etc.--where children generally gather. A GIS can be a useful tool to map the locations of these offenders spatially. This study creates a Web-based tool for the law enforcement officers to locate the offenders residing in, on, or within the child safety zone in the Brazos County, Texas. The Department of Public Safety currently lists 164 sex offenders in the zip codes of Brazos County. Spatial query from the maps generated showed that about 55.41 percent of the offenders resided in the Child Safety Zone. Furthermore, Critical Risk Zones (CRZ) was created for each offender to show locations of immediate and lateral risk that overlap the Child Safety Zone.

Introduction
In 1994, a new federal law re-shaped the way law enforcers were managing Sex Offenders in the United States. Sexually Violent Offenders Registration Act of 1994 was enacted to require sex offenders to register and notify their movement in the United States. Individual information such as the name, age, gender, height and weight; race along with details of offense are provided to the state authorities such as the State Department of Public Safety. Megan's Law, enacted in 1996 by President Clinton after a brutal rape and murder of a 7 year-old girl, directs the state departments to release this information as a part of public notification system (2004, Beck and Davis). According to Megan's Law, residents with 3 blocks of small sub-divisions and 1-mile of large sub-divisions are notified if a new sex offender moves into their area. These notification systems exist in all the states, and makes mandatory for the offenders to inform respective state authorities on their movement anywhere in the United States. This information is then made public to notify the community of the offender's details.
Texas Department of Criminal Justice and its Parole Division, in coordination with Police Departments, are in charge of registered sex offenders management and compliance. As a part of the regulation, sex offenders provide information such as name and address, to the local law enforcement officials in the locality they reside or move into. This information is a part of public domain, and is easily accessible to the community. This information makes it possible for the law enforcement officials to carry a routine enquiry on their current status of residence, and helps to keep a check on their movement. Registered sex offenders are independent to move and work within or among the states with the discretion of the employer. Code of Criminal Procedure, SB1054, Article 42.12, Section 13B (Texas Legislature Online, Seventy-Eight Legislature) states the child safety zone to be “within 1000 feet of premises such as school, day-care facility, playground, public or private youth center, public swimming pool, or video arcade facility, places where children generally gather.” As per the regulation, sex offenders were required not to go in, on or within this child safety zone, until the recent amendment in May of 2003. By this amendment, this restriction does not apply to a defendant while the defendant is in or going immediately to or from a (1) community supervision and corrections department office; (2) premises at which the defendant is participating in a program or activity required as a condition of community supervision; (3) residential facility in which the defendant is required to reside as a condition of community supervision, if the facility was in operation as a residence for defendants on community supervision on June 1, 2003; or (4) private residence at which the defendant is required to reside as a condition of community supervision (Texas Legislature Online, Seventy-Eight Legislature; SRC-LBB S.B. 1054 78(R)Bill Analysis).

Registered sex offenders in Texas are supervised by (1) Frequent contact with supervision officer, (2) Restrictions on community activities, (3) Mobility restrictions, (4) May have special conditions of release and (5) Mandatory treatment. This paper attempts to study the mobility restrictions of registered sex offenders. The offenders are restricted from residing in, on or within the child safety zone (1000 feet). The mobility restriction in the child safety zone varies among different states in US. Texas hopes to mandates a 1000 feet distance from the premises of children’s congregation by September 2005. Presently, Texas stipulates anywhere from 200 - 500 to 1000ft which may be standardized to 1000ft for all offenders.
The movement of registered sex offenders from county to county or state to state with varying laws of distance for their child safety zone makes it difficult for the offender and the supervising authority to exactly determine the distance between the residence of the offender and the child safety zone. Current trends in modern technology have made feasible to closely supervise the mobility restrictions of the registered sex offenders. Geographical Information Systems (GIS) provides a powerful tool to map these locations, update the data with less time-consumption, and frequently check the violators residing in the child safety zone.

This paper attempts to (i) create a tool accessible easily for the law enforcement officers to locate the registered sex offenders residing in, on or within the child safety zone in Brazos County, Texas. Maps generated using GIS will help identify the violators who reside in, on or within the child safety zone such as schools, parks and daycare facilities in Brazos County, Texas and (ii) generate the zone of influences identified as Critical Risk Zones (CRZ) for each registered sex offender. These risk zones apply the standards suggested by the Megan’s Law of 3 blocks and 1-mile for small and large sub-divisions. This suggested system is expected to help the law enforcers providing, in a timely manner, a proximity scenario of offenders residence related to a missing child or person, in case of any disappearance.

Brazos County has a population of about 152,000 (US Census, 2000). It comprises population of the twin cities of Bryan and College Station, and Wellborn. About 88% of the population of Brazos County reside in the cities of Bryan and College Station.

**Background**

The Department of Public Safety lists 164 registered sex offenders in the zip codes of Brazos County. This includes all names of each offender (including alias names), date of birth, gender, race, current residence address, information pertinent to the offense, and a latest photo with other information. Without a geographical system on place to track registered sex offenders, the Cities of College Station and Bryan for long have not been able to check the violators who reside in, on and
within the child safety zone. This circumstance could result in risk of increased crime in the county. It is thus necessary to provide the law enforcement authorities with tools that can help them to locate violators residing in neighborhood areas in, on or within child safety zone.

Various researches inconclusively argue the pros and cons of allowing these offenders to reside in stable environment. This study does not discuss the social setting of this complex matter. We plan to put forth the law stated by the Texas Legislature as primary decision making criteria. The tool developed is hypothesis to help locate the registered sex offenders in the child safety zone and, based on the policy governing the Texas Sex Offenders, a violator of the restriction zone may or may not be asked to relocate at the discretion of the law enforcement authorities. Moreover, in case of an occurrence of child kidnapping within a child safety zone, this tool can help to identify all registered sex offenders residing in an area nearby to the crime zone.

By using the Texas Case Classification and Risk Assessment tool, community supervision officers can assess and establish three different levels of risks associated to each registered sex offender. The ranks, according to risk and needs, are high, medium and low (Texas Department of Criminal Justice Website). For “High Risk” offenders, the Department of Public Safety needs send postcards to one-mile radius of a non-subdivided area and three-block radius of a subdivided neighborhood within 7 days of release and within 10 days of move of a sex offender in their neighborhood (www.sexoffender.com ). The tool we are proposing will also provide the High, Moderate and Low Risk Zones around the premise of each sex offender in the Brazos County.

Spatial information for Brazos County is created by geocoding addresses of different components to analyze, or by using shapefiles provided by the City of Bryan GIS Coordination. The 2 main themes developed on this project were the Child Safety Zone (as part of a graduate course project) and the Risk Zone for each offender (future scope). These zones will be overlaid to create the Critical Risk Zones that are leveled by risk -High, Moderate and Low- and by proximity -Immediate and Lateral risk- (Future scope). The Child Safety Zone analysis will help to locate the registered sex offenders who may be unaware of violating the Texas state law of mobility restriction. The law enforcement
officers can use this information to direct those violators to relocate themselves outside the Child Safety Zone.

AIM 1:

This study required the geocoding of daycare facilities in Brazos County, schools of College Station and the residences of registered sex offenders. The 'Child Safety Zone' was created by buffering and merging the buffers around the premises where children congregate (Fig 1.)

![Methodology used to develop tool to locate Sex Offenders](image)

The spatial data of Brazos parcels was used by geocoding (single field (file)) the “USaddress” field with the address database files of the daycare centers and the registered sex offenders in Brazos County, created from the information obtained from the World Wide Web:

- Department of Family and Protective Services, Child-Care Licensing Division: [http://www.tdprs.state.tx.us/Child_Care/About_Child_Care_Licensing/default.asp](http://www.tdprs.state.tx.us/Child_Care/About_Child_Care_Licensing/default.asp), and
Matching interactively, the unmatched addresses were searched and selected. About 12 of the 164 addresses of the sex offenders were either located out of the Brazos County or could not be located in the Brazos Parcels file. The layers with information of parks and schools of Bryan and College Station were buffered for a distance of 1000 feet (Fig. 2).

Residence restrictions for the sex offenders vary from state to state in the US. Illinois’ least restrictive distance is 500ft, whereas California restricts living of sex offenders within _ mile of schools (Levenson, Cotter). Texas law allows these restrictions to vary for each offender, depending on the type of the offense committed. Presently the parole board assigns this distance based on the individual’s offense. This distance can be anywhere within or equal to 1000 feet. This makes it difficult for the law enforcement officials to keep the check on the movement of these offenders. To alleviate these difficulties, the Texas legislature has been forwarded a petition to make the restrictive distance uniform throughout the state of Texas. A call by Marta Wong in the Texas Senate to make this strict 1000feet is swiftly moving through senate to be passed as law. Senator Wang has suggested the restriction distance to be 1000ft for all offenders from parks, schools, daycare centers, and all other places where children congregate. 1000 feet is a distance to be stipulated in Texas from September 2005 for the child safety zone or registered sex offender restriction zone. Henceforth, this study foreseeing the future employs the 1000 feet for the CSZ’s around schools, parks and daycare centers.
This geo-processing provided layers of information for the CSZ. These layers were appended (Fig. 3) and merged together to form the new dissolved layer of all the buffers that formed the Child Safety Zone. The playgrounds, public or private youth centers, and public swimming pools are a part of the schools in Bryan and College Station. Spatial Query was made to search the sex offenders that were located in the CSZ (Fig. 4).
AIM 2:

After the death of Megan Kanka, by a convicted sex offender living across the street in New Jersey, President Clinton signed a law requiring all states to make the information of pedophiles and rapists available to public (Engeler). After this law was signed in 1994, residents within 3 blocks in small sub-divisions and 1-mile radius in large sub-divisions are informed by authorities about the residence of a new registered sex offender. From the reports from articles in newspaper, it can be observed that in most of the recent and past cases of child abduction, rape and murder, the sex offenders were residing in proximity to the child. Lack of tools to immediately locate the offenders who could have access to abducted children gave the offenders enough time to rape and murder these innocent victims. If the law enforcement officials had tools to locate the offenders living in immediate proximity, at least some of these kids may have been saved just in time. This study thus attempts to provide such a tool to locate registered sex offenders in close proximity to a kid or person who is reported missing.

Researchers of this study utilized the standards stated by the Megan’s Law as the base line for this analysis. The Critical Risk Zone of each sex offender was based on the distances specified in the Megan’s Law. Two zones: (1) Immediate Risk Zone: 3 Block distance from the residence of the offender and (2) Lateral Risk Zone: 1-mile distance from the residence of the registered sex offender were created as ‘area of influence’ for each offender. These zones may or may not overlap for two or more offenders based on the distance between each other. The proposed tool will help the law enforcement officials to immediately locate the registered sex offenders residing in close proximity to the location of a child reported missing. Using GIS, the location where the child was reported missing can be geo-referenced. Upon clicking that location, a list of registered sex offenders that lie within the immediate risk zone and lateral risk zone can be generated for the purpose of investigation. The zones here are classified based on the risk level and proximity, being categorized as the following six divisions:

(i) Low Risk Immediate Risk Zones and (ii) Low Risk Lateral Risk Zones
(iii) Moderate Risk Immediate Risk Zones and (iv) Moderate Risk Lateral Risk Zones
(v) High Risk Immediate Risk Zones and (vi) High Risk Lateral Risk Zones

The risk level analysis provides a platform from where authorities could identify individuals most likely to be involved in a sex related crime. The risk level-mapping tool can provide spatial information to lead to a criminal before the crime is committed, or provide some indication to where to direct the investigations after a crime is committed.

MAPS

The following series of maps are the result of GIS analysis that comprises databases regarding registered sex offenders, premises where children gather and geographical references:

1. Map of Parks, Schools & Day Care Center in Brazos County
2. Map of Child Safety Zone in Brazos County
3. Map of Violators of Child Safety Zone in Brazos County, View 1
4. Map of Violators of Child Safety Zone in Brazos County, View 2
5. Map of Residential Locations of Registered Sex Offenders in Brazos County
6. Map of Low Risk Immediate Risk Zone
7. Map of High, Moderate and Low Immediate Risk Zones
8. Map of High, Moderate and Low Lateral Risk Zones
Map 2. Child Safety Zone in Brazos County

Brazos County Sex Offenders

Symbology
- DAY_CARE
- BRYAN_SCHOOLS
- COLLEGE_SCHOOLS
- BRYAN_PARKS
- CS_PARKS
- 1000ft Buffer

Project Managers: Miriam Olivarres & Praveen Maghelal
Datum: NAD 83  Projection: Lambert Conformal Conic  Units: Feet
Map 5. Residential Locations of Registered Sex Offenders in
Map 6. Low Risk Immediate Risk Zone
Map 7. High, Moderate and Low Immediate Risk Zones
Result

The descriptive analysis of the registered sex offenders residing in Brazos County, Texas showed that 73% of the offenders were white. Over 10% of offenders have committed a crime at least 2 or more times, about 5% of the offenders are females, over 10% of the offenders are “HIGH” risk offenders, 44.2% offenders were aged between 15-30 years old when the crime was conducted and 35% of them were between 30-45 years old. Over 50% of victims are aged between 15-25 years old and over 80% (131) of the victims were females or ladies. The maps and the spatial query showed that about 55.41% of the offenders resided in the Child Safety Zone (Fig. 5). This percentage of sex offenders was higher than expected. This percentage may vary with continuous moving in or out of the offenders in Brazos County. Also, the child safety zone of 1000ft is used to determine the percentage of violators.

![Fig. 5 Percentage of Registered Sex Offenders Residing in, on or within the Child Safety Zone.](image)

Discussion and Limitation

The high percent of violators living in the child safety zone needs to be addressed immediately. The law enforcement authorities as mentioned before in the paper need to work on the outcome of the debate, as, if the sex offenders should or can be allowed to be a part of the...
community environment. There has been less research that can support or contradict the treatment and re-involvement of offenders in the community setting. At the discretion of the authorities, the violators can be notified to relocate themselves and can also be suggested with the locations that lie outside the Child Safety Zone. Critical Risk Zones can be used to prioritize the offenders who need to relocate themselves. High-risk offenders can be advised to move before the offenders and so to follow, depending on the discretion of the law enforcement officials.

The City of Bryan GIS Coordination, through the Police Department Website, has launched an ArcIMS platform where law enforcers can access the spatial geo-referenced information regarding registered sex offenders, child safety zone and geographical reference. Partial spatial information generated is also available for general public; the aim is to create awareness among the community about registered sex offenders residence location in reference to their homes, work places, as well as places that they visit in a regular basis. The website is providing a sense of geographical reference to law enforcers and our community. Immediately after the Press Release of the website in May 2005, the viewer-ship increased tremendously compared to all other months in the year 2005 (Fig. 6).
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*Fig. 6 and Table 1* Average hits and monthly totals for Jun 2004 to May 2005

The release was announced on May 5th of 2005. The hits on this web-based tool increased from average of 2-3% to 10-39% immediately after the press release (Fig 7). Public awareness of the website is hoped to increase the awareness of the community of the probable dangers and avoid occurrence of instances of child rape and molestation in future.
# Daily Statistics for May 2005

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Fig. 7 and Table 2 Daily Statistics for the Month of May 2005
This paper does not take into consideration the psychological analysis of the offenders and their attitude towards community living. The study focuses on if the offenders knowingly or unknowingly reside in the mobility restriction put forth by the Texas Legislature. Addition of psychological variables may provide a better model to deal this issue supported by significant research.
Acknowledgement

We thank the City of Bryan GIS Coordination for the opportunity to be part of this project, We also thank Mr. Gustavo Roman, Director of, City of Bryan GIS Coordination, for putting up with us and all over queries. We would like to acknowledge the willingness of law enforcers to share with us their point of views and knowledge to make this study possible. Last but not the least, we would like to thank Dr. Douglas Wunneburger, Assistant Research Scientist/Visiting Assistant Professor at the Department of Landscape and Urban Planning, Texas A&M University, for his guidance and patience throughout the project.
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