Research
on

Spatial Distribution of Crime:
A Case Study on Shah Ali Thana, Dhaka Metropolitan Area

URBAN DEVELOPMENT DIRECTORATE
MINISTRY OF HOUSING AND PUBLIC WORKS
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
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Acknowledgement

It is our pleasure to express the heartiest satisfaction that Urban Development Directorate (UDD) has successfully completed a Research Work entitled "Spatial Distribution of Crime: A Case Study on Shah Ali Thana, Dhaka Metropolitan Area". This research work is the first of its kind published by UDD.

Executive Summary

Any unlawful activity is considered as crime. The penal law defines crimes and allocates penalty for every type of crime. People of urban areas, therefore, always are likely to fall victims to many types of crimes. Crimes committed in urban areas include hijacking, murder, kidnapping and abduction, prostitution, burglary, pick-pocketing, rape, smuggling and consumption of drugs, smuggling of gold and arms, physical abuse of domestic servants, acid throwing on women, fraud and deceit, and white collar crimes. Crime has a locational pattern. Hence, this research has been undertaken to find out land use relationship, identify the location of crime hot spot, and also to rank the crime hotspots. The newly created Shah Ali Thana under Dhaka Metropolitan Police has been taken as study area as there is diversified land use and also frequently different types of crime occur. The study reveals that drug related crime (56.96 percent) is the most frequent in Shah Ali Thana and followed by women and children torture (10.00 percent). Data indicate that most of the crimes are occurred in residential areas (52.44 percent) and followed by areas near roads and railway line (22.22 percent). Most of the crimes (72 nos among 225 crimes) are occurred within 1 to 2 minutes travel time from Shah Ali Thana and followed by 3 to 4 minutes travel time (64 nos out of 225 crimes). Analysis shows that most of the crimes take place near Shah Ali Mazar area and the next highest crime point is market area. So, the distance from Thana has no influence on occurrence of crime. It is expected that this study would help in understand the spatial pattern of crime and also to mitigate the occurrence of crime.

Members of the Research Team

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01	Ahmed Akhtaruzzaman	Senior Planner (Training, documentation and Planning Cell)	Senior Researcher
02	Quazi Md. Fazlul Haque	Senior Planner (Regional Planning)	Senior Researcher
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CHAPTER-01

1. Background of the Study

Dhaka being the capital city of Bangladesh has become the focal point of growth and development from time immemorial. The city has strong links with the surrounding countryside and people keep pouring into it from all over Bangladesh in search of employment, education, business, shelter, etc. However, it is noteworthy that most dwellers, whether rich, middle class or poor are first generation city dwellers. According to a study carried out in the eighties about 80% household heads were migrants. The growth of population has created pressure on cultivable agricultural land and there is lack of employment in the agricultural sector. Direct and disguised unemployment have become a problem in villages and because of unemployment and poverty thousands of people from villages come to urban areas all the time. But the country's cities cannot provide accommodation to them properly. Except in a few planned residential areas like Gulshan, Dhanmondi, Baridhara, Uttara, Banani and Cantonment, most of the city appears to be crammed with slums which are idle place of crimes.

Dhaka is a city packed with young people. Very few cities of the world can match Dhaka in this regard. About 40% of the population is below 15 years while another 22% is in the age group of 15-24. Despite the high dropout rate and inadequate facilities, the student population of the city is high and students constitute an important factor in city life. The deterioration of discipline and teaching standards in educational institutions, a general breakdown of moral values in society, lack of employment opportunities, shrinking scope for taking part in healthy outdoor and indoor activities (such as games and sports, outings, libraries, cultural activities etc.) are among the factors pushing a large part of the juvenile population towards violence, hijacking, drug addiction and other criminal and anti-social activities.

A vast majority of youths also belong to poverty-stricken families. They are not only deprived of basic amenities of life such as food, clothing, education, shelter, medical care etc. but are also forced to fend for themselves against exploitation while earning for their families from a very young age, whether as child labourers or prostitutes, drug peddlers, beggars, etc. associated to increase of crimes.

1.1 Crime and Violence in Bangladesh

Bangladesh currently has one of the highest rates of population growth in the world. The country now has more than 14 crore people and 65 percent of its population live below the poverty line. The rate of literacy is low and the average income is 400 dollars per year. The growth of population has created pressure on cultivable agricultural land and there is lack of employment in the agricultural sector. Direct and disguised unemployment have become a problem in villages and because of unemployment and poverty thousands of people from villages come to urban areas all the time. But the country's cities cannot provide accommodation to them properly.

In view of the above problems frequency of crimes in Bangladesh keep increasing. Serious types of crimes take place and people become victims of new types of crimes. Law enforcers have been encountering increasingly tougher challenges in controlling and preventing crimes. The number of police is not adequate. Moreover, policemen lack good training and sufficient logistics support throughout. Finally 'politico-police-criminal' triumvirates have become active in Bangladesh. Because of these reasons the police cannot play a strong role in controlling and preventing crimes.

Crimes in Urban Area :

The socio-economic reality of urban areas is totally different from that in rural areas and hence the types of crimes committed here are different. All banks, shopping centres, and government offices are located in the cities. People often carry hard currency, females at times wear valuable ornaments, and huge amount of money is transacted for business purposes regularly. All these realities create huge opportunities for criminals to commit different types of crimes, something not so evident in rural areas. In fact, people of cities experience two types of realities, one during daytime, and another at night.

In megacities like Dhaka and Chittagong, professional criminal gangs commit various types of organised crimes, sometimes involving large amount of money. People of urban areas, therefore, always are likely to fall victims to many types of crimes. Crimes committed in urban areas include hijacking, murder, kidnapping and abduction, prostitution, burglary, pick-pocketing, rape, smuggling and consumption of drugs, smuggling of gold and arms, physical abuse of domestic servants, acid throwing on women, fraud and deceit, and white collar crimes.

Reasons for Crimes Occurring in Dhaka City :

Shafi(2010) identified a total of six reasons, among them 'poverty leads to crime' was at the top, followed by criminals receiving protection from power holders, unsatisfactory relations among police and judiciary, and innocents end up in jail, criminals going unpunished and corruption in the police department.

Some Examples:
-A gang of four hijacked a dark blue Toyota car at around 9:30 p.m. when Arif Khan, manager of a multinational company went to Khilgaon on October 19, 2005 to attend a family gathering.

-A gang of four armed with pistol and cleaver hijacked a white Toyota corolla from Chowdhurypara, Khilgaon at around 11 pm on December 29, 2005.
-QuibriaNomani'swhite Toyota was hijacked at around 11:30 pm from near Gulshan circle 1 on January 12, 2006. The carjackers attacked the driver and sped away finishing their operation within half a minute.

-Enamul Hauqe when lost his car at 11:30 pm on January 13, 2006 on his way back from a party in Gulshan, he stopped at a friendshouse in Banani. A gang of four youths followed him in a silver coloured car, dragged him down from the car and fled with the vehicle.

1.2 Definition of Crime and Violence

Any unlawful activity is considered as crime. The penal law defines crimes and allocates penalty for every type of crime. The Criminal Procedure Code sets out the legal concepts needed to identify real offenders, who commit crimes. Broadly speaking crimes are classified into two categories: those related to the human body (such as rape, murder etc.) and those related to property (such as theft, robbery etc.). These two types of crimes are common in almost all countries and societies.

Offences are classified into various categories by the Penal Code of Bangladesh. All offences ultimately fall into the category of either offence related to body or property. The Penal Code provides for offences against state; offences relating to the Army, Navy and Air Force; offences against public tranquility; offences relating to public servants, offences relating to election; offence against public justice; offences relating to coin and govenunent stamps; offences relating to weights; offences affecting public health, safety, convenience, decency and morals; offences relating to religion; offences affecting human body; offences against property; offences relating to documents and to trade or property marks; offences relating to marriage; offence of defamation; offences affecting human body; murder, hurt, wrongful confinement, assault, kidnapping, abduction, slavery, forced labour, rape, causing miscarriage etc.

Offences against property include theft, extortion, robbery, dacoity, criminal misappropriation of property, criminal breach of trust, receiving of stolen property, cheating, mischief, criminal trespass etc.

However, the definition of crimes presented below are not given from a legal perspective, but must be seen rather as an attempt to remove the usual concept and understanding of the term by the people of Dhaka City. Each definition of crime contains one or two incidents copied from dailies(Salma,2010).

Burglary often just called "breaking and entering" is a crime related to theft. It typically involves someone breaking into a house with intent to committing theft. But this term need to be followed by the definitions of Dacoity which means armed robbery and is the anglicised Indian subcontinent version of the word dakaethee which comes from dakoomeaning armed robber.

Extortion is a criminal offence, which occurs when a person obtains money, behaviour, or other goods and or services from another by wrongfully threatening or inflicting harm to his person, reputation, or property. Extortion is distinguished from robbery. In robbery, the offender steals goods from the victim whilst threatening him with immediate force. In

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extortion, the victim willingly turns the goods over to avoid a threatened later violence. Hijacking or highjacking is forcible robbery from, or seizure of, a vehicle in transit. Historically the term was used to refer to robbery of trucks or other land motor vehicles (carjacking) and aircraft skyjacking. The term arose from someone wanting a lift on a truck calling "Hi, Jack" (the exclamation plus the name), but eventually was used as a trick by robbers. 'Hijacking' somehow has become the most commonly used term in Bangladesh and utilized to describe various forms of forced robbery or seizure of personal materials by criminals or perpetrators in everyday life. The range of materials taken by force varies from small personal belongings like purses, watches, jewellery, mobile phones to bicycles, motorcycles, cars etc.

Carjacking (or theft of vehicles) has become rampant in the city as well-organised gangs can easily make fake documents for stolen cars with the help of a section of unscrupulous officials and staff of Bangladesh Road Transport Authority. Carjacking occurs usually as was learnt through the testimony of victims.

Police records show that total of 1,108 incidents of car thefts occurred in the first 11 months of 2005 while 1,361 incidents took place in 2004. According to concerned sources, dishonest staff of BRTA, the ports and in some cases even the police are involved in car stealing.

Kidnapping (abduction) is taking away of a person against the person's will, usually to hold the person in false imprisonment (confinement without legal authority) for ransom or in furtherance of another crime. In modem usage, kidnapping or abduction of a child is often called child stealing, particularly when the intent is not ransom, but to keep the child permanently. The word "kidnapping" was originally "kidnapping", in other words slang for 'child stealing', but is no longer restricted to the case of a child victim. Child abduction/child stealing can refer to children being taken away without their parents' consent, but with the child's consent. In England and Wales abduction is to take away a child under the age of 16 without parental consent.

Murder is the crime of a human being causing death of another human being, without lawful excuse, and with intent to kill or cause grievous bodily harm. In most countries it is considered the most serious crime, and invokes the highest punishment available under the law. A killing may not be legally classified as murder, but can still be morally considered by some as a murder. For example, critics claim that death penalty morally counts as a murder. In Bangladesh angry mobs often beat people to death.

Rape under Section 375 of the Penal Code, 1860, a man is said to have committed the offence of raping a woman if he commits sexual intercourse with the woman under the following conditions:

(a) without consent of the woman, (b) against her will, (c) with her consent but that being

obtained by way of threat, undue influence or coercion, (d) with a deceptive consent in which the man acts as if he is the legal husband of the woman, (e) with or without consent of the woman when she is a minor, (f) with or without consent of the woman when she is his legally married wife but aged below thirteen.

Threat is an unwanted (deliberate or accidental) event that may result in harm to an asset. Often, a threat is exploiting one or more known vulnerabilities and can cause insecurity. A threat is also an explicit or implicit message from a person to another that the first will cause something bad to happen to the other, except when certain demands are met. Often a weapon is used; and examples of such cases are robbery, kidnapping, hijacking, extortion, blackmail.

Theft (also known as stealing) is in general, the wrongful taking of someone else's property without that person's willful consent. In law, it is usually the broadest term for a crime against property. Theft is usually defined as the unauthorised taking or use of someone else's property with the intent to permanently deprive the owner or the person with rightful possession of that property or its use.

Clash between political parties or students include unruly fights among rivals on different issues or interests. Political parties with their activists wing are found to have involvement in violent happenings as a result of political motivation.

1.3 Objective of the Study
The objectives of the study are as follows:

1. To find out land use relationship of crime occurring in the area.
2. To identify the location of crime hot spot.
3. To rank the crime hotspots of the study area.

CHAPTER-02

<h1 style="text-align:center">CHAPTER-TWO</h1>

2. Methodology of the Study

In order to achieve the objectives of this study as described in chapter one, the following methodology was followed:

2.1 Selection of Study Area

The Shah Ali thana was selected for the study. This is a new police station created on 25 June 2005. It has a wide a variety of land use and a diverse physical character. There is residential, commercial and mixed land use in the area, as well as a number of educational institutions. Posh residences of the elite of the city adorn a part of the area, but there are also large tracts of open spaces in other parts. Some portions of the area are planned, the rest has developed in an unplanned, organic fashion. This varied quality of the area would suit the purpose of the study.

2.2 Collection of Data and Information

Literature Survey: Survey of relevant literature had been conducted for obtaining a thorough understanding of the problem. Special attention was given to spatial distribution of crime in this study with data from secondary sources. Relevant reading materials have been collected from website resources; and police department and relevant literature in Bangladesh.

Collection of Data from Shah Ali Thana and Compilation: Firstly, the procedure of maintaining the records relating to occurrence of crime data by Shah Ali Thana was observed. Then a survey format was developed to collect relevant data relating to occurrence of crime including its locations from Shah Ali Thana for the period under study i.e., from January 2012 to December 2012 and data was collected accordingly. A checklist of the aspects included in the survey format is presented in Annexure - 'A'. After gathering data from Shah Ali Thana, it was sorted and compiled, and was prepared for field investigation.

Collection of Base Map: A hard copy of digitized road network map had been collected from Decode Ltd.

Reconnaissance Survey: In order to familiarize with the field condition reconnaissance visit was made. This helped to obtain preliminary information about land use, road network of the study area.

Field Survey: Then field survey was conducted to identify the locations where incidents of crime occurred, and broad land use of the study area. During the survey work, location of police station also been identified. Broad land use of the area was delineated in cluster according to their characteristics rather than plot to plot identification (such as residential

area, commercial area etc.).

2.3 Digitization of Spatial Data and Database Preparation

Spatial data collected from field survey and other relevant sources were then digitized and prepared for further progress and analysis. The different steps of digitization and database preparation are discussed below:

Digitization and Editing of Spatial Data: The base map collected from secondary source has been digitized as different coverages as Shape Files. Errors in the digitized maps were removed and have been prepared for further analysis.

Generating Shortest Route: Shortest route distance from the Thana to the point of occurrence crime was also generated.

Calculating Travel Time and Generation of Polygon: After generating shortest route, travel time Thana to different locations of occurrence of crime had been calculated from field survey. On the basis of the travel time, various polygons were generated to determine the area covered by different travel time.

Determination of Locations of Crime with Respect to Travel Time: Then travel time to different location of crime from police station has been identified.

Generating Hexagon Based Database: The whole study area was overlaid with a number of hexagons of 0.88 m diagonal for analysis.

2.4 Data Analysis and Interpretation

Collected data were then analyzed and interpretation was made. Different steps of data analysis and interpretation are discussed below:

Identification of Site Characteristics: Characteristics of the site where occurrence of crime took place was identified through field investigation. Characteristics include use of structure/land such as residence, shopping centre/shop, school etc. Besides, during reconnaissance survey and field survey, observation was made for identifying site characteristics of the whole area.

Analysis of Spatial Pattern of Occurrence of Crime: Along with calculating the travel time to location of occurrence of crime from police station, clustering of location of occurrence of crime has been made to identify the crime hot spots within Shah Ali Thana through hexagon-based analysis.

Computing Composite Score of Occurrence of Crime: Each type of crime was given a value on basis of its severity. Then type and frequency of crime were combined to rank the hexagon to determine the most crime prone area of Shah Ali thana.

Identification of Crime Hotspot of Shah Ali Thana: The obtained value of composite score is then categorized into twenty five percent interval and categorized according to determine the crime hotspot of Shah Ali Thana.

2.5 Preparation of Report

All the analyzed data and information were compiled and presented in tabular form; and maps were prepared. All the tables and maps have been complied and a comprehensive report has been prepared describing the analyses, tables and maps.

CHAPTER-03

3. Data Analysis and Findings

Analysis and findings from the study are described in the foregoing sub-sections:

3.1 Occurrence of Crime at Shah Ali Thana

Various types of crimes have been occurring at Shah Ali Thana. Among them, many incidents of crime have been reported to the Thana. A total of 460 crimes have been reported to Shah Ali Thana during June, 2012 to May 2013. All the crimes reported during this period have been categorized into 16 types. Category other crimes include a combination of several crimes which had been occurred at the same place at a time. This different combination of the following crimes includes larceny, scuffle, extortion, encroachment towards river, oppose to government work, injury, threat, cheating, physical injury, destruction, serious injury, run away the accuse, attempt to murder, false identification, arson, forgery, snatching provocation to suicide and false trade mark use. The Table 01 shows below the reported crime of Shah Ali Thana during this period.

Table-01: Reported Crime at Shah Ali Thana during June-2012 to May-2013

Sl No.	Types of crime	Number	Percentage
1	Drug	262	56.96
2	Women & Children torture	46	10.00
3	Arms related	10	2.17
4	Larceny	23	5.00
5	Burglary	3	0.65
6	Fake dollar transaction	4	0.87
7	Acid suppression	2	0.43
8	Human trafficking	7	1.52
9	Explosive elements related	3	0.65
10	Break the vehicle	1	0.22
11	Cheating	2	0.43
12	Road Accident	2	0.43
13	Robbery	2	0.43
14	Murder	2	0.43
15	Extortion	1	0.22
16	Others	90	19.57
Total		460	100.00

Source: Shah Ali Thana, 2013

Table-1 illustrates that among all the reported crimes, incidents of drug related crime is the highest during this period, which is more than fifty percent (56.96) of total reported crimes. The next frequent crime belongs to others crime, which is 19.57 percent of total reported crimes. Followed by women and children torture (10 percent), larceny (5 percent), arms related (2.17 percent) and human trafficking (1.52 percent) respectively. Share of the rest of the reported crimes is relation to occurrence of total crime is very insignificant, which is less than one percent each. Figure 01 shows the location of reported crime at Shah Ali Thana.

Although, a total of 460 crimes had been reported to Shah Ali Thana during June, 2012 to May 2013, during field visit 57 locations had been identified where 225 nos of crime occurred.

Figure 01: Location of Crime Occurrence at Shah Ali Thana
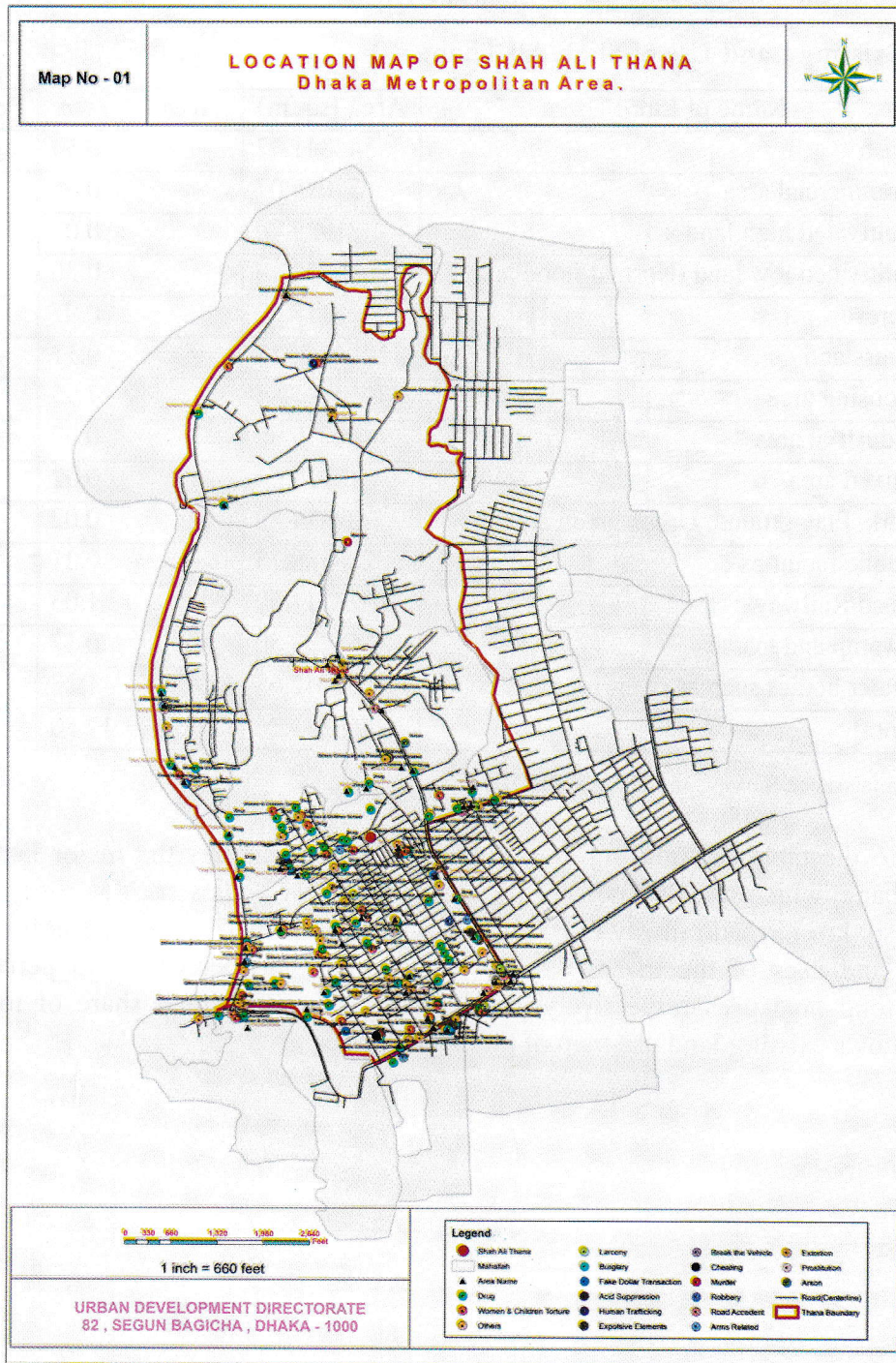
Source: Field Survey, 2013.

Figure 01: Location of Crime Occurrence at Shah Ali Thana

Source: Field Survey, 2013.

3.2 Existing Land Use of Shah Ali Thana

There are various types of land use existent in the Shah Ali Thana. As many as fourteen categories of land use have been identified in Shah Ali Thana during reconnaissance survey. Table 02 depicts the existing land use of Shah Ali Thana.

Table 02: Existing Land Use of Shah Ali Thana

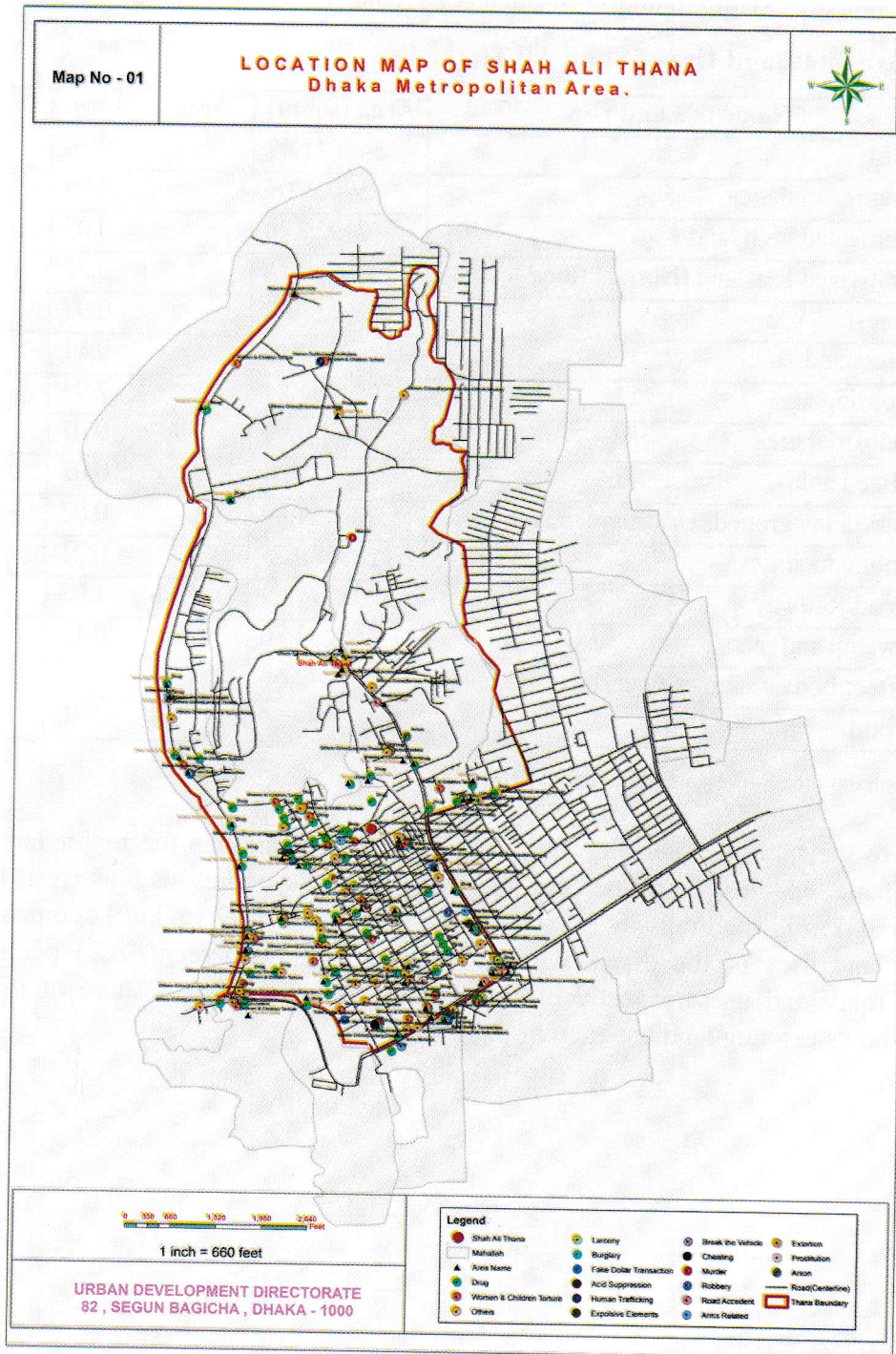| Sl. No	Name of Land Use	Area (sq. m)	Area (sq.km)	Percent
1	Bush	344841.47	0.34	2.76
2	Commercial area	57025.07	0.06	0.46
3	Cultivated high land	21929.70	0.02	0.18
4	Cultivated low land (Normal flood level)	300559.15	0.30	2.40
5	Forest	968117.62	0.97	7.74
6	Grassland	112823.5213	0.11	0.90
7	Housing area	7954291.81	7.95	63.62
8	Industrial area	66939.90	0.07	0.54
9	Mixed area	17927.24	0.02	0.14
10	Park, Play ground, Urban green area	22434.89	0.02	0.18
11	Public facilities	208588.73	0.21	1.67
12	Road/Railway	1028511.69	1.03	8.23
13	Swamp and marsh	166293.80	0.17	1.33
14	Water bodies such as river, lake and pond	1233042.68	1.23	9.86
	Total	12503327.26	12.50	100.00

Source: Reconnaissance Survey, and GIS Lab, UDD, 2013

According to the table 02, housing area (7.95 sq. km.) constitutes the major land use of Shah Ali Thana, which is 63.62 percent of total area. Water bodies such as river, lake and pond (1.23 sq. km.), road/railway (1.03 sq. km.) and forest (0.97 sq. km.) comprises other significant land uses of the thana, which accounts for 9.86 percent, 8.23 percent 7.74 percent of total land uses respectively. Other land uses cover small share of total area. Figure 02 shows existing land use map of Shah Ali Thana.

Figure 02: Existing Land Use of Shah Ali Thana

EXISTING LAND USE MAP
SHAH ALI THANA
Dhaka Metropolitan Area.

Map No - 02

1 inch = 660 feet

URBAN DEVELOPMENT DIRECTORATE
82 , SEGUN BAGICHA , DHAKA - 1000
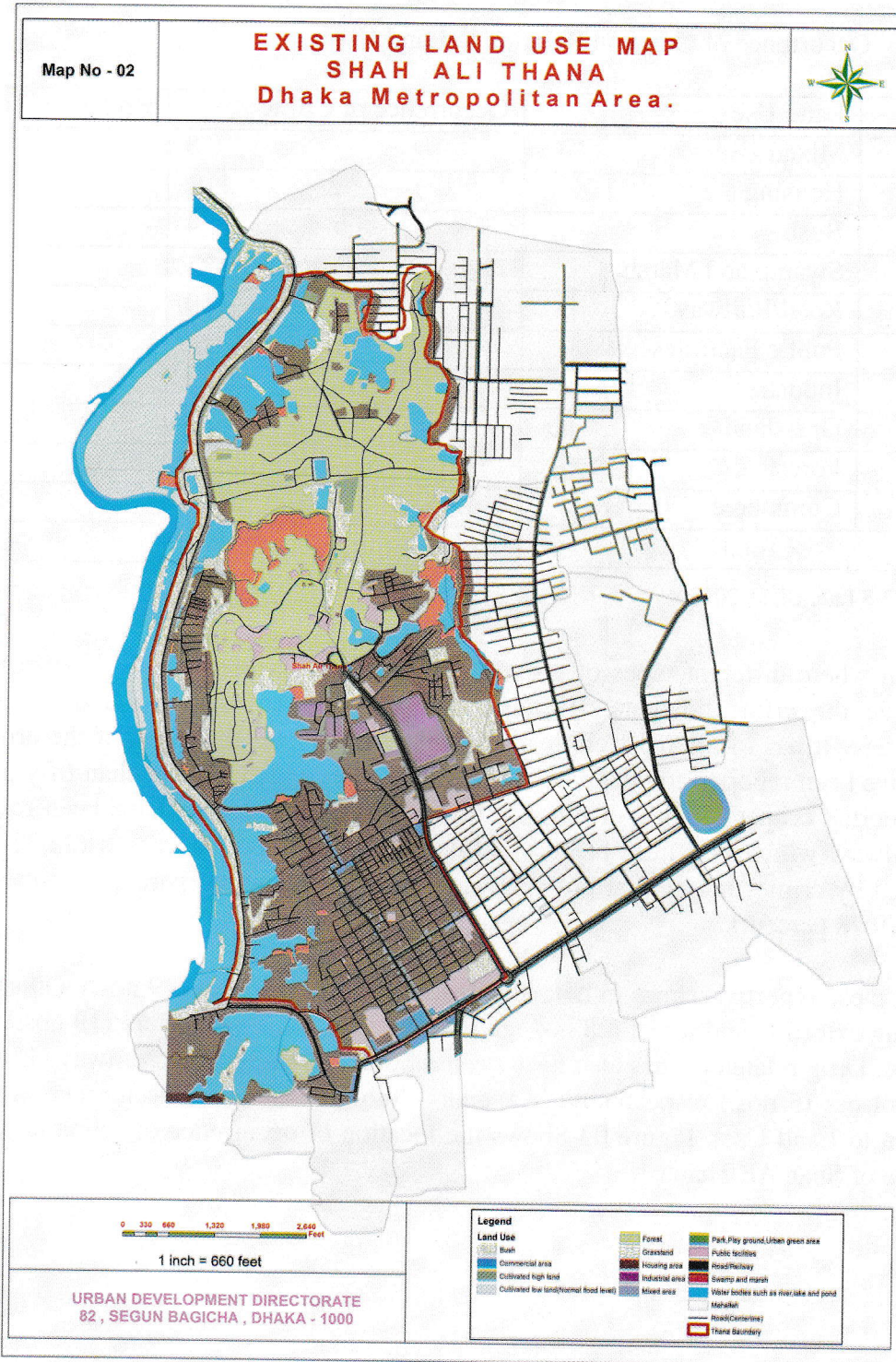
Source: Field Survey, 2013

3.3 Occurrence of Crime in Relation to Land Use

Table 03 shown below indicates the occurrence of reported crimes over land use.

Table 03: Occurrence of Crime in Relation to Land Use

Sl. No.	Land Use	Occurrence of Crime	Percent of Total
1	Mixed Use	8	3.56
2	Housing	118	52.44
3	Bush	4	1.78
4	Swamp and Marsh	1	0.44
5	Road/Railway	50	22.22
6	Public Facilities	22	9.78
7	Industry	3	1.33
8	Grassland	3	1.33
9	Forest	7	3.11
10	Commerce	9	4.00
	Total	225	100.00

Source: GIS Lab, UDD, 2013.

Location where different types of crime are taken place is very crucial to understand, to determine the crime hotspots. Because, data demonstrate that crime does not occur everywhere. It has locational significance. Table 03 indicates that most of the crimes (118 nos.) have been reported to take place in housing areas, which is more than fifty percent of total reported crimes (52.44 percent). A total number of 50 crimes have been reported on road/railway, which is a little below one-fourth of total reported crimes (22.22 percent). Followed by crimes reported at public places, which is about ten percent of total reported crimes (9.78 percent).

Among these reported crimes in housing area, drug related crimes (49 nos.), Others Crimes including extortion and threat (28 nos.), and women and children torture (19 nos.) are more frequent. Drug related crimes also have been reported in case of road/railway (15 nos.) and public places (5 nos.) respectively. (Appendix- Table B: Detailed Occurrence of Crime in Relation to Land Use). Figure 03 Shows the location of occurrence of crime in relation to land use of Shah Ali Thana.

Figure 03: Location of Crime in Relation to Land Use of Shah Ali Thana
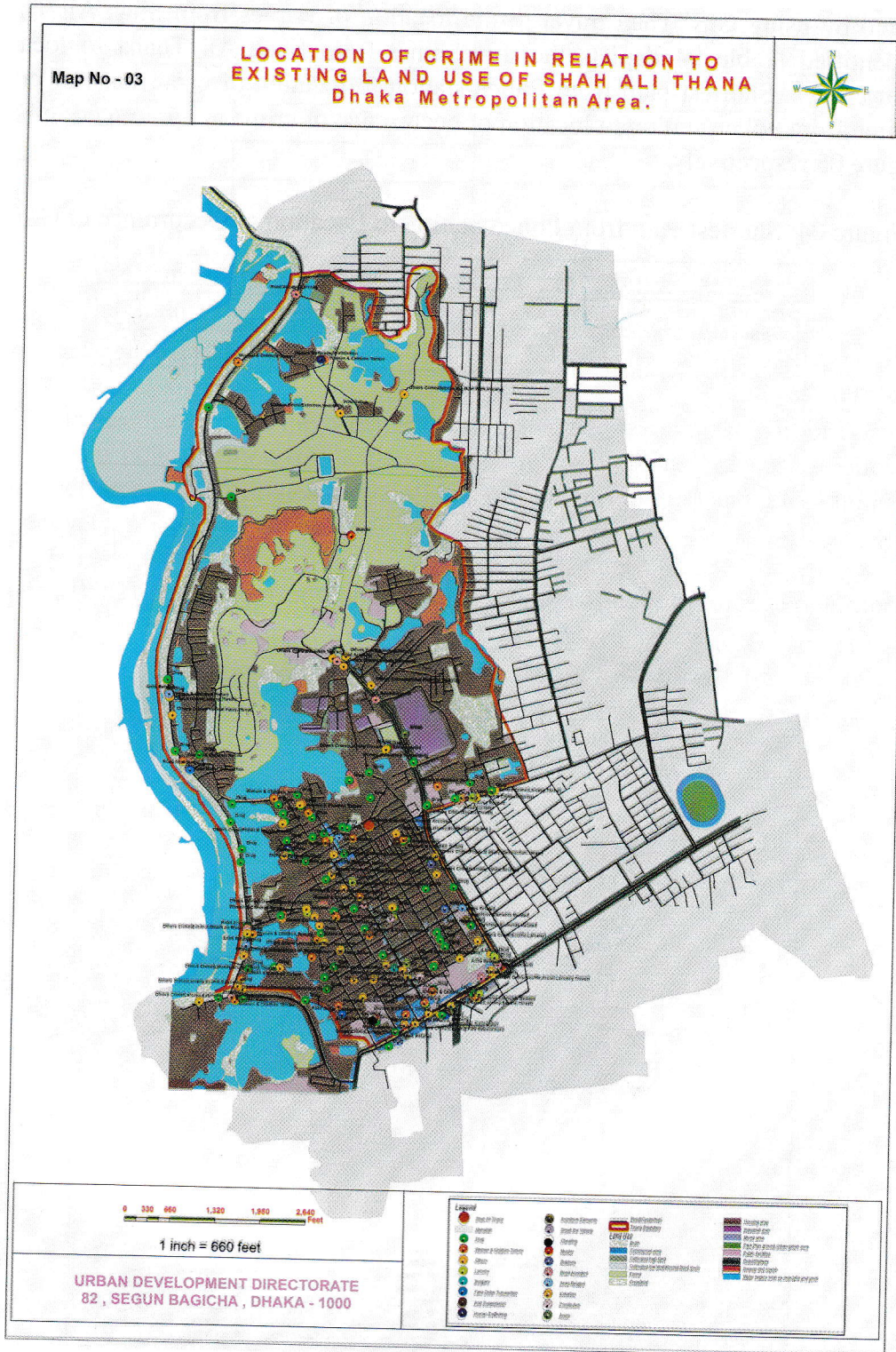
Source: Field Survey, 2013

3.4 Determination of Travel Time to the Spot of Reported Crimes

Shortest path from Shah Ali Thana to location of different crimes occurred had been calculated by using GIS. Then travel to the location of crimes from Shah Ali Thana had been identified. Table 04 depicts the travel time from Shah Ali Thana to locations of different crimes. Shortest path from Police station to location of occurrence of crime and travel time from police station to location of occurrence of crime are presented in Figure 04 and Figure 05 respectively.

Figure 04: Shortest Path from Police Station to Location of Occurrence of Crime

Source: GIS LAB, UDD, 2013

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Table 04: Travel Time to Spot of Crime from Shah Ali Thana

SL NO	Duration (Minute)	Number of Crime
1	0-1	16
2	1-2	72
3	2-3	64
4	3-4	29
5	4-5	35
6	5-6	3
7	6-7	6
Total		225

Source: Field Survey, 2013

Table 04 indicates that most of the occurrences of crime had taken place within 1-2 minutes travel time from police station to location of occurrence of crime (72 nos). Followed by travel time between 2 to 3 minutes (64 nos), 4 to 5 minutes (35 nos) and 3 to 4 minutes (29 nos) respectively.

Figure 05: Travel Time from Police Station to Location of Occurrence of Crime
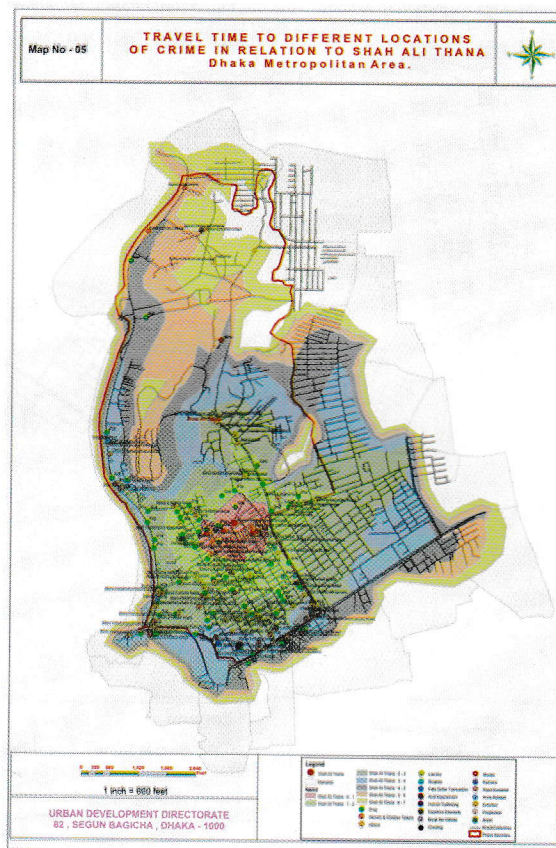
Source: Field survey, UDD, 2013

3.5 Determination of Crime Hotspots at Shah Ali Thana

A total number of 970 hexagons of 0.88m diagonal have been generated for Whole of Shah Ali Thana to determine the crime hotspots of Shah Ali Thana. Each type of crime has been assigned a value depending of its severity. Then by multiplying the value with the total count of crime in each hexagon total score had been determined. Table 05 shown below reveals the final score obtained by different hexagons. Figure 06 shows below represent the generated hexagons for Shah Ali Thana; and Figure 07 shows below the generated hexagons for Shah Ali Thana in relation to identifying the Crime Hotspots of Shah Ali Thana.

Figure 06: Generated hexagons for Shah Ali Thana

Source: GIS Lab, UDD, 2013

Table 05: Score of different Hexagons

Score	No. of Hexagons	Rank
75 to 100	1	1
50 to 75	5	2
25 to 50	32	3
Below 25	78	4
0	854	5
Total	970	

Source: Calculated from GIS Database, 2013.

Table 05 illustrates that only one hexagon obtained score ranging from 75 to 100, and identified as the highest ranking crime hotspot of Shah Ali Thana. Followed by 5 hexagons, which obtained score between 50 to 75; and determined as the second ranking crime hotspot. The table also depicts that as many as 854 hexagons obtained score 0, since no incidents of crime had been reported in the hexagons.

According to the figure 06, Hexagon ID No. 93 secured highest ranking crime hotspot, which is located at Shah Ali Mazar area. Followed by hexagon ID no. 117, hexagon ID no. 554, hexagon ID no. 556, and hexagon ID no. 616, inclusive, which secured the second ranking crime hotspots covering the Market, Mirpur Section -1, Block B, Mirpur Section -1, Block C, and Mirpur Section -1, Block H respectively.

Figure 07: Generated hexagons for Shah Ali Thana in Relation to Crime Hotspots

HEXAGON SHOWING CRIME HOT SPOTS OF
SHAH ALI THANA
Dhaka Metropolitan Area.

Map No - 07

Legend

● Shah Ali Thana	50 to 75		Thana Baundary
Heza_Data_crime	75 to 100		Mahallah
25 to 50	Below 25		
	Road(Centerline)		

1 inch = 660 feet

0   330   660   1,320   1,980   2,640 Feet

URBAN DEVELOPMENT DIRECTORATE
82 , SEGUN BAGICHA , DHAKA - 1000
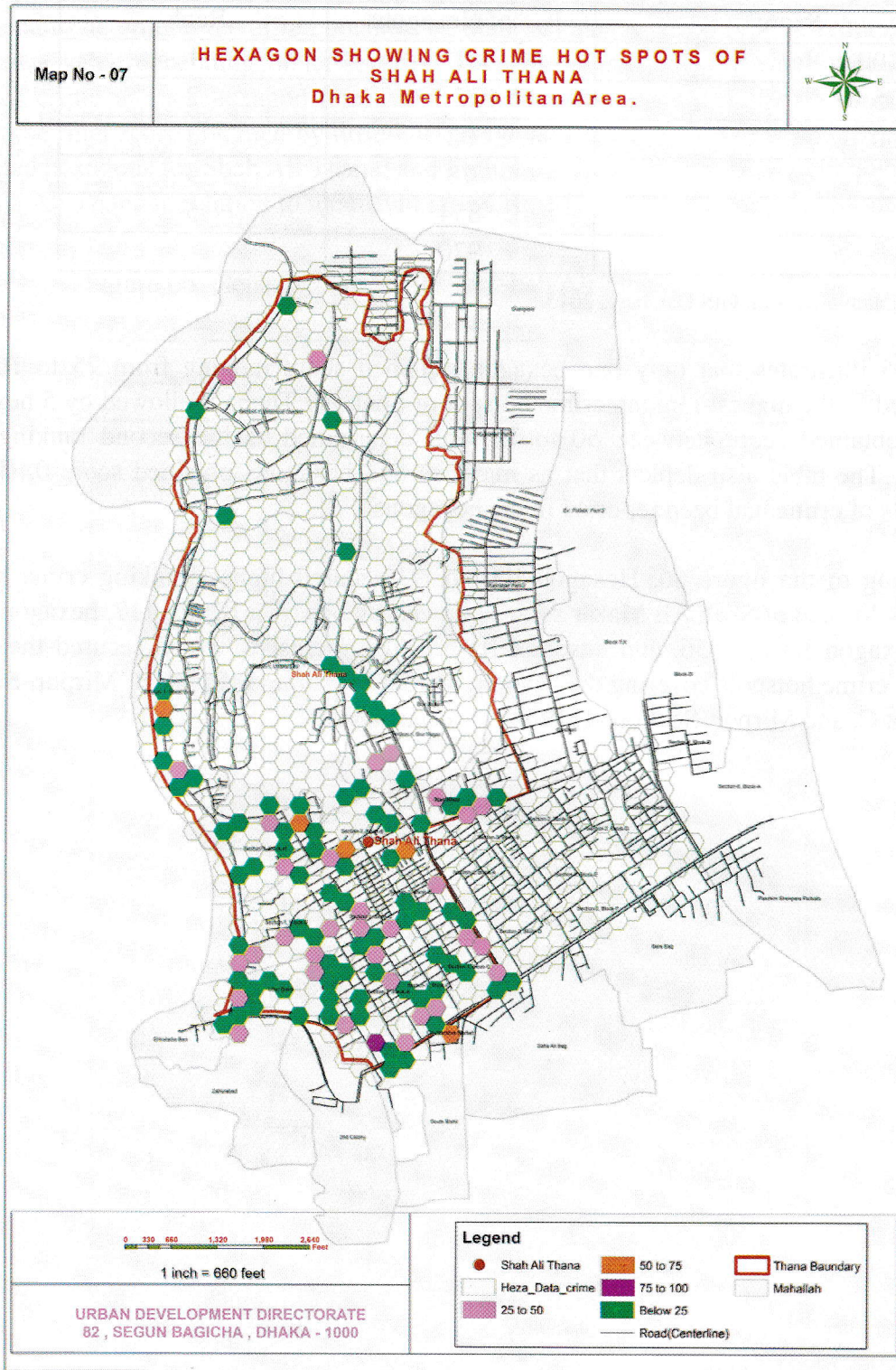
Source: GIS Lab, UDD, 2013

CHAPTER-04

CHAPTER-FOUR

4. Conclusion and Recommendation

4.1 Conclusion

In conclusion it can be said that occurrence of crime has spatial dimension. Occurrence of crime takes place in specific locations, which has particular characteristics as the analyzed data reveal that most severe crime hotspot of Shah Ali Thana is located at Mazar area and drug related crime is predominant in the area. On the other hand, children and women torture is predominant in housing area. The study also reveals that distance from Thana does not have significant relationship in formation of crime hotspots. There might have other reasons for the crime hotspots.

4.2 Recommendations

On the basis of the study, it is recommended that police petrol should be increased at location of crime hotspots.

4.3 Scope for Further Studies

1. Temporal pattern of occurrence of crime may be studied
2. Reasons for formation of crime hotspots including its characteristics may be studied
3. Besides, people's perception about crime may also be studied

Reference :

Salma A Shafi (2010), Urban Crime and Violence in Dhaka,
The University Press Limited (UPL). Dhaka

Annexure

Table-A: Occurrence of Crime in Relation to Land Use

Sl No	Land Use	Occurrence Of Crime	Frequency	Percent of Total
		Grand Tota	0	
		Drug	2	1.69
		Fake Dollar Transaction	1	0.85
		Larceny	3	2.54
		Others Crime(Extortion, Threat)		
1	Mixed use	**Sub-Total**	**8**	**3.56**
		Robbery	3	2.54
		Acid Suppression	1	0.85
		Arms Related	2	1.69
		Arson	1	0.85
		Burglary	2	1.69
		Drug	49	41.53
		Explosive Elements	1	0.85
		Explosive Elements Related	2	1.69
		Fake Dollar Transaction	2	0.85
		Human Trafficking	1	0.85
		Larceny	6	5.08
		Prostitution	2	1.69
		Women & Children Torture	19	16.10
		Others Crime (Extortion, Threat)	28	23.73
2	Housing	**Sub-Total**	**118**	**52.44**
		Others Crime(Larceny, Scuffle)	1	25.00
		Drug	1	25.00
		Women & Children Torture	1	25.00
		Road Accident	1	25.00
3	Bush	Sub-Total	4	100.00
4	Swamp And Marsh	Drug	1	100.00
		Sub-Total	**1**	**0.44**

Sl No	Land Use	Occurrence Of Crime	Frequency	Percent of Total
		Extortion	1	2.00
		Arms Related	3	6.00
		Drug	15	30.00
		Fake Dollar Transaction	1	2.00
		Larceny	3	6.00
		Prostitution	1	2.00
		Road Accident	2	4.00
		Road Accident	6	12.00
		Women & Children Torture	5	10.00
		Others Crime (Seuffle, Arson, Larceny, Threat)	13	26.00
5	Road/Railway	**Sub-Total**	**50**	**22.22**
		Acid Suppression	1	4.55
		Arms Related	2	9.09
		Break the Vehicle	1	4.55
		Cheating	1	4.55
		Drug	5	22.73
		Explosive Elements Related	1	4.55
		Larceny	1	4.55
		Rode Accident	1	4.55
		Women & Children Torture	3	13.64
		Others Crime(False Trade Market Use, Cheating)	6	27.27
6	Public Facilities	**Sub-Total**	**22**	**9.78**
		Women & Children Torture	1	33.33
		Murder	1	33.33
		Drug	1	33.33
7	Industry	**Sub-Total**	**3**	**1.33**
		Others Crime(Larceny, Extortion)	1	1.33
		Drug	1	1.33
		Others Crime(Encroachment on River)	1	1.33
8	Grassland	**Sub-Total**	**3**	**1.33**
		Arms Related	1	14.29

Sl No	Land Use	Occurrence Of Crime	Frequency	Percent of Total
		Human Trafficking	1	14.29
		Murder	1	14.29
		Others Crime(Oppose the Govt. Work, Injury)	1	14.29
		Prostitution	2	28.57
		Women & Children Torture	1	14.29
9	**Forest**	**Sub-Total**	**7**	**3.11**
		Human Trafficking	1	14.29
		Murder	1	14.29
		Others Crime(Oppose the Govt. Work, Injury)	1	14.29
		Prostitution	2	28.57
		Women & Children Torture	1	14.29
		Sub-Total	**7**	**3.11**
			1	00.00
		Explosive Elements Related	1	11.11
		Larceny	1	11.11
		Others Crime(Larceny, Cheating)	4	44.44
		Women & Children Torture	1	11.11
		Sub-Total	**9**	**4.00**
10	**Commerce**	Grand Total	225	100.00
1	Mixed Use	Arms Related	1	
		Drug	2	1.69
		Fake Dollar Transaction	1	0.85
		Larceny	3	2.54
		Others Crime(Extortion, Threat)	1	0.85
		Sub-Total	8	3.56
2	Housing	Robbery	3	2.54
		Acid Suppression	1	0.85
		Arms Related	2	1.69
		Arson	1	0.85
		Burglary	2	1.69
		Drug	49	41.53

Sl No	Land Use	Occurrence Of Crime	Frequency	Percent of Total
		Explosive Elements	1	0.85
		Explosive Elements Related	2	1.69
		Fake Dollar Transaction	1	0.85
		Human Trafficking	1	0.85
		Larceny	6	5.08
		Prostitution	2	1.69
		Women & Children Torture	19	16.10
		Others Crime (Extortion, Threat)	28	23.71
		Sub-Total	118	52.44
3	Bush	Others Crime(Larceny, Scuffle)	1	25.00
		Drug	1	25.00
		Women & Children Torture	1	25.00
		Road Accident	1	25.00
		Sub-Total	4	100.00
4	Swamp And Marsh	Drug	1	100.00
		Sub-Total	1	0.44
5	Road/Railway	Extortion	2	2.00
		Arms Related	3	6.00
		Drug	15	30.00
		Fake Dollar Transaction	1	2.00
		Larceny	3	6.00
		Prostitution	1	2.00
		Road Accident	2	4.00
		Road Accident	6	12.00
		Women & Children Torture	5	10.00
		Others Crime (Seuffle, Arson, Larceny, Threat)	13	26.00
		Sub-Total	50	22.22
6	Public Facilities	Acid Suppression	1	4.55
		Arms Related	2	9.09
		Break the Vehicle	1	4.55

Sl No	Land Use	Occurrence Of Crime	Frequency	Percent of Total
		Cheating	1	4.55
		Drug	5	22.73
		Explosive Elements Related	1	4.55
		Larceny	1	4.55
		Rode Accident	1	4.55
		Women & Children Torture	3	13.64
		Others Crime(False Trade Market Use, Cheating)	6	27.27
		Sub-Total	22	9.78
7	Industry	Women & Children Torture	1	33.33
		Murder	1	33.33
		Drug	1	33.33
		Sub-Total	3	1.33
8	Grassland	Others Crime(Larceny, Extortion)	1	33.33
		Drug	1	33.33
		Others Crime(Encroachment on River)	1	33.33
		Sub-Total	3	1.33
9	Forest	Arms Related	1	14.29
		Human Trafficking	1	14.29
		Murder	1	14.29
		Others Crime(Oppose the Govt. Work, Injury)	1	14.29
		Prostitution	2	28.57
		Women & Children Torture	1	14.29
		Sub-Total	7	3.11
10	Commerce	Drug	2	22.22
		Explosive Elements Related	1	11.11
		Larceny	1	11.11
		Others Crime(Larceny, Cheating)	4	44.44
		Women & Children Torture	1	11.11
		Sub-Total	9	4.00
		Grand Total	225	100.00