Transit-Generated Crime: Perception Versus Reality—A Sociogeographic Study of Neighborhoods Adjacent to Section B of Baltimore Metro

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A research gap exists in the study of crime specific to neighborhoods adjacent to transit stations. A body of data is available listing crime in those neighborhoods, but it is usually available in a form that impedes analysis of relationships between the neighborhood and the transit station—that is, the crime occurrences are tallied without concern as to how the offender traveled to his or her destination or without delineation of where exactly the crime occurred. It is hoped that transportation planners eventually will have data that can address the concerns of residents about potential increases in crime "due" to transit in areas designated for transit stations.

The purpose of this paper is to address a research gap for information related to crime in neighborhoods near transit stations. Although information on crime on transit systems, including stations, vehicles, and parking lots, can be found, virtually no data are available that would help explain a relationship between crime levels and neighborhoods near transit stations.

A crime can be said to occur when an offender breaks a law in force at a certain time in a particular place. Some crime is directed at a physical target, and some is directed at a person. The crime can be defined without the target element but is further described by the type of target (*1*).

The *Uniform Crime Reports*, or UCR, are used widely by criminologists and geographers as a standard form of crime measurement for crimes occurring in the United States. The UCR is compiled by the Federal Bureau of Investigation (FBI) and is divided into 29 types of offenses. The first tier of categories (known as Part 1 or index) are listed as serious and include criminal homicide, forcible rape, robbery, aggravated assault, burglary, theft, and automobile theft. These categories are those typically reported in the media and form the basis for much of the available crime research (*2*).

Although the UCR classification is used often for crime studies, it is just as often criticized for its inherent flaws and biases related to measurement methodology, such as inconsistent reporting by field officers (different officers prepare reports differently, or not at all), lack of reporting by victims who fear retribution or embarrassment, variances in the ways in which local police departments describe and report crime to the FBI, and the lack of data for crimes that are never detected and are therefore uncounted by police statisticians. Another major limitation of the UCR data for planners is that although the place of the crime is documented, the residence of the offender is not recorded.

Despite such flaws, the UCR is the most efficient, accurate, cost-effective, and practical set of data available to anyone who is studying crime occurrences as discrete events in time and space.

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STUDY OF CRIME

A study of crime that involves the exploration of possible transit influences requires research into the concept of "journey to crime": the trip that a criminal takes to gain access to potential targets of personal or property crimes. This commute to crime may originate at the offender's home with a direct criminally oriented destination, or it may involve a multipurpose trip that ties the offender to his or her home and the crime target.

Some of the available research has noted a distance decay concerning the actual travel patterns of criminals (*1*): as the distance between the criminal's origin and target increases, it becomes less likely for that criminal to commit a crime in the target area.

Distance decay for a criminal's journey to crime can be said to follow patterns similar to noncriminal journeys. Most people tend to shop, socialize, and otherwise move about in clusters of trips that are centered about their own homes. It appears that the criminal is no different in his or her concept of commuting to "work." The logic of the distance decay is inescapable when the variables of time, money, and effort are considered as potential friction factors to the journey.

In conjunction with these findings, other research has proposed that residential areas offer little attraction to an offender from outside. Nonresident offenders who have not developed mental maps of an area are less likely to commit crimes in the unknown area. Conversely, more public areas such as shopping centers are more familiar and therefore more attractive to the offender (*3*). It was also found that residential areas rank lowest, transitional and commercial areas highest, and industrial areas in between in terms of target attractiveness.

Because an offender tends to commit crime close to home, it is logical to theorize that similar friction factors will cause

the offender to search out targets that possess high potential return with minimal potential risk of failure or capture.

Friction factors can take the form of natural and man-made physical barriers such as streams, roadways, steep terrain, lighting, security locks, gates, fences, and general character of an area. Other, less tangible factors that may influence the offender's perceptions include activity levels, amount of police surveillance, and information passed along by other offenders.

DESCRIPTION OF STUDY

The study area chosen for this paper included the neighborhoods adjacent to the Baltimore Metro subway stations in suburban Baltimore County, Maryland (Figure 1). Adjacent is defined here to mean an area within a 10-min walk of the entrance to the Metro station. These walking limits are cognizant of physical impediments and therefore do not resemble concentric rings about a point of origin.

The Crime Reporting Area (CRA) used by the Baltimore County Police Department to organize data geographically was chosen to represent crime data at the neighborhood level. The CRAs for Baltimore County are neighborhood-sized areas (smaller than census tracts) defined generally by natural and man-made geographic edges such as stream valleys and roadways.

The Milford Mill and Old Court Road Metro stations, opened in July 1987, are located in areas of mixed land use northwest of the Baltimore city line. Areas next to the stations are dominated by small single-family homes situated on lots of

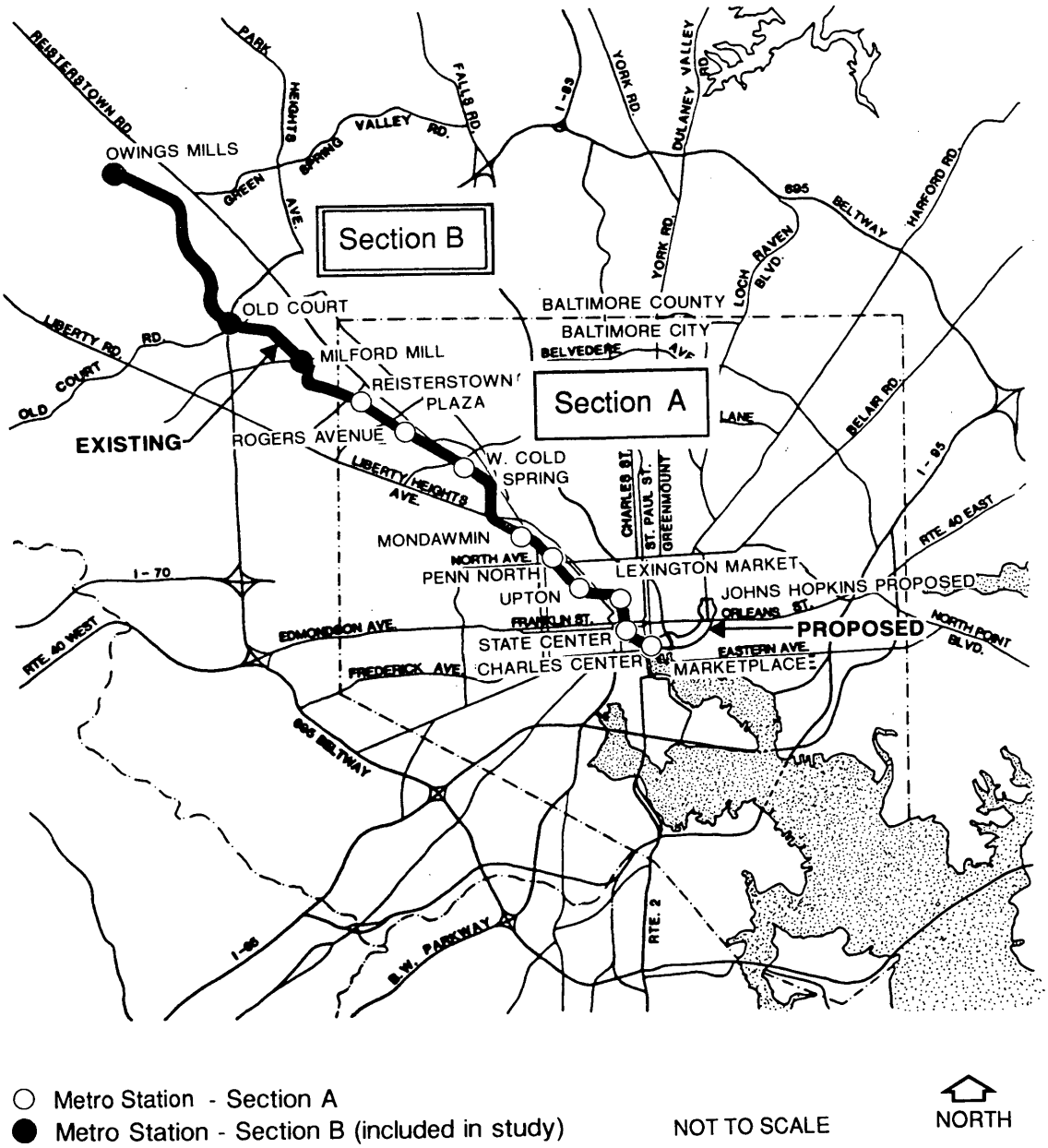
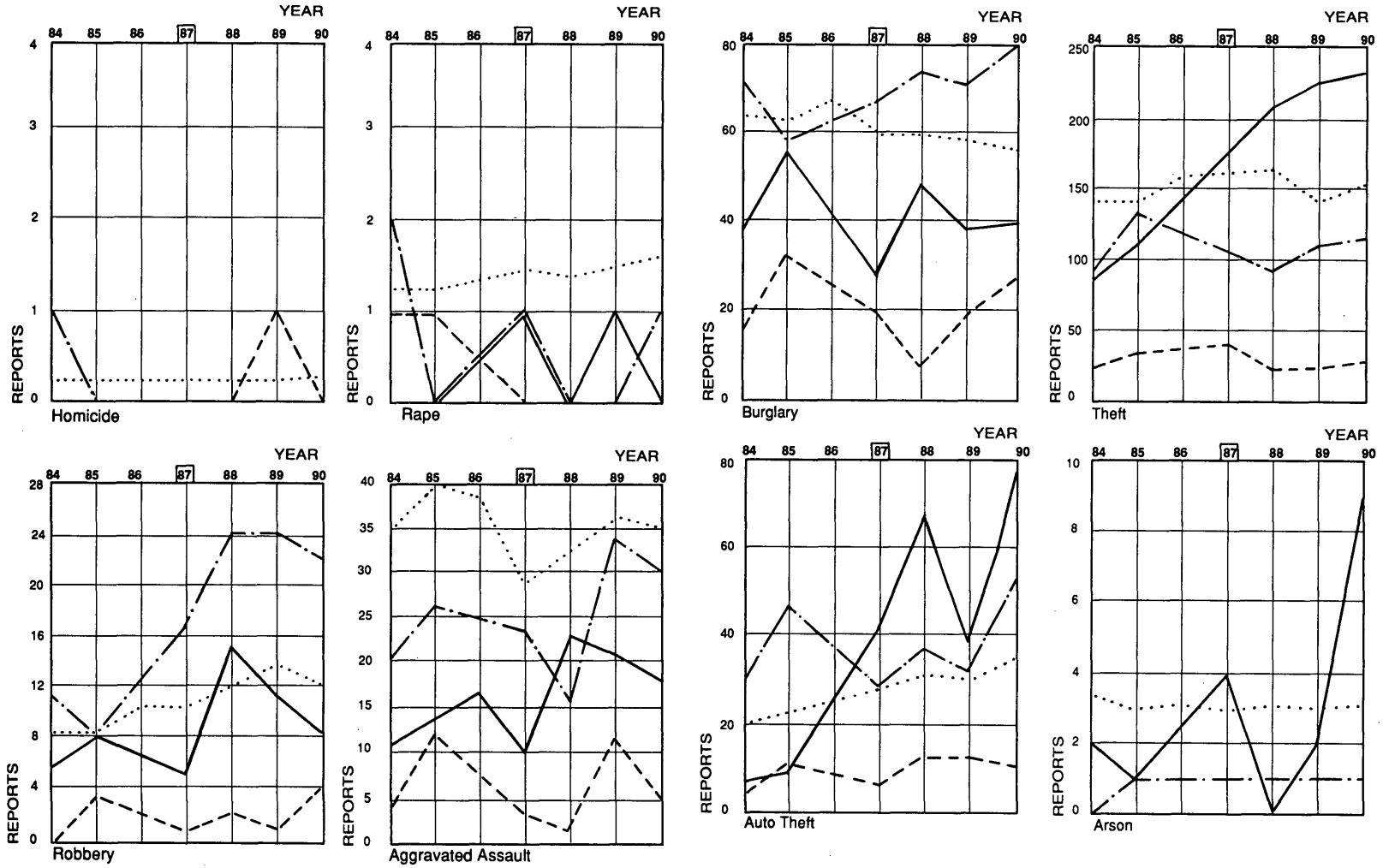


FIGURE 1 Map of Metro stations in suburban Baltimore County, Md.



Owings Mills Area ——— Milford Mill Area —·—
Old Court Road Area – – – Baltimore County Rate ·····

FIGURE 2 Neighborhood crime for Metro Section B, 1984–1990.

about 0.25 acre with some commercial and industrial uses and expanses of apartment buildings. Both stations have large surface parking facilities next to the station buildings.

The land use near the Owings Mills Station (also opened in July 1987) is dominated by the Owings Mills Mall, a large regional shopping mall northwest of the Metro station in the area shown on the figure as the Owings Mills Town Center. The Metro station is situated in the median of I-795, the Northwest Expressway. Surface parking areas for the station are located on both the east and west sides of the highway and are connected by an under-the-highway promenade.

Crime occurrence statistics were gathered for each of the three station areas for eight Part 1 crimes tracked by Baltimore County. The most disappointing aspect of the statistics was that crime locations could not be obtained for transfer to a pin-dot map, which would have illustrated any distance trends or clustering. Data were available only at the CRA level, with no specific locations or addresses.

ANALYSIS

As seen in Figure 2, crime varies significantly by category in the three Metro neighborhoods. A review of the crime statistics gathered for 3 years before Metro's opening of Section B and 3 years after indicates that reported crime is on an upward, though erratic, trend in Baltimore County near these transit stations for most of the major categories. But it is also true that similar upward trends are true for the county in general, as indicated by the county trend line (representing crime occurrences per 5,000 residents as distilled from a rate per 100,000 residents for pictorial purposes).

Whether increases in crime in the neighborhoods of this study can be attributed directly to the addition of a transit station cannot be determined with the data available. The absolute numbers of occurrences are relatively low, and trends are difficult to determine. In addition, the nature of the variables that can influence the reporting of crime discussed previously could have been responsible for some or all of the increases and decreases for certain reporting years.

RECOMMENDATIONS

The geographic unit used by Baltimore County, the CRA, is smaller than a census tract but still so large that it provides only general neighborhood-level data. In addition, demographic data are not available at the CRA level that would allow for direct per-capita comparisons between these study neighborhoods and neighborhoods without Metro stations. Analysis of a demographically similar, radial-oriented suburban corridor of neighborhoods without Metro would provide a control group for more direct and viable suburb-to-suburb comparisons instead of the simplified suburb-to-county comparison presented herein.

Specific locations of crime occurrences would add another level of detail to this study. The dispersion of crime about a transit station could then be analyzed to determine any potential spatial influences or trends. Follow-up studies tracking a perpetrator's place of residence and the manner in which the perpetrator traveled to the crime scene would also be extremely beneficial in the more accurate determination of whether criminal commuters use transit stations. Such studies can be accomplished only if local enforcement officials are willing and legally able to gather these data. Even then, the information may be questionable because of its source—the perpetrator.

Crime as a potential secondary effect of a proposed transit system is an issue that continues to be raised by community groups, especially in suburban areas. In this study some increases in crime have been found, but further conclusions based on the data are problematic.

This paper has scratched the surface of a topic that is in need of further research. It is a topic that is important for the people living near transit stations and the transit professionals planning for future stations and lines. The goal of this paper was to begin to fill a gap in research concerning crime in neighborhoods near transit stations. Further studies should look into working with enforcement agencies to develop data that provide more exact crime locations and include the location of the offender's domicile and the manner in which the offender traveled to the crime site. Establishment of studies of residents' perceptions about crime before and after transit projects are completed would also help planners. This paper has initiated what is hoped will be a significant field of study by planners.

REFERENCES

1. *Environmental Criminology* (P. J. Brantingham and P. L. Brantingham, eds.). Sage Publications, London, England, 1981.
2. K. D. Harries. *The Geography of Crime and Justice*. McGraw-Hill Book Company, New York, 1974.
3. W. M. Rhodes and C. Conly. Crime and Mobility: An Empirical Study. In *Environmental Criminology* (P. J. Brantingham and P. L. Brantingham, eds.), Sage Publications, London, England, 1981.

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