

# Minnesota Crime Prevention Center

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ACQUISITIONS

Crime  
around Police Precinct Stations  
in Minneapolis

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## CRIME AROUND POLICE PRECINCT STATIONS IN MINNEAPOLIS

This research was supported by grant #76DF050005 awarded to the Governor's Commission on Crime Prevention and Control by the Law Enforcement Assistance Administration. Points of view stated in this paper are those of the authors and do not necessarily represent the official position of the Governor's Crime Commission or the Law Enforcement Assistance Administration.

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June, 1977

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## CRIME AROUND POLICE PRECINCT STATIONS IN MINNEAPOLIS

### ABSTRACT

The incidence of crime around police precinct stations in Minneapolis is examined to determine whether the location of these stations is related to the geographic distribution of crime. It is found that in general, there is no evidence to suggest that the presence of police precinct stations deters crime incidence in the immediate vicinity of precinct stations.

## CRIME AROUND POLICE PRECINCT STATIONS IN MINNEAPOLIS

### Introduction

Estimating the possible effects of consolidation of police precinct stations involves a complex web of economic, political, and social variables. The present analysis investigates only one very narrow question: Are crime rates lower in the immediate vicinity of police precinct stations than in other areas of the city of Minneapolis?

This analysis focuses on two general categories of description:

- 1) the density of crime immediately<sup>1</sup> surrounding police precinct stations compared to the precinct as a whole and
- 2) the change in crime density as distance to the precinct station decreases.

Density of crime is a measure of the amount of crime in an area adjusted for the size of the area; the crime density measure used in this analysis is expressed in terms of crimes per square mile.

### Density of Crime around Police Precinct Stations and within Precincts

TABLE 1 indicates that the density of crime within six-tenths of a mile of precinct stations is consistently higher than the density of crime within entire precincts. An explanation for this finding may lie in the fact that entire precincts may include a larger proportion of unpopulated land areas than do the areas immediately around precinct stations. However, an examination of the amount of unpopulated area in entire precincts indicates that this explanation does not account for differences in the crime rate.<sup>2</sup>

Because the differences in crime density are of such magnitude, it must be concluded that there is no evidence of less crime in the immediate vicinity of precinct stations when compared to entire precincts.

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<sup>1</sup>Within six-tenths of a mile.

<sup>2</sup>The crime rate in entire precincts is as much as six times that in the immediate vicinity of the precinct stations (for example, the Fifth Precinct). In order to statistically account for this difference in crime rates, as much as five-sixths of the total area of that precinct would have to be lakes, rivers and freeways. This is not the case for any precinct. An even larger proportion of area would have to be unpopulated for there to be any evidence of lower crime rates in the immediate vicinity of police precinct stations.

TABLE 1

DENSITY OF CRIME AROUND PRECINCT STATIONS  
AND WITHIN PRECINCTS

<u>PRECINCT</u>	<u>CRIMES PER SQUARE MILE</u>	
	<u>Within .6 Miles of Precinct Station</u>	<u>Rectangular Area Including Entire Precinct</u>
1	1,077.0	777.8
2	395.8	203.0
3	304.2	170.5
4	483.3	338.9
5	916.7	159.8
6	1,303.5	721.5

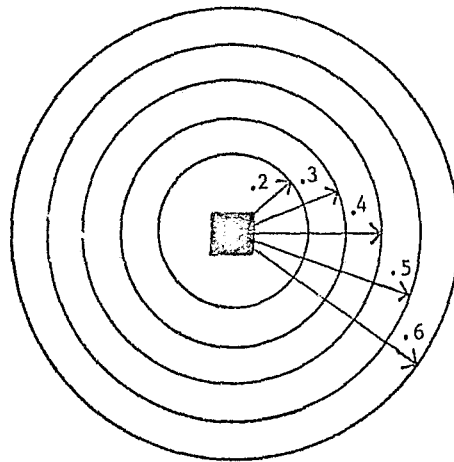
Source: Minneapolis police offense reports July 1, 1974, through June 30, 1975. Includes all burglaries, robberies and assaults, 25 percent sample of larcenies and vandalisms and a 20 percent sample of auto thefts.

Change in Crime Density as One Approaches the Immediate Vicinity of Police Precinct Stations


The change in crime density as one approaches the immediate vicinity of a precinct station can be determined by using a distance decay curve. (See Figure 1). Technically, this is a plot displaying the density of crime in bands of increasing radius around each precinct station.

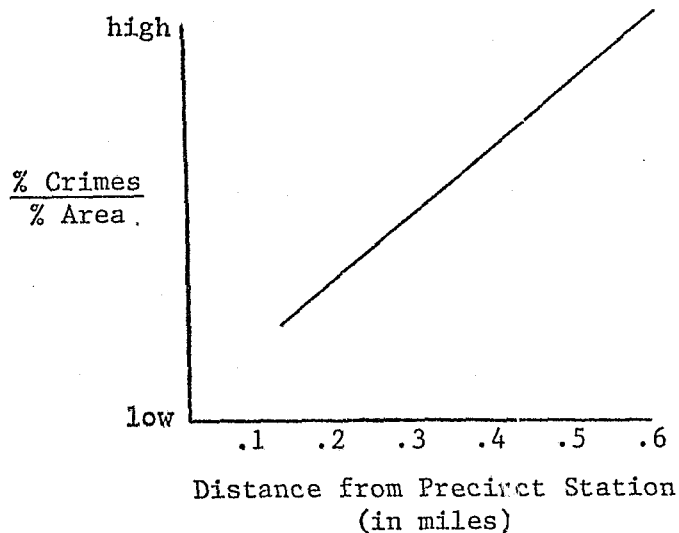
If crime rates decrease as one approaches the immediate vicinity of police precinct stations, their distance decay curves would roughly match the pattern displayed in Figure 1. Of the six precincts analyzed, this pattern appeared to be present only for the Fourth Precinct, no consistent pattern was found for four precincts (First, Third, Fifth and Sixth), and a pattern indicative of higher crime around the precinct stations was found for the Second. Given these results, there is no conclusive evidence that crime rates decrease as one approaches the immediate vicinity of police precinct stations.

FIGURE 1  
DISTANCE DECAY CURVES<sup>a</sup>



Division of .6 mile study area around each precinct station.

 Precinct Station



Expected pattern<sup>b</sup> if crime decreases as distance to the precinct station decreases.

<sup>a</sup>These curves are constructed from a plot of crimes .6 miles in radius around each precinct station. These plots are in the appendix to this report.

<sup>b</sup>This is a "pure" type. Actual curves may display some amount of random variation and/or curvilinearity.

FIGURE 2

DISTANCE DECAY OF CRIME AROUND PRECINCT STATION

FIRST PRECINCT

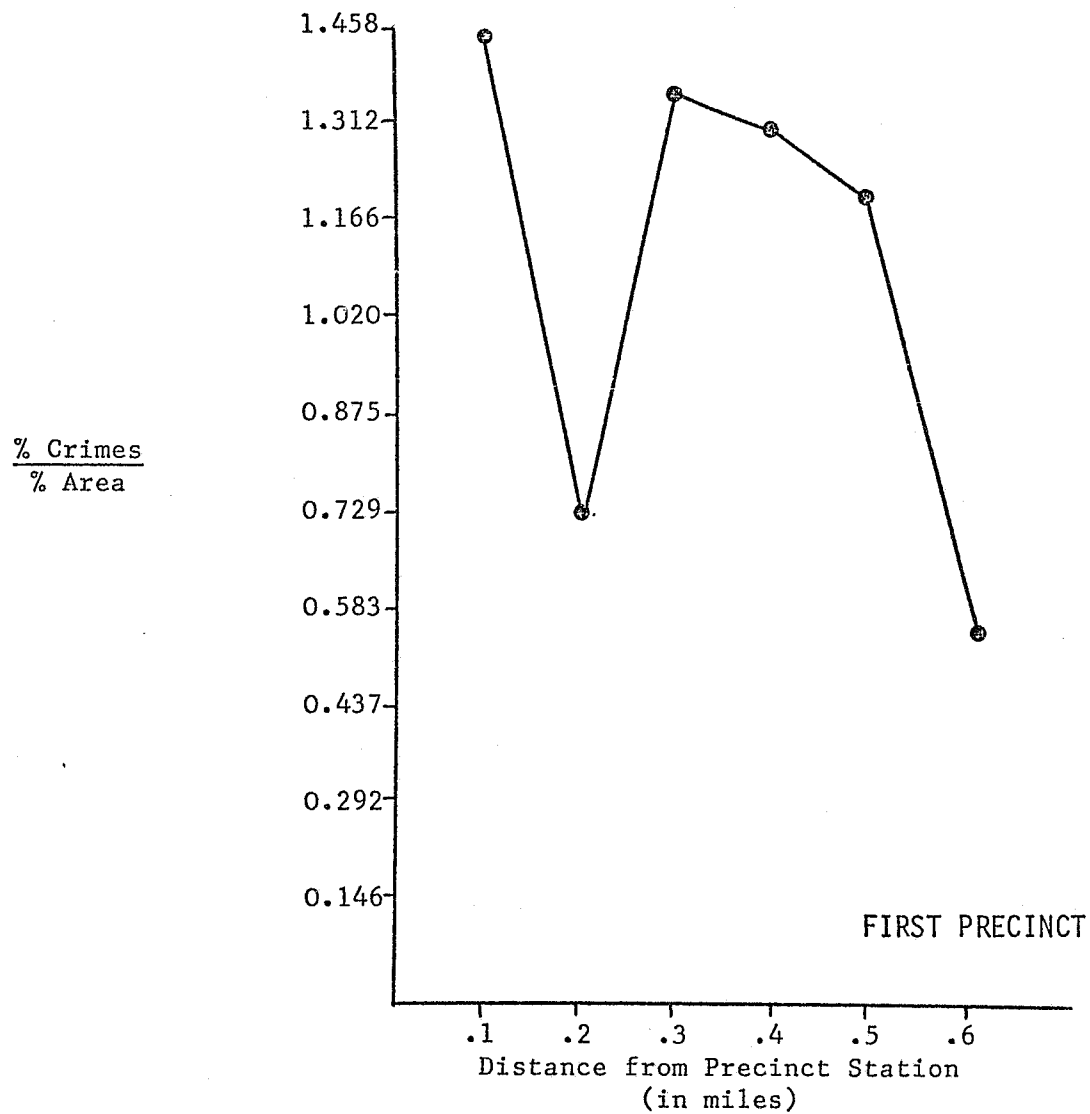


FIGURE 3

DISTANCE DECAY OF CRIME AROUND PRECINCT STATION

SECOND PRECINCT

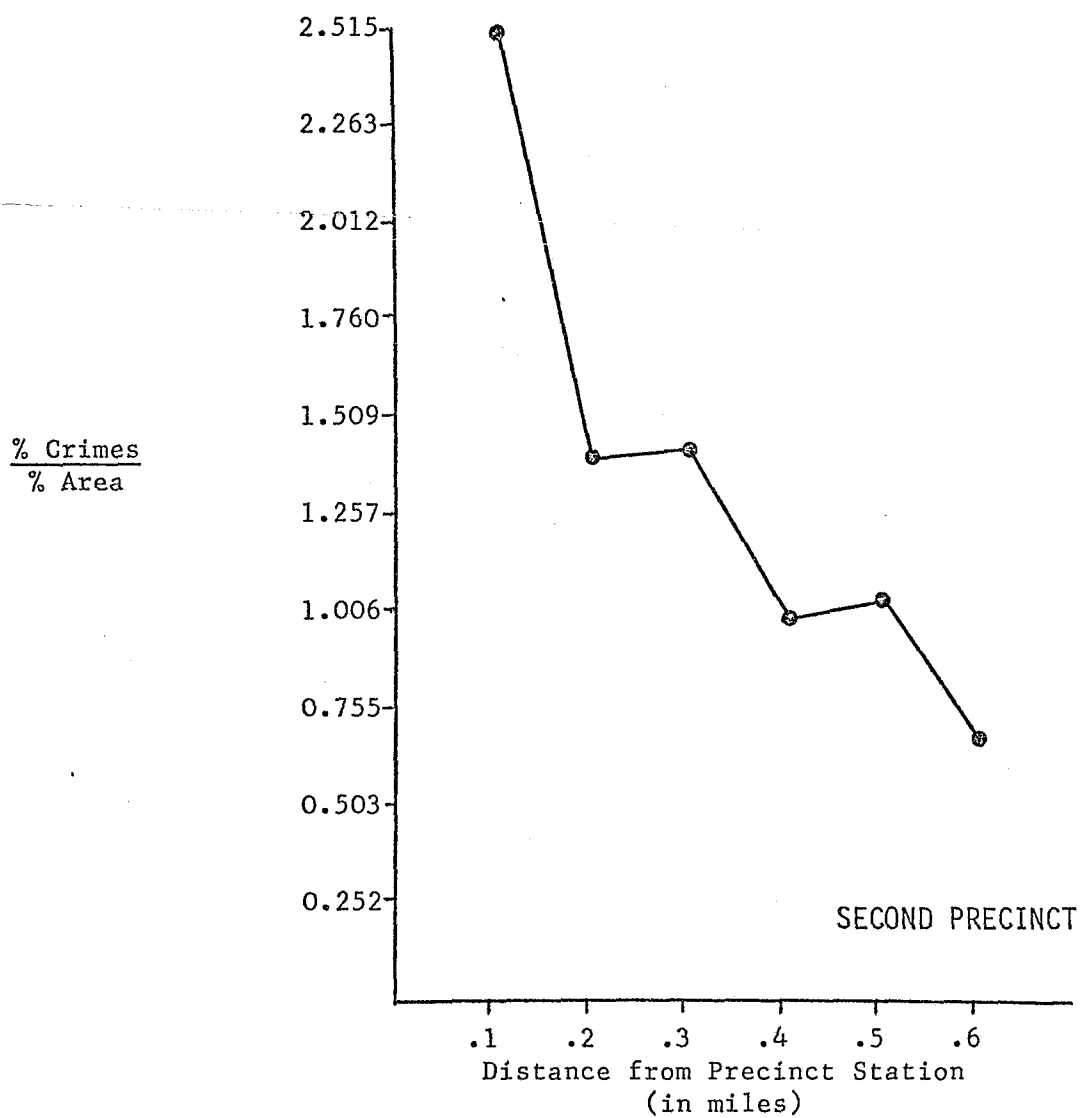


FIGURE 4

DISTANCE DECAY OF CRIME AROUND PRECINCT STATION

THIRD PRECINCT

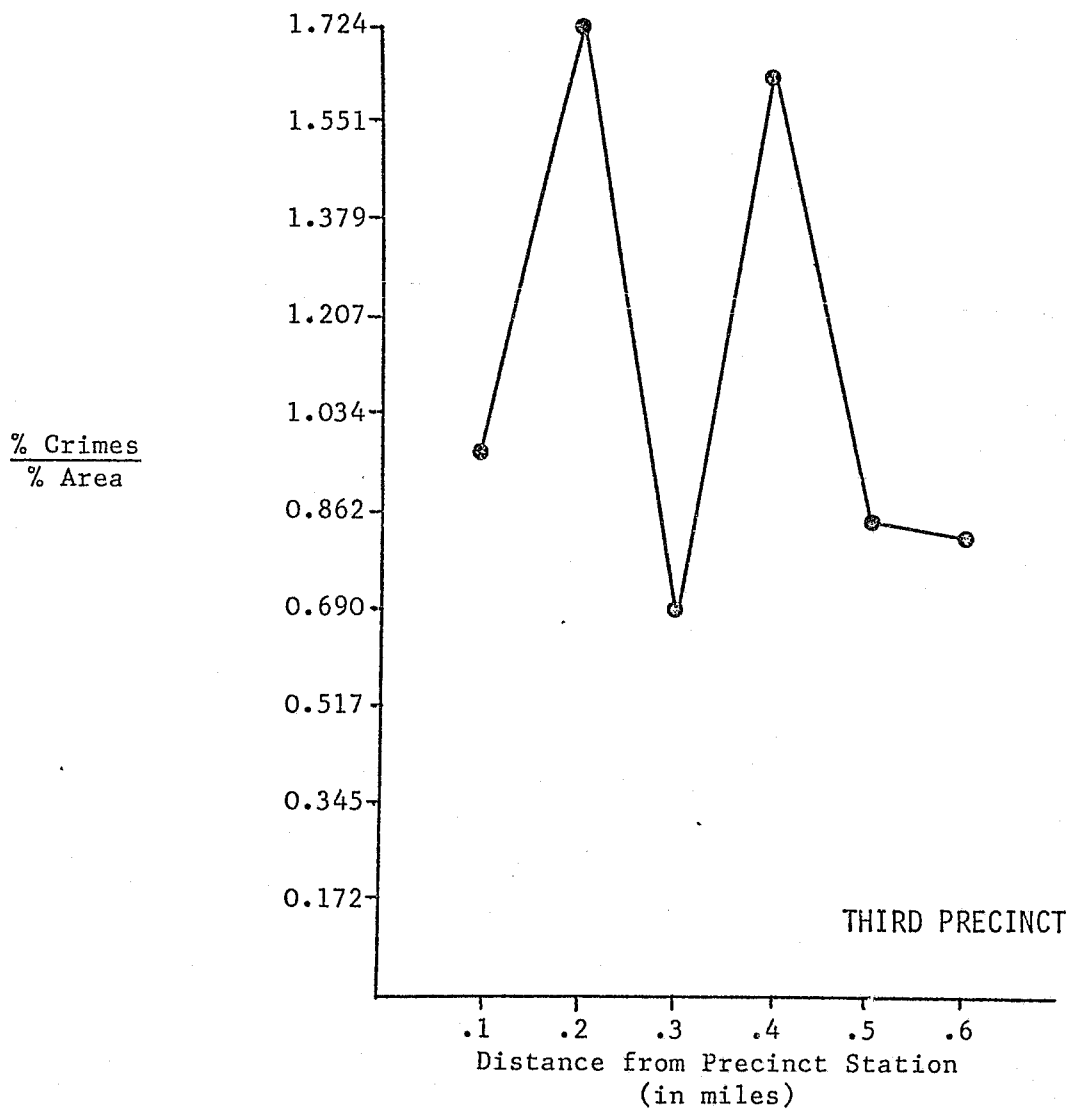


FIGURE 5

DISTANCE DECAY OF CRIME AROUND PRECINCT STATION

FOURTH PRECINCT

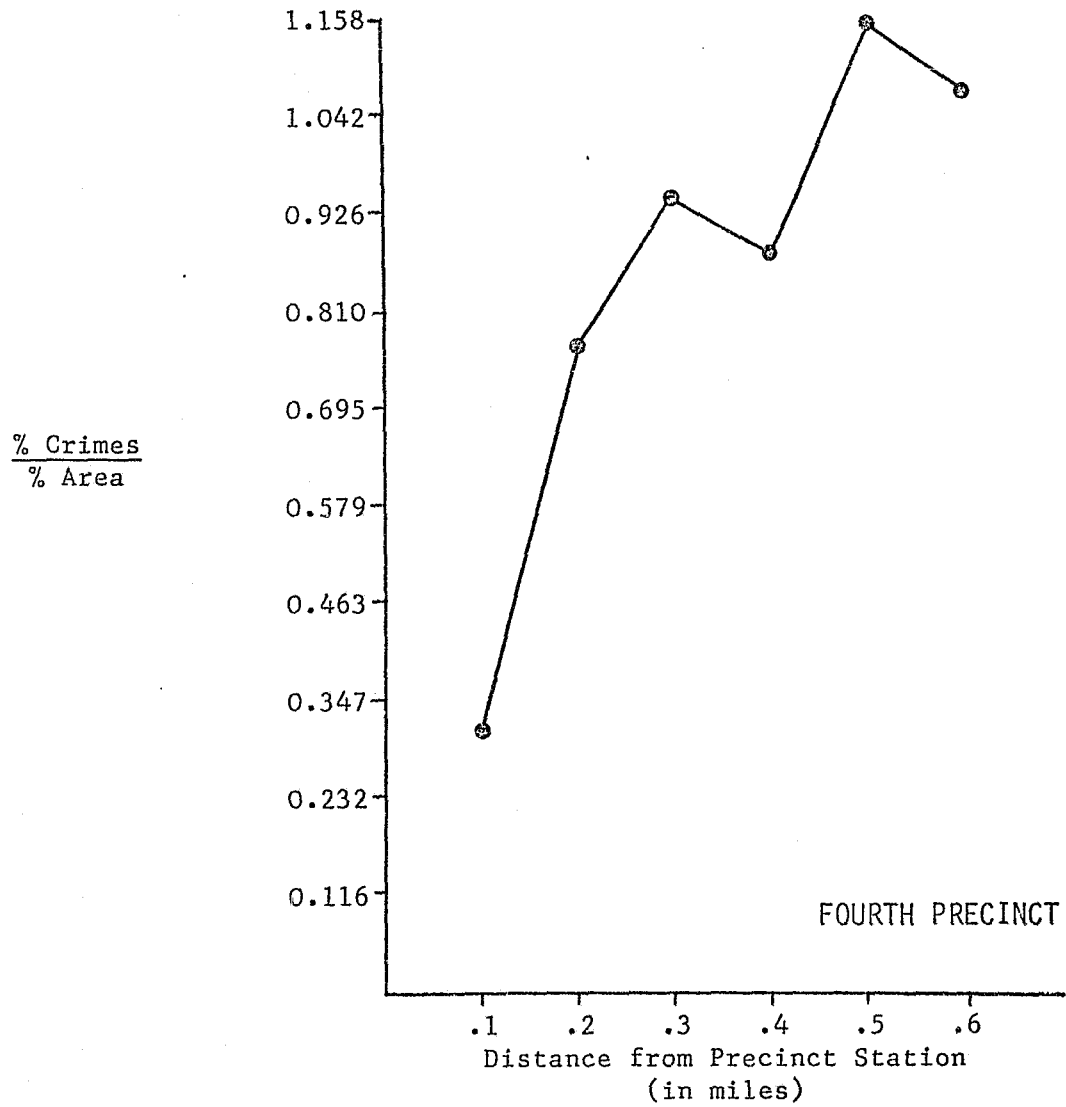


FIGURE 6

DISTANCE DECAY OF CRIME AROUND PRECINCT STATION

FIFTH PRECINCT

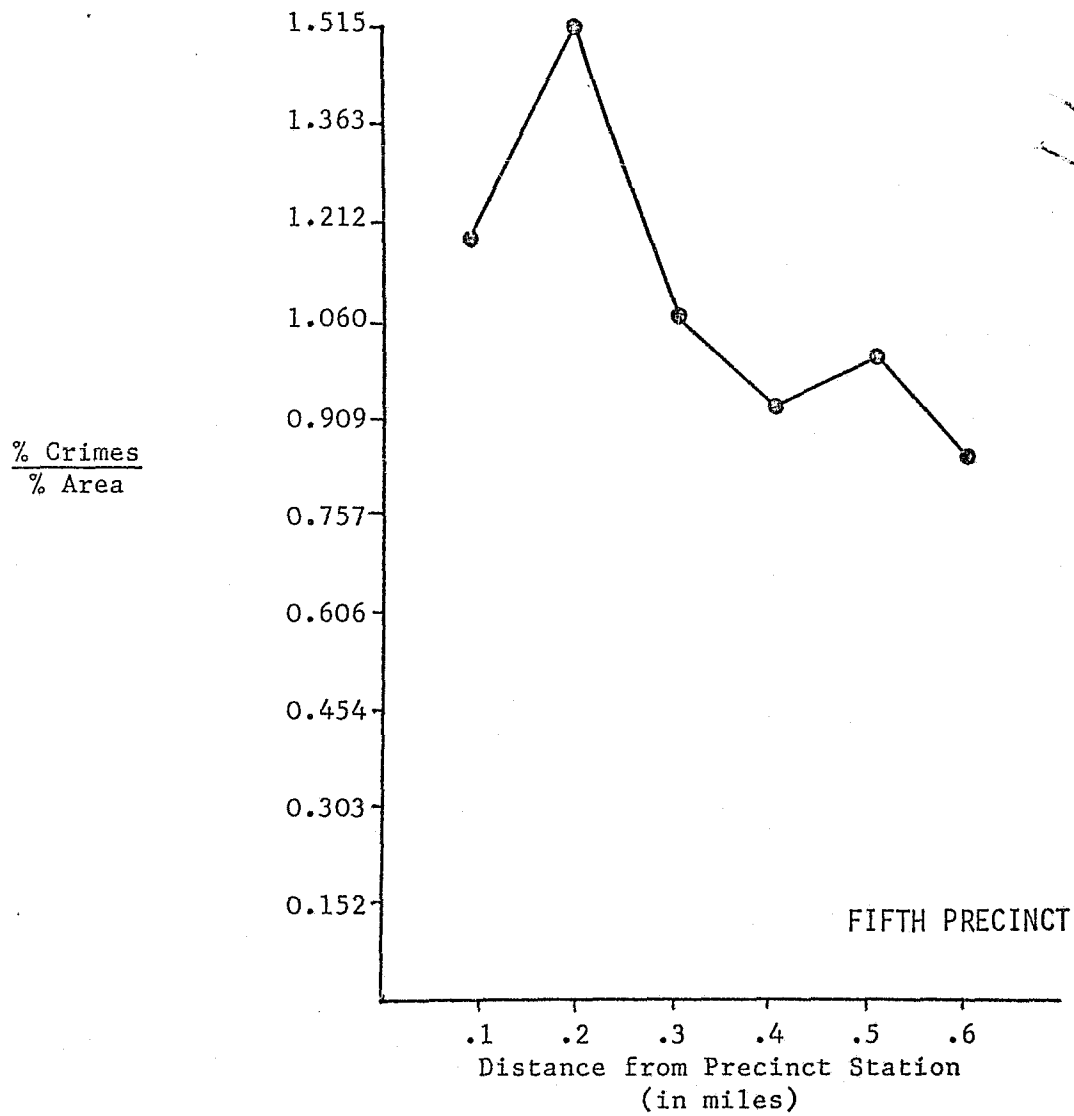
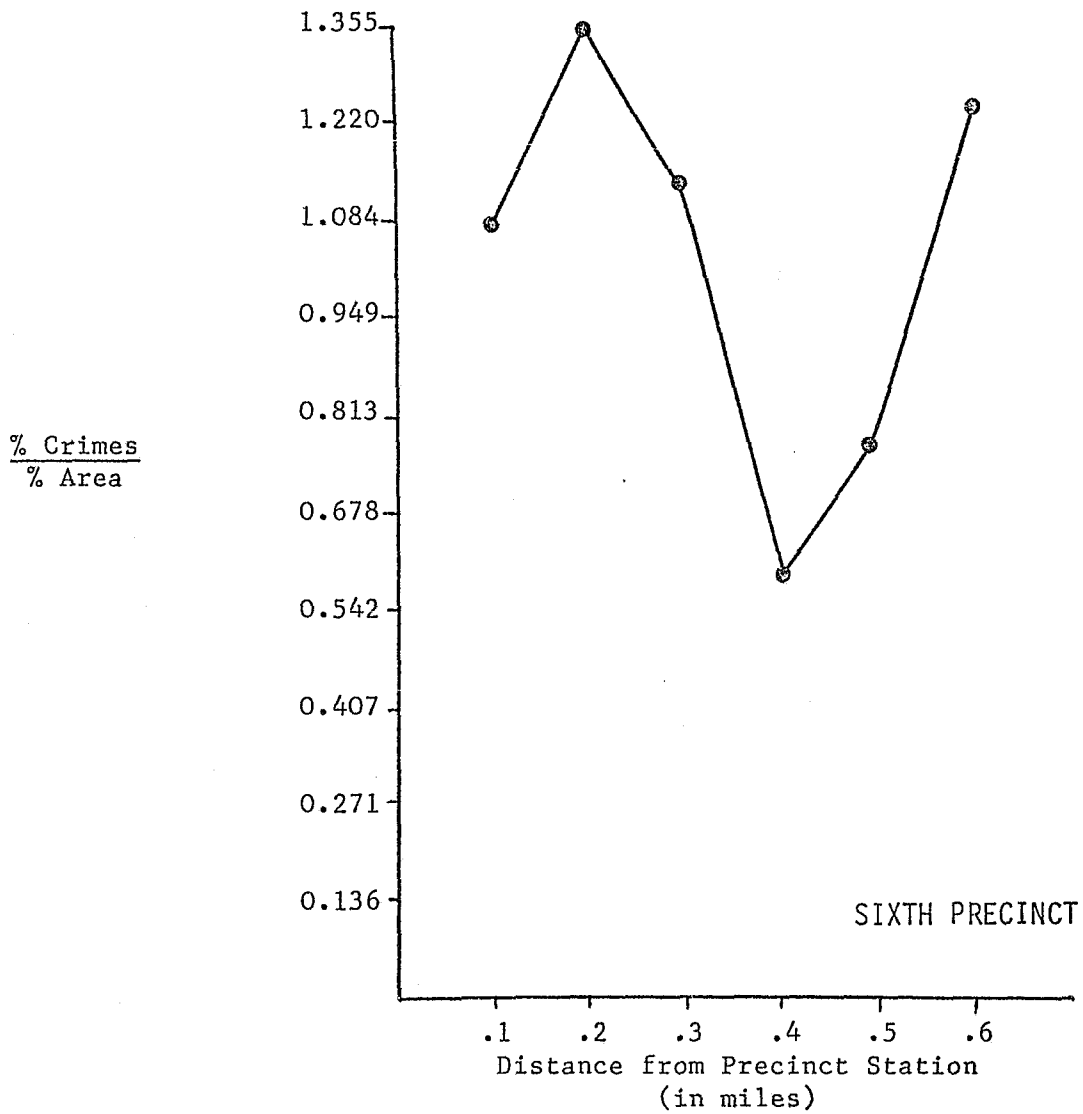


FIGURE 7

DISTANCE DECAY OF CRIME AROUND PRECINCT STATION  
SIXTH PRECINCT



## Conclusion

The analysis has shown that crime rates are not lower in the general or immediate vicinity of police precinct stations than in other areas of Minneapolis. This does not mean that in the absence of any of these precinct stations crime rates would remain unchanged. Such an analysis requires controlled experimental situations in which analysis would be conducted before and after the opening or closing of a precinct station. However, in the present context, there is no such experimental control available with which to evaluate the effects of the location of police stations on delivery of services to their surrounding communities.

It is recommended that any action taken to consolidate or close precinct stations be accompanied by such research.

## APPENDIX

The figures in this appendix present a summary of the analysis described in the text. (See Figures 8 through 13.) For each precinct, there are three maps and a symbol key. The map labeled, "Minneapolis," displays that part of the city covered by the precinct boundaries. The map labeled, "Precinct Map," presents a detailed analysis of crime occurring within six-tenths mile of the precinct station. Around each precinct station (located by an asterisk on the map) are concentric circles at tenth mile radii. Various street features are shown on the map. Additional symbols are plotted on this map, the type and size of which describe the type of crime and the number of crimes occurring at each point on the map. The symbol key displays the crime types and the corresponding symbol size to the number of crimes of each type.

The map labeled, "Crime Density Map," represents a three-dimensional density map of all crimes within six-tenths mile of the precinct station. This map shows the number of crimes per four-ten thousandth square mile in the six-tenths mile area near the precinct station.<sup>1</sup> This map corresponds exactly to the precinct map. Any point on the precinct map can be found on the density map by finding the corresponding x-miles, y-miles coordinate.

The distance decay curves presented in the text were generated from data provided by the figures in this appendix.

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<sup>1</sup>Note that the values on this map are scaled on the basis of the maximum crime density in the map. Care should be taken when comparing maps across precincts.

FIGURE 8

FIRST PRECINCT

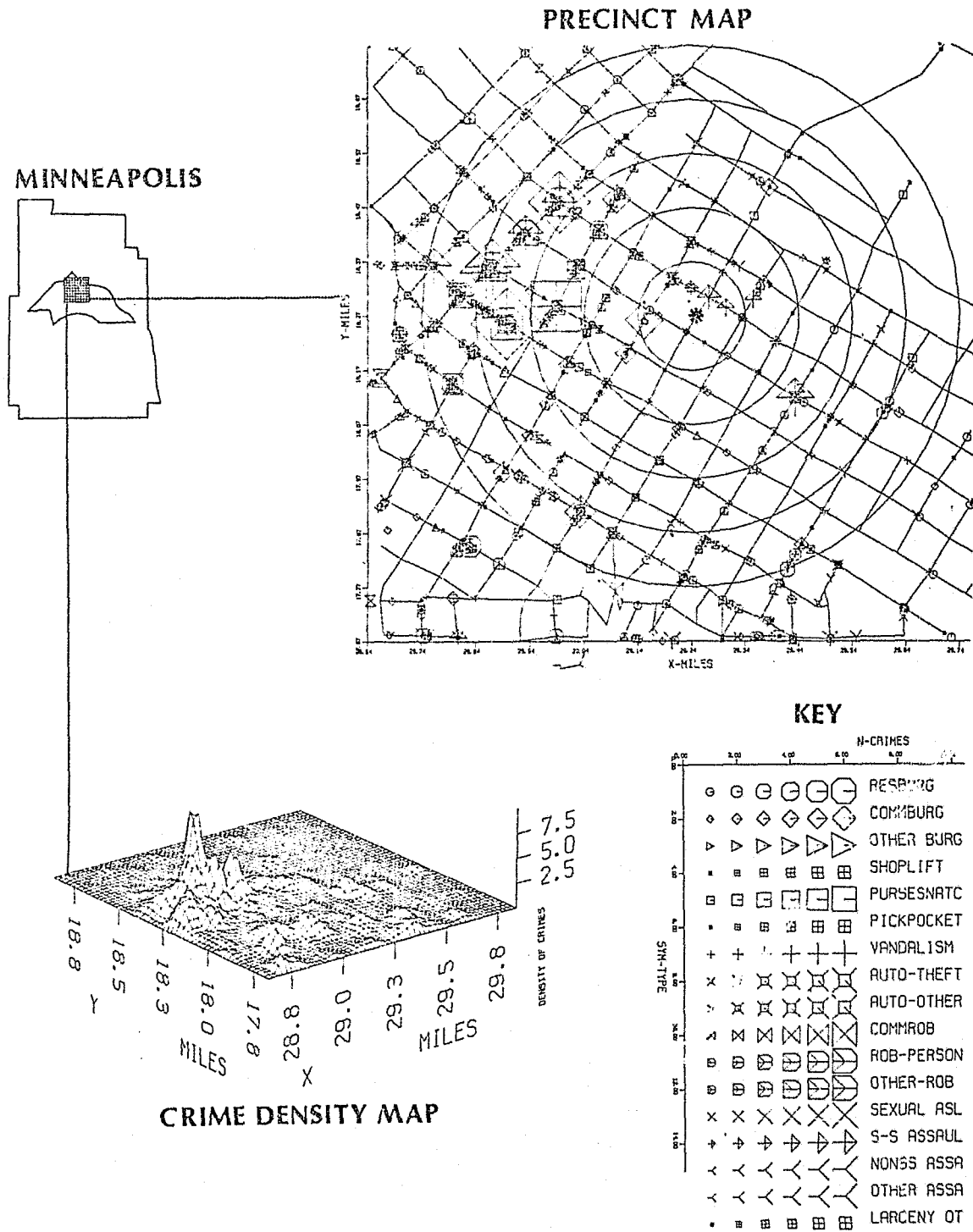


FIGURE 9

SECOND PRECINCT

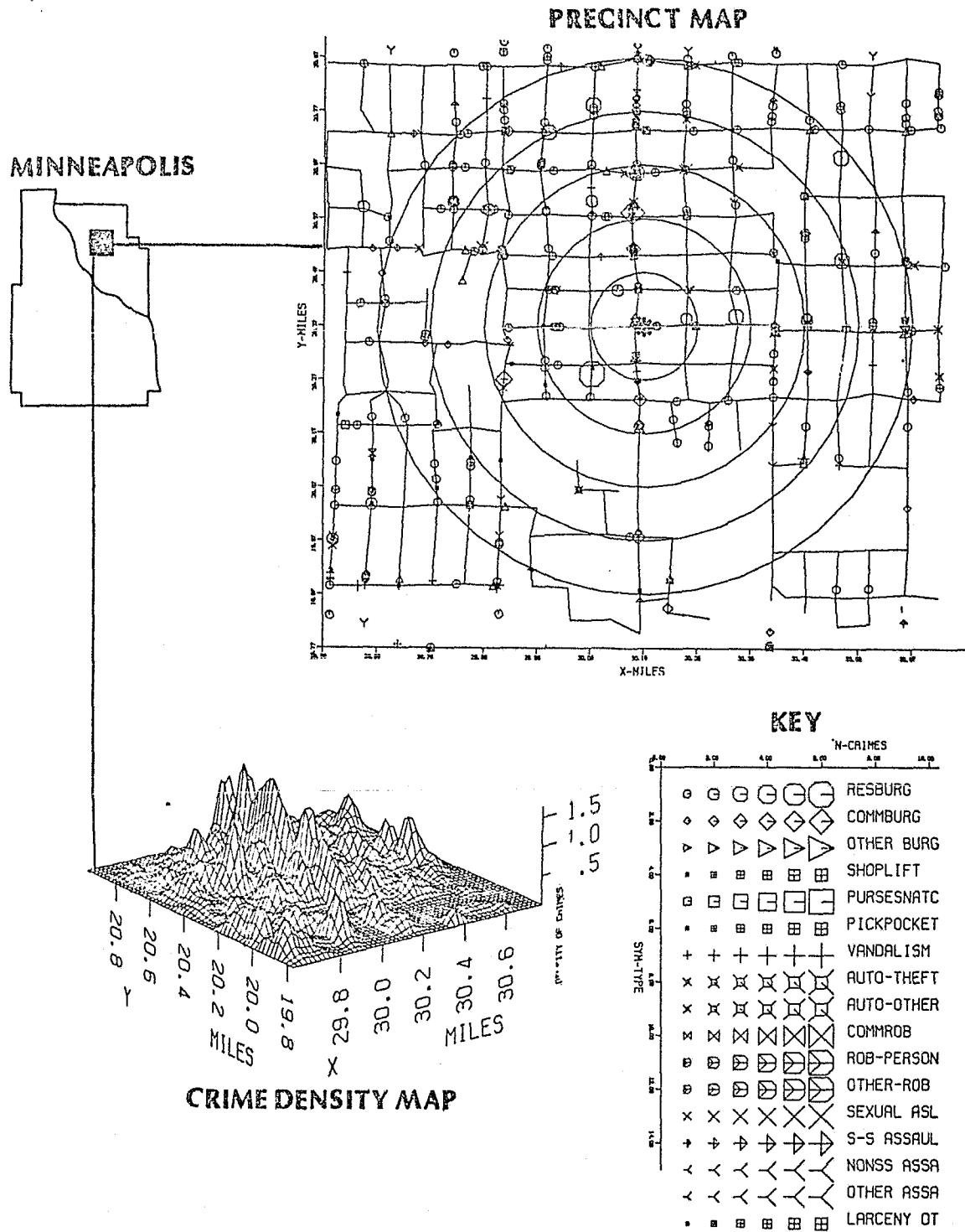


FIGURE 10

THIRD PRECINCT

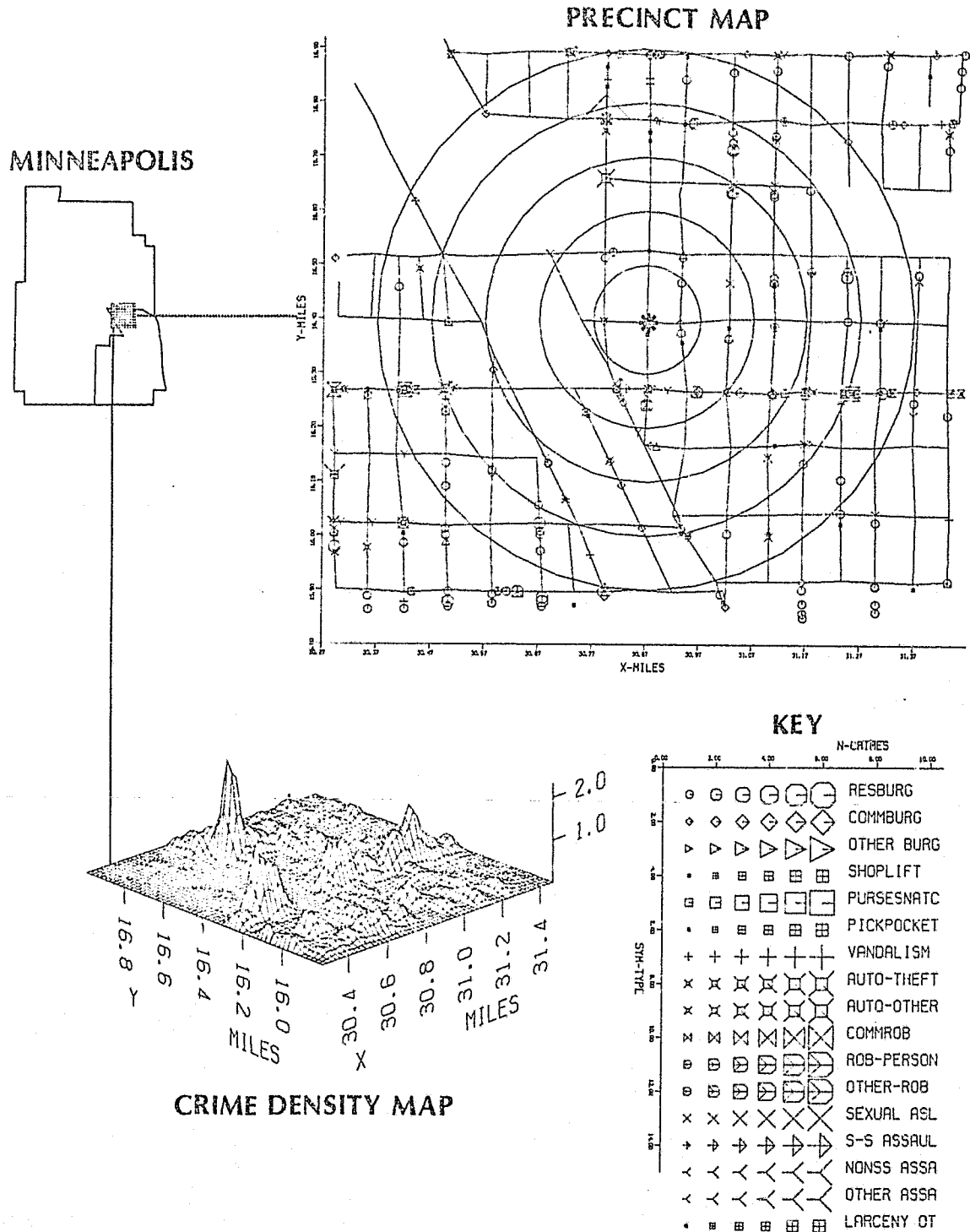


FIGURE 11

FOURTH PRECINCT

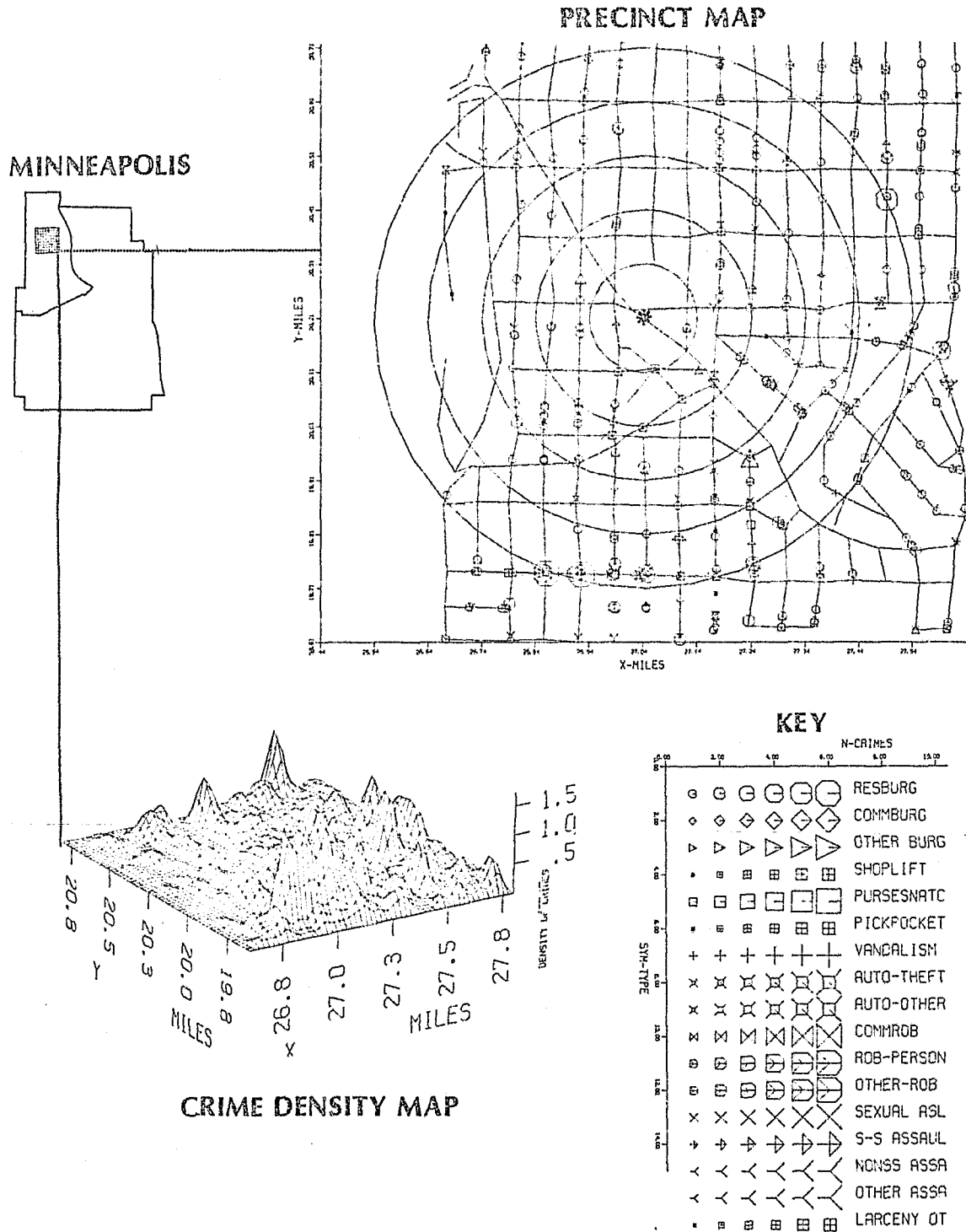


FIGURE 12

# FIFTH PRECINCT

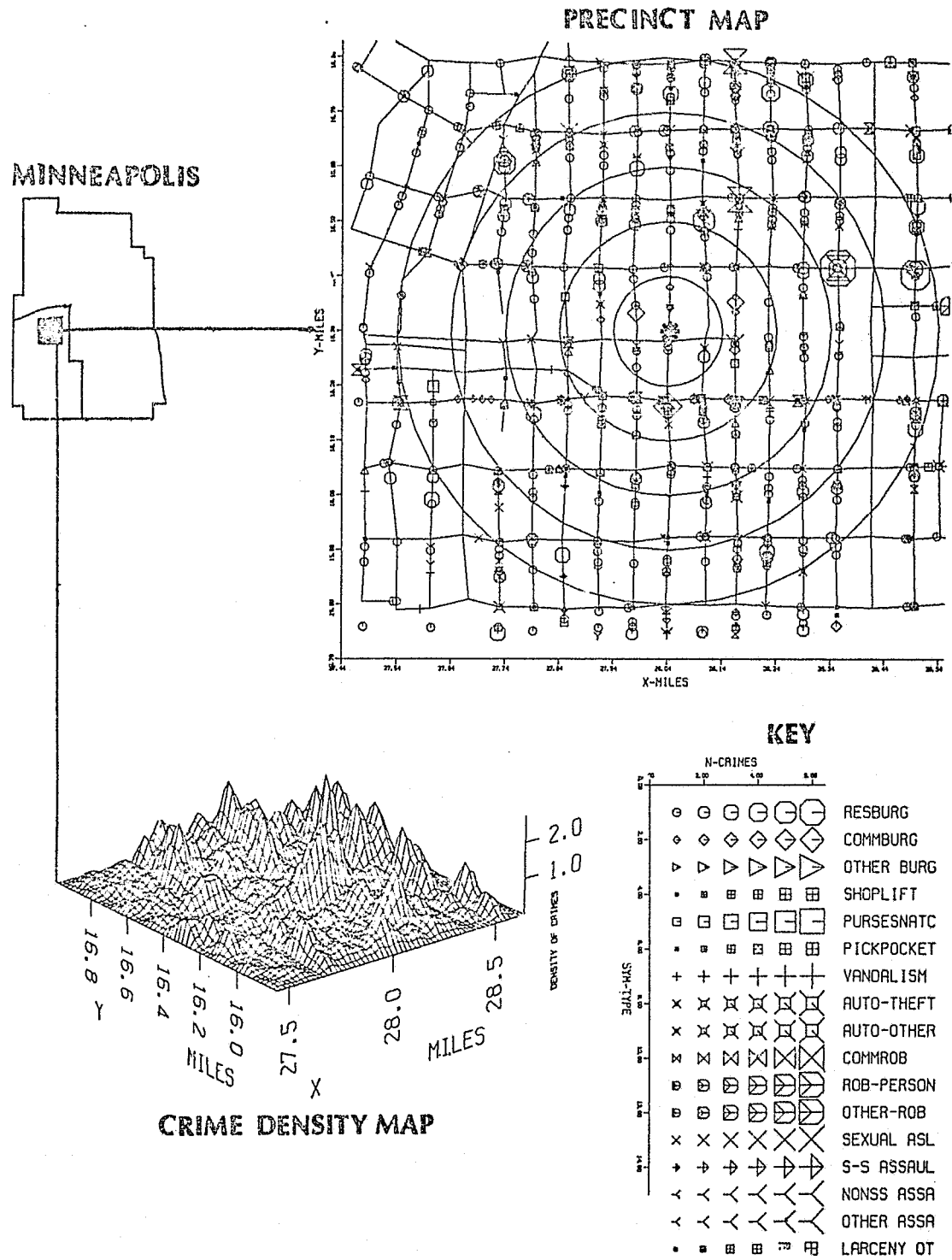
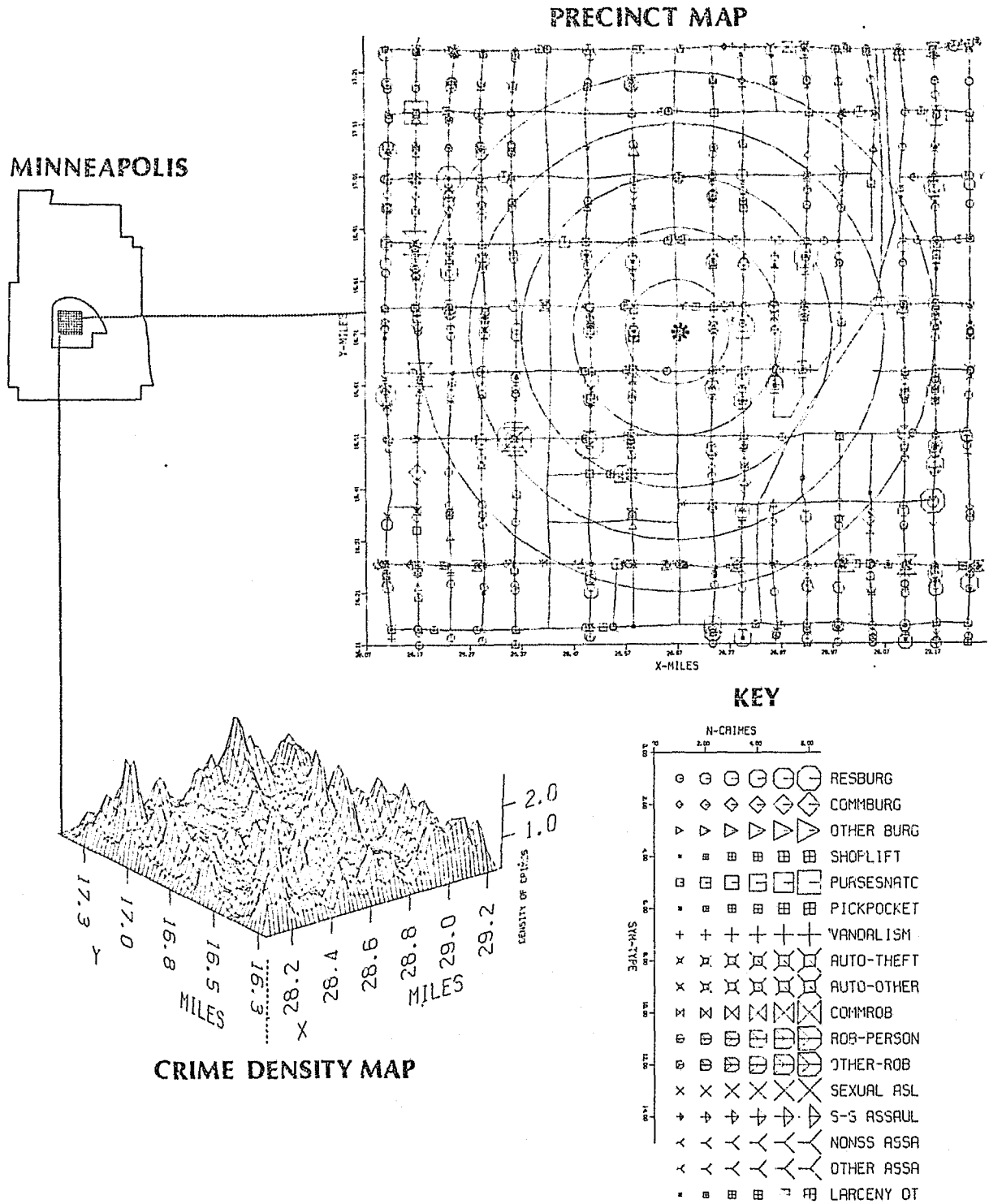


FIGURE 13

SIXTH PRECINCT





**END**