Transportation

Kentucky Transportation Center Research Report

University of Kentucky *Year* 1983

Traffic Safety Analysis: University of Kentucky Area

Kentucky Transportation Research Program

Research Report
UKTRP-83-4

TRAFFIC SAFETY ANALYSIS: UNIVERSITY OF KENTUCKY AREA

by

Kentucky Transportation Research Program
College of Engineering
University of Kentucky

and

Division of Traffic Engineering
Lexington-Fayette Urban County Government

in cooperation with
U.S. Department of Transportation

February 1983

TABLE OF CONTENTS

INTRODUCTION

The concept of Transportation System Management (TSM) is based on the use of transportation facilities for the efficient and safe movement of people and goods. Through a grant administered by the U.S. Department of Transportation, the Lexington-Fayette Urban County Government contracted with the University of Kentucky (UK) to develop and implement a "Ridesharing Program" and a "Minor Traffic Control Improvements Program".

Discussions of the traffic safety problems around the University area by the Lexington-Fayette Urban County Council coincided with UK's initial work in the traffic safety portion of the grant. Following those discussions, a request was made by the Council that the Urban County Government's Division of Traffic Engineering coordinate their efforts with the TSM study conducted by the University's Transportation Research Program. Recommendations from this study reflect the cooperative efforts of both parties; however, the major portion of the data collection and analyses was performed by the UK Transportation Research Program.

This report addresses the subject of a "Minor Traffic Control Improvements Program" on and around the University of Kentucky campus. Included is an overall review and analysis of high-accident intersections and streets. Specific emphasis was placed on accidents involving pedestrians and bicyclists. Separate analyses were made to determine if speed-related accidents constituted a serious problem or if a significant number of accidents were related to on-street parking. Special consideration was also given to the need for a "university traffic zone".

This study was an operational-type analysis with the objective of recommending relatively minor and inexpensive improvements that were implementable. Consideration was given to long-range plans of the University and the Urban County Government. Such plans include major changes in the transportation function of Euclid Avenue and Rose Street. While the University is interested in closing Rose Street and limiting any further expansion of Euclid Avenue, by the extension of Newtown Pike, the Urban County Government desires to provide improved transportation facilities in and around the University area. The traffic direction and volume related to University activities significantly affects flow on streets not only within the campus area but also off the campus area, notably South Limestone Street, Harrison Street, Woodland Avenue, Waller Avenue, Virginia Avenue, Maxwell Street, Cooper Drive, and Tates Creek Pike. However, changes resulting in major roadway construction were not extensively considered due to the limited focus of an operational study such as this. It should be noted that a major objective of the University regarding traffic and land use planning is that the campus area be more homogenous without significant intrusion by arterial and collector streets. It has been proposed that an eastside collector be built to connect University Drive with Woodland Avenue. Though not a panacea to all traffic problems in the Rose Street corridor, this concept could provide an alternative to improve campus traffic circulation.

DATA COLLECTION

Data collection primarily consisted of retrieving accident reports and processing information from those reports that would be useful for the study. Accident data were collected for a three-year period from January 1, 1980, through December 31, 1982. The study area for which accidents were collected is shown in Figure 1. For the purpose of identifying accidents, intersections or dead-end streets were designated as nodes. The total number of nodes for the study area was 115. Sections of streets between nodes were designated as midblock sections. A total of 1,879 accident reports were collected, coded, and placed in a computer file. Coding consisted of extracting the desired information from the accident report form, identifying the location of the accident, and determining

the type of accident by selecting the appropriate accident description code.

Additional types of data included in the overall analysis were volumes and section lengths for the major streets for use in calculating accident rates. Timing of traffic signal phases was also done to determine the cause of right-angle or ran-the-red-light accidents. Speed data were collected to aid the analysis of speed-related accidents.

As a separate data collection effort, pedestrian movements were video-taped on Rose Street and Euclid Avenue (Avenue of Champions). This was an attempt to document the magnitude of the pedestrian problem around the campus area. On a Friday and a Monday, pedestrian movements were taped for approximately one hour at each location to obtain the maximum exposure of pedestrians to traffic.

GENERAL ACCIDENT STATISTICS

After the accident data set had been coded and entered into a computer file, various accident summaries that depict overall statistics for the study area were generated. Summaries were prepared that present accident variations by year, month, day, and time of day. There were 1,879 accidents for the three-year study period from 1980 through 1982. Hardly any variation in accidents was noted by year. There were 633 accidents in 1980; 619 accidents in 1981; and 627 accidents in 1982.

VARIATION WITH TIME

The monthly variation in accidents is presented in Table 1. As shown in that table, the largest numbers of accidents occurred in September, October, and November and the smallest numbers occurred in May and June. Also presented in Table 1 is the monthly percentage of accidents for the UK study area as compared to a statewide average for 1980. The statewide average distribution by month is much more evenly distributed than the UK area. Considering the University's semester schedule, the monthly variations were not unexpected. High percentages of accidents in the fall could be attributed to the influx of new students at the beginning of a new semester and increased activity associated with football games.

The distribution of accidents for the UK area by day of the week is also different from the statewide average. As shown in Table 2, the primary differences occur on weekends when the UK area has substantially fewer accidents than the statewide average. For example, only 12.7 percent of the weekly accidents occurred on Saturday in the UK area as compared to 16.6 percent for the state. Conversely, this table shows that a higher number of accidents occur on Monday through Thursday for the UK area as compared to the statewide average. Those accident trends are apparently related to the class schedule at UK, which is concentrated on Monday through Friday. However, few classes are held on Friday afternoons and that day has about the same percentage of accidents for UK streets and all highways in Kentucky.

Accidents by time of day do not show the same pattern as the statewide average for 1980 (Table 3). Most apparent is the difference from 6:00 am till 3:00 pm. During that period, the percentage of accidents for the UK area is substantially greater than the statewide average. Again, this trend is very likely related to the concentration of classes in the morning and early afternoon. Statewide percentages are higher than the UK area from 3:00 pm until 9:00 pm and about the same from 9:00 pm until 3:00 am.

SEVERITY

Another summary that relates accident severity to type of operator involved was prepared. Presented in Table 4 are numbers of fatalities and injuries for drivers, motorcyclists, bicyclists, and pedestrians. That table shows that one fatality occurred in the study area over a three-year period. This involved a single-vehicle accident (collision with utility pole) with alcohol involvement. Of the 439 injuries, 362 were drivers, 37 were pedestrians, 28 were bicyclists, and

13 were motorcyclists.

To compare severity of accidents in the study area with the statewide average, a measure called severity index was used. Presented in Table 5 is a comparison of accident severities for the study area and the statewide average for 1980. Those data show that the severity index for accidents in the UK area was substantially less than the statewide average. The percentages of fatal and non-fatal accidents are also much less for the study area as compared to statewide statistics. The lesser accident severity would be related to the low traffic speed in the UK area.

The percentage of fatal or injury accidents in the UK area was 15.7 percent. This compares to 21.7 statewide (1980) and 19.5 for all of Fayette County (1978-1980)(1). It is significant to note that accident severity in the UK area was less than that for all of Fayette County.

DESCRIPTION

A significant amount of the overall analysis was dependent upon the accident description codes assigned to each of the 1,879 accidents. Presented in Table 6 is a summary of accident description codes and the number and percentage of accidents for each code. It was shown that the most frequently occurring type of accident involved a collision when one of the vehicles was in a parked positon along a street (11.9 percent). The next most frequently occurring type was accidents in a parking lot. Other frequently occurring types were angle accidents, rear-end collisions, and "opposite direction" accidents. "Opposite direction" accidents were mostly collisions resulting when one vehicle turned left into the path of an oncoming vehicle. An unusually high number of "same direction-turning from wrong lane" accidents were found on Maxwell Street.

There were 18 pedestrian accidents at intersections and 18 pedestrian accidents on roadway sections or midblocks. Combining accidents at intersections and midblocks yielded a total of 33 bicycle-related accidents.

As noted in Table 6, accident description codes were grouped into categories of intersections, midblocks, and parking lots. Presented in Table 7 is a summary of accidents for those three groups. It was found that 49 percent of the accidents occurred at intersections, 40 percent at midblocks, and 11 percent in parking lots.

CONTRIBUTING FACTORS

Additional information presented on the accident report form indicates factors that may have contributed to the accident. Those factors are categorized as either human, vehicular, or environmental. Presented in Table 8 is a summary of contributing factors for the UK study compared to statewide statistics for 1980. Some contributing human factors varied significantly from statewide percentages. Unsafe speed was cited much less frequently in the UK area (1.8 percent) as compared to statewide (8.8 percent). Alcohol was also listed as a contributing factor less frequently. Conversely, improper turning movements and driver inattention were noted more often as contributing human factors.

Generally, all types of contributing vehicular factors were cited less frequently for the UK area as compared to statewide. No unusual or unexpected trends were noted when contributing environmental factors were summarized. Types of factors where the UK area exceeded statewide percentages were obstructed view and improperly parked vehicles.

Of the 84 accidents involving an obstruction of view, 47 (56 percent) occurred at intersections. This problem occurred most frequently at the intersection of Euclid Avenue and Woodland Avenue. All eleven accidents of this type at that location were related to left-turning vehicles on Euclid Avenue. This problem should be solved by the left-turn lane to be installed on Euclid Avenue. Three accidents of that type occurred at the intersections of South Limestone Street and Prall Street, University Drive and Complex Drive, and Euclid Avenue and

Rose Street.

HIGH-ACCIDENT INTERSECTIONS

There were 918 accidents at the 105 intersections in the UK study area. A listing of the 32 intersections with ten or more accidents is given in Table 9. That table lists the total number of accidents as well as the number of injury accidents that occurred at these intersections. The intersection of Euclid Avenue and Woodland Avenue had the highest number of accidents.

Summaries (using accident description codes given in Table 6) of accidents occurring at these intersections are given in Appendix A. Comments are given describing any accident problem found.

HIGH-ACCIDENT STREETS

A listing of 21 streets with ten or more midblock accidents is given in Table 10. Of the 1,879 accidents in the study area, 750 (40 percent) were classified as occurring at a midblock location. For each street, this table gives the number of total as well as injury accidents, the length of the street in the study area, and the number of midblock accidents per mile per year.

South Limestone Street was found to have the highest number of midblock accidents, followed by Rose Street. When section length was considered, those same streets had high rates. The highest numbers of midblock accidents per mile per year were on Funkhouser Drive and Medical Center Drive.

Summaries, by accident description, of mid-block accidents occurring on the streets listed in Table 10 are given in Appendix B. Comments are given describing any accident problem found. For minor collector and local streets, on-street parking was consistently the leading cause of accidents. Rear-end accidents were more of a problem on major collector and arterial streets.

Volume counts were taken on major arterial and collector streets in the area, and accident rates, given in terms of accidents per 100 million vehicle-miles (acc/100 mvm), were calculated. Those rates are given in Table 11 in descending order of accident rate. The short section of Columbia Avenue had the highest accident rate. The three major arterials in the area (South Limestone Street, Euclid Avenue, and Rose Street) had similar accident rates.

PEDESTRIAN ACCIDENTS

During the three-year study period, there were 36 pedestrian-related accidents in the UK study area. Eighteen of the accidents occurred at intersections and 18 occurred at midblock locations. Those accidents resulted in 37 injuries to pedestrians, of which 16 were incapacitating, 17 were non-incapacitating, and four were listed as possible injuries. The number of pedestrian accidents has varied from 14 in 1980, to 13 in 1981, to 9 in 1982.

A total of 1.9 percent of all UK area accidents were pedestrian related. Data from a past report showed that, for the period 1978 through 1980, 1.5 percent of all accidents occurring in Lexington were pedestrian related (1). For comparison, 1.5 percent of all accidents in Louisville were pedestrian related (1). Also, 1.5 percent of all accidents were pedestrian related for the 12 cities in Kentucky with populations over 20,000. This percentage ranged from 0.7 percent in Bowling Green to 3.2 percent in Newport. Those comparisons show that, while the percentage of pedestrian-related accidents in the UK area was slightly higher than for all of Lexington, there does not appear to be a particularly severe accident problem in the UK study area.

More than one pedestrian-related accident occurred at only four intersections during the three-year study period. The highest number of accidents (four) occurred at the intersection of South Limestone Street and Euclid Avenue. Two accidents occurred at the intersections of Euclid Avenue and Woodland Avenue, South Limestone Street

and Washington Avenue, and Cooper Drive and University Drive.

Fifteen of the eighteen intersection accidents occurred at a signalized intersection. Four of the accidents were related to a vehicle turning right on red. In 11 of the intersection accidents, the vehicle was turning when the accident occurred. In only one of the midblock accidents did the accident report indicate the pedestrian was crossing at a marked crosswalk. Only four of the accidents occurred on weekends. One-half of the accidents occurred between 8:00 am and 4:00 pm on weekdays.

More than one midblock accident occurred on three streets. Five of the midblock accidents occurred on South Limestone Street; three occurred between Upper Street and Maxwelton Court and two between Euclid Avenue and Upper Street. Two midblock accidents occurred on Rose Street between Euclid Avenue and Columbia Avenue. Two midblock accidents occurred on Maxwell Street, and the remaining accidents occurred on other streets.

While thousands of pedestrians cross public streets throughout the University area each day, the pedestrian accident problem was not found to be critical in the study area. There are, however, safety improvements that could be made to attempt to improve safety for the pedestrian. Almost all intersection accidents occurred at signalized intersections, and four were related to vehicles turning right on red. Therefore, signs prohibiting turning right on red at certain intersections should be installed. Such signs have recently been installed at the intersections of South Limestone Street and Euclid Avenue and at Euclid Avenue and Harrison Street. Other signalized intersections in the university area are additional potential locations for such signing. Those potential locations include the following: Cooper Drive and University Drive, Euclid Avenue and Woodland Avenue, Euclid Avenue and Rose Street, Rose Street and Columbia Avenue, Rose Street and Washington Avenue, South Limestone Street and Maxwelton Court, and South Limestone Street and Prall Street. A left turn on red can be made from a one-way street to another one-way street. A sign prohibiting a left turn on red from South Limestone Street to Euclid Avenue should be added. Since pedestrian volume associated with university students is peaked, it may be desirable to limit turn prohibitions to specific times or days of the week. Based on pedestrian volumes and accident experience, these turn limitations could be in effect from 8:00 am to 4:00 pm on weekdays.

Almost all intersections that have significant pedestrian volumes have marked crosswalks. However, a few locations were found where the addition of a marked crosswalk appeared to be warranted. Those approaches were sidestreet approaches at nonsignalized intersections.

The only intersection with more than one pedestrian accident that did not have a pedestrian signal was Euclid Avenue and Woodland Avenue; the addition of a pedestrian signal should be considered at that point. Other intersections where pedestrian signals should be considered are Rose Street at Columbia Avenue, Rose Street at Washington Avenue, and the new signal on South Limestone Street at Prall Street.

The section of South Limestone Street between Upper Street and Maxwelton Court had the highest number of midblock pedestrian accidents. This section has recently been restriped to add a fifth lane, which provides turning lanes and marked pedestrian refuge areas. This improvement should lessen the problem.

Observations of pedestrian traffic show the highest volume exists on Rose Street between Washington Avenue and Columbia Avenue, specifically between Washington Avenue and Funkhouser Drive. While accident data have not shown a problem in that area, the potential exists. Additional measures may be warranted there to alleviate potential accident problems.

BICYCLE ACCIDENTS

During the three-year study period, there were 33 bicycle-related motor-

vehicle accidents (including two moped accidents) in the UK study area. Of that total, 21 occurred at intersections and 12 occurred at midblock locations. Those accidents resulted in 28 injuries to bicyclists, of which four were incapacitating, 19 were non-incapacitating, and five were classified as possible injuries. The number of accidents varied from 13 in 1980, to 9 in 1981, to 11 in 1982.

A total of 1.8 percent of all UK area accidents were bicycle related. Data from a past report showed that, for the period 1978 through 1980, 0.7 percent of all accidents occurring in Lexington were bicycle related (1). For the 12 cities in Kentucky with populations over 20,000, 0.7 percent of all accidents were bicycle related. That percentage ranged from 0.4 percent in Ashland to 1.1 percent in Owensboro. Those percentages show the UK study area has had a much higher than average number of bicycle-motor vehicle accidents.

Over one-half of the bicycle accidents occurred on two streets; 11 on South Limestone Street and 10 on Rose Street. The next highest number was four accidents on Euclid Avenue. A past analysis of bicycle-related motor-vehicle accidents in Lexington found those three streets to have the highest number of bicycle accidents over a seven year period (2). That report divided Lexington into several zones, and the highest percentage of bicycle accidents occurred in the zone representing the University of Kentucky.

The highest number of bicycle accidents occurring at any single intersection was two. The following four intersections had two accidents during the study period; South Limestone Street and Maxwelton Court, Rose Street and Huguelet Drive, Rose Street and College View Avenue, and Woodland Avenue and Columbia Avenue.

In only four of the accidents was the bicyclist traveling on the sidewalk, and only one of those occurred on a major street. One accident on South Limestone Street (at Washington Avenue) involved a bicyclist on the sidewalk.

As part of the previous study which dealt with bicycle accidents in Lexington, some very limited bicycle volume counts were taken on Nicholasville Road, Rose Street, and Euclid Avenue (2). Counts were taken from 1:00 pm to 4:00 pm on a Monday in May. Bicycle volumes during the three-hour periods varied from 69 on Rose Street, to 63 on Euclid Avenue, to 21 on Nicholasville Road. Adjusting the counts to approximate a peak day condition would mean that there are sufficient volumes to warrant provision of a separated facility on Rose Street and Euclid Avenue when compared to the general warrant given by American Association of State Highways and Transportation Officials of 200 or more bicycles per day (3). The number of bicyclists using the sidewalk varied from 13 on Nicholasville Road to 38 on Rose Street to only 6 on Euclid Avenue.

Some safety improvements are warranted to alleviate the high number of bicycle-related motor-vehicle accidents in the UK area. The highest numbers of accidents occurred on South Limestone Street and Rose Street, which already have curb ramps. The sidewalk should be maintained properly to encourage usage by the bicyclist, particularly on South Limestone Street. Rose Street has a very high pedestrian volume, which makes use of the sidewalk by a bicyclist difficult. A large portion of Rose Street is of sufficient width to allow marking a bicycle lane. Curb ramps should be added to Euclid Avenue to provide the cyclist better opportunity to use the sidewalk. Consideration also should be given to marking the high-accident streets as bicycle routes, using the bicycle route sign as shown in the Manual on Uniform Traffic Control Devices (MUTCD) (4). Those signs would serve as a reminder to motorists of the presence of bicyclists. An alternative sign would be the bicycle warning sign given in the MUTCD.

ON-STREET PARKING

It was noted that on-street parking was the leading cause of accidents on minor collector and local streets. Widths of the streets on which on-street parking

was a major contributing factor in accidents were measured and compared to recommended design standards (5). The recommended design widths were as follows:

1. 40 feet for a two-lane collector street with parking on both sides,
2. 32 feet for a two-lane collector street with parking on one side,
3. 36 feet for a two-lane local street with parking on both sides, and
4. 29 feet for a two-lane local street with parking on one side.

This compares to current Urban County Government (UCG) Subdivision Regulations requiring a minimum width of 30 feet for local streets and 36 feet for collector streets.

Some streets with large numbers of accidents involving on-street parking provide required parking for residence halls, and it would be difficult to prohibit parking. Examples of such streets are Commonwealth Drive and Huguelet Drive (UK streets). However, a few of the public streets within the campus area had accident problems related to on-street parking.

Linden Walk is a two-lane local street with parking permitted on both sides. The street's width of 30 feet is below the recommended design width (36 feet) but meets minimum UCG subdivision regulations. Limiting parking to one side would provide greater street width to maneuver and would likely reduce accidents related to on-street parking. Driveways are available on Linden Walk for residential parking. Columbia Avenue is a two-lane collector street with parking permitted on one side. Its 25 foot width is below the recommended design width of 32 feet. However, a few houses along Columbia Avenue do not have private driveways, which makes complete removal of on-street parking difficult.

The width of the two-lane portion of Clifton Avenue is slightly below the recommended design standard. The measured width is between 34 and 35 feet, which is slightly below the 36-foot recommended design width for two-lane local streets with parking on both sides. That street had a high number of accidents related to on-street parking, and consideration should be given to allowing parking on only one side.

The accident summary showed that view obstruction was given as a contributing factor in a large number of accidents. One potential source of an obstructed view is allowing on-street parking too close to an intersection. The MUTCD (4) shows that parking should be prohibited at least 30 feet from the crosswalk on an approach to a signalized intersection and 20 feet at other intersections. Also, on-street parking should be prohibited for 100 feet in advance of and 20 feet beyond midblock pedestrian signals. Measurements were taken at several intersections to check adherance to those guidelines.

SPEED-RELATED ACCIDENTS

During the three-year study period, there were 33 accidents in which unsafe speed was listed on the accident report as a contributing factor. That represents 1.8 percent of all accidents. Twenty-four percent of those accidents involved an injury, but no fatalities were involved. A previous study found, for the 1978-1980 period, that unsafe speed was listed for 4.8 percent of all accidents in Lexington (1). For all cities in Kentucky with populations over 20,000, that percentage was 4.6 percent with a range of from 1.7 percent in Owensboro to 5.7 percent in Louisville. These comparisons show that unsafe speed is not a significant factor contributing to accidents in the UK area.

Euclid Avenue and South Limestone Street had the highest number of "unsafe speed" accidents with six. Rose Street had four of that type of accident. The speed limit on each of those three streets is 35 mph (except for the portion of South Limestone Street (Nicholasville Road) south of Rose Street). Standard engineering practice suggests that the speed limit should be approximately equal to the 85th percentile speed. Spot speed studies were conducted on each of those streets (including the portion of South Limestone Street with a 35 mph speed

limit). The studies found 85th percentile speeds of 36.5 mph on Euclid Avenue, 33 mph on Rose Street, and 36 mph on South Limestone Street.

Considering both the number of speed-related accidents and the operating speeds indicates that current speed limits are generally appropriate. Analyses of past accidents indicates lowering of the speed limit on major streets would not significantly affect the number of accidents, and placing an unreasonably low speed limit would lead to its disrespect by the driving public. The only street where a lower speed limit should be considered is Rose Street. The 85th percentile speed was lower on Rose Street than the other major streets. Also, the pedestrian traffic crossing Rose Street is the highest of any street in the UK area.

ALCOHOL-RELATED ACCIDENTS

There were 105 alcohol-related accidents in the UK area during the three-year study period. This represents 5.6 percent of all accidents. A previous study found that, for 1978 to 1980, 7.8 percent of all accidents in Lexington were related to alcohol (1). For the 12 cities in Kentucky with populations over 20,000, that percentage was 5.8 percent, with a range from 3.5 percent in Ashland to 8.8 percent in Covington. These comparisons show there does not appear to be an unusual problem with alcohol-related accidents in the UK area. The number of alcohol-related accidents varied from 37 in 1980, to 38 in 1981, to 30 in 1982.

PARKING-LOT ACCIDENTS

A total of 211 accidents occurred in parking lots. A listing of the number of accidents occurring on the major lots is given in Table 12. The highest number (39 accidents) occurred in the Commonwealth Stadium lots. A large number of accidents also occurred in the lots around the Medical Center.

WET-SURFACE ACCIDENTS

Approximately 18 percent of all accidents in the UK area occurred on a wet pavement. This compared to about 15 percent statewide in 1980. The percentage of wet-surface accidents for major streets are given in Table 13. South Limestone Street was separated into two sections divided at Rose Street, since the section between Rose Street and Shawnee Place had been more recently resurfaced compared to the other portion of the street. Considering both number and percentage of wet-surface accidents, the portion of South Limestone Street north of Rose Street (Rose Street to Maxwell Street) appears in greatest need of resurfacing.

UNIVERSITY TRAFFIC ZONE

Consideration has been given to establishing a special "university traffic zone" around the UK campus. Suggestions have been made including special signs, speed bumps, or possibly reduced speed limits. However, accident analyses indicate unsafe speed has not been an accident problem. Also, most midblock accidents have resulted from on-street parking or traffic congestion. Numerous improvements have been recommended relating to accident patterns at high-accident intersections within the campus area. Pedestrian accidents do not present a severe problem, but additional traffic signing and pedestrian signals that could reduce pedestrian accident potential were recommended. Therefore, the establishment of a special "university traffic control zone" does not appear justified. The placement of information signs, however, on major arterials approaching the UK area may be warranted. Those signs should conform to the general standards for guide signs, with a white message on a green background (4). A possible message could be the words "UNIVERSITY OF KENTUCKY" along with the symbol designs warning of the presence of pedestrians and bicyclists.

SUMMARY

1. There were a total of 1,879 traffic accidents in the UK study area from 1980 through 1982. The number of accidents for each of these years was very similar.

2. Considering variation with time, there were differences between accidents in the UK area and statewide statistics. For example, a lower percentage of accidents in the UK area occurred on weekends.

3. The severity of accidents in the UK area was lower compared to either statewide or Fayette County accidents.

4. Approximately one-half of all accidents occurred at intersections. The most common accident type was midblock accidents involving on-street parking. The next most common accident type was accidents in a parking lot. The most common intersection accidents were right-angle, opposed left turn, and sideswipe involving a turn from the wrong lane.

5. Turning improperly was listed as a contributing factor substantially more often in the UK area compared to statewide statistics.

6. There were 105 intersections identified in the UK study area, and 918 accidents occurred at these intersections. Intersections with 10 or more accidents were analyzed separately, and comments concerning the types of accidents occurring at each intersection are given in Appendix A.

7. High-accident streets with 10 or more accidents were also identified and analyzed. Appendix B contains a summary of accidents on those streets. A total of 750 accidents occurred at midblocks or non-intersections. South Limestone Street had the highest number of accidents.

8. Of the 36 pedestrian-related accidents, 18 occurred at intersections and 18 at midblock locations. Comparisons show that, while the percentage of pedestrian-related accidents in the UK study area was slightly higher than for all of Lexington, the area does not appear to have a severe accident problem.

9. With 33 bicycle-related accidents, the UK area had a higher than average percentage of this type of accident.

10. Analyses of accidents showed unsafe speed was not a significant factor contributing to accidents in the UK area. The number of speed-related accidents and operating speeds indicate current speed limits are generally appropriate.

11. Comparisons showed there was not an unusual problem of alcohol-related accidents in the UK area.

12. A substantial number of accidents occurred in parking lots. The highest number occurred in the lots around Commonwealth Stadium.

RECOMMENDATIONS

Following is a listing of recommendations resulting from the traffic safety analysis of the University of Kentucky area. The recommendations are generally categorized by the subject areas studied.

PEDESTRIANS

1. Install pedestrian signals at the following intersections:
   a. Euclid Avenue-Woodland Avenue,
   b. Rose Street-Columbia Avenue,
   c. Rose Street-Washington Avenue, and
   d. South Limestone Street-Prall Street.

2. Install signs to prohibit right-turn-on-red at the following intersections:
   a. Rose Street-Euclid Avenue,
   b. Rose Street-Columbia Avenue, and
   c. Rose Street-Washington Avenue.

   Note: A supplemental sign indicating time of right-turn-on-red prohibition recommended. This time should be from 8:00 am to 4:00 pm weekdays.

3. Install a sign prohibiting left-turn-on-red at the intersection of South Limestone Street with Euclid Avenue. The appropriate time for this prohibition would also be 8:00 am to 4:00 pm

weekdays.

4. Upgrade painted crosswalk markings at existing crosswalks and add painted crosswalks on the following intersection stop approaches:
a. Lexington Avenue at Euclid Avenue,
b. Woodland Avenue at Hilltop Avenue,
c. Huguelet Drive at Rose Street,
d. Medical Center Drive at Rose Street,
e. Clifton Avenue at Rose Street,
f. Rose Lane at Rose Street,
g. Collge View Avenue at Rose Street,
h. College View Avenue at Lexington Avenue, and
i. Scott Street at South Upper Street.

BICYCLES

1. Construct curb ramps on Euclid Avenue.
2. Install bicycle warning signs or bicycle route signs on South Limestone street, Euclid Avenue, and Rose Street. Those signs are given in the MUTCD (4). The warning sign is referred to as sign W11-1 and the route sign is sign D11-1.
3. Provide bicycle lanes on Rose Street from near Washington Avenue to Rose Lane.

ON-STREET PARKING

1. Eliminate parking on Columbia Avenue between Pennsylvania Avenue and Rose Street.
2. Consider limiting parking on Linden Walk and the two-lane section of Clifton Avenue.
3. Provide a 100-foot no-parking zone on both sides of the street in advance of the midblock pedestrian signal on Upper Street at the Taylor Education Building.
4. Provide a 20-foot no-parking zone beyond the midblock pedestrian signal on South Limestone Street at the Service Building.
5. Provide a 20-foot no-parking zone on either side of the crosswalk on Administration Drive at the Administration Building.
6. Provide a 20-foot no-parking zone on either side of the crosswalk on Patterson Drive at the Patterson Office Tower.

SPEED LIMITS

Reduce the speed limit on Rose Street between Euclid Avenue and South Limestone Street from 35 mph to 30 mph.

UNIVERSITY TRAFFIC ZONE

While the establishment of a special "university traffic control zone" does not appear justified, placement of information signs on the major routes approaching the UK area may be warranted. Those signs should conform to general standards for guide signs with a white message on a green background (4). A possible message could be the words "UNIVERSITY OF KENTUCKY" along with symbols warning of the presence of pedestrians and bicyclists.

FIXED OBJECT ACCIDENTS

The location of utility poles on the east side of Rose Street was a major factor in several collisions. Those poles are placed less than one foot from the edge of pavement, but moving the poles would be too expensive. Of 12 fixed-object accidents, eight occurred during darkness and one at dawn. Therefore, the problem is primarily related to darkness. Existing street lighting on Rose Street should be increased to higher arterial levels. This should allow both the motorist and pedestrian better visibility of all objects in the right-of-way. If this type of accident continues after this improvement, Type 2 or 3 object markers (4) should be placed on the poles.

WET-SURFACE ACCIDENTS

Based on number and percentage of wet-surface accidents, the section of South Limestone Street north of Rose Street is in need of resurfacing.

EUCLID AVENUE IMPROVEMENTS

Restripe Euclid Avenue to provide five lanes between Rose Street and High Street and three lanes between Rose Street and Harrison Street. The center lane east of Rose Street would be marked as a two-way left-turn lane. This would require removing a raised median between Rose Street and High Street and removal of 16 parking spaces between Rose Street and Lexington Avenue.

Consideration should also be given to providing two lanes eastbound on Euclid Avenue between South Limestone Street and Harrison Avenue. This would require removing some on-street, unmetered parking on the south side of Euclid Avenue.

ROSE STREET IMPROVEMENTS

Various alternatives were studied in an attempt to improve pedestrian and bicycle safety while recognizing that Rose Street is an arterial street carrying over 15,000 vehicles per day. The following is a combination of improvements recommended for implementation on Rose Street.

1. Install a raised, mountable median from Washington Avenue to Columbia Avenue and prohibit left turns from Rose Street into and out of both Clifton Avenue and Funkhouser Drive. (A reduction of pedestrian-vehicular conflicts would result by prohibiting left turns. However, emergency vehicles would still be able to make left turns across the median.) Also upgrade the raised, mountable median between Rose Lane and Columbia Avenue.
2. Provide a permissive left-turn signal phase from Rose Street onto Washington Avenue and from Rose Street onto Columbia Avenue.
3. Coordinate signals at Columbia Avenue and Washington Avenue to provide vehicle platooning, thus allowing additional gaps for pedestrians.
4. Provide a time lag between the start of the green interval on Rose Street and the start of the left-turn movements onto Washington Avenue and onto Columbia Avenue. In effect, a long all-red interval will be created on Rose Street which would provide a protected phase to aid pedestrians in crossing Rose Street. This signal phasing should operate from 9:00 am to 3:00 pm on weekdays.
5. The campus shuttle bus service, with six to eight minute headways, creates heavy traffic congestion. Many motorists drive around the bus, into on-coming traffic. With the designation of the bicycle lanes on Rose Street, buses will routinely block the bicycle lanes while loading and unloading. To improve the safety of the pedestrians in the median area, eliminate the blocking of the bicycle lane by the buses, and reduce traffic delays during times of heavy traffic flow, it is recommended that a bus pull-in bay be constructed on Rose Street, just north of Funkhouser Drive on the southbound side of the street.

Additional items that were considered as a means of improving pedestrian safety on Rose Street are listed below:

1. A clearance interval could be provided for pedestrians between Washington Avenue and Funkhouser Drive by installing a traffic signal at Funkhouser. Extended red time could provide a clear zone for pedestrians during each signal cycle. The pedestrian clearance interval between Funkhouser and Washington would operate from 9:00 am to 3:00 pm weekdays.
2. Rose Street could be made one-way southbound between Euclid Avenue and South Limestone Street. Consideration could be given to extending the one-way section to Main Street. Overall volume and turning movements on Rose Street would be significantly reduced, resulting in improved pedestrian safety. It is obvious that the feasibility of this action would require additional study.

OTHER INTERSECTION IMPROVEMENTS

1. Euclid Avenue and Woodland Avenue -- Add separate left-turn lane and permissive left-turn phasing on Euclid Avenue. Extend clearance interval on both streets.
2. Rose Street and Euclid Avenue -- Add permissive left-turn phasing on Euclid Avenue and provide a separate left-turn lane from Euclid Avenue onto northbound Rose Street. Some curb relocation west of Rose Street would be necessary. The addition of a two-way left-turning lane on Euclid Avenue would allow the elimination of the offset left-turn lanes and should lessen the left-turning accident problem.
3. Rose Street and Maxwell Street -- Add lane designation signing and marking on Maxwell Street. Extend clearance interval on Rose Street.
4. South Limestone Street and Euclid Avenue -- Provide all-red clearance interval.
5. Maxwell Street and Harrison Avenue -- Add lane designation signing and marking on Maxwell Street.
6. Maxwell Street and South Limestone Street -- Add lane designation signing and marking on Maxwell Street.
7. Nicholasville Road and Farm Road -- Prohibit left turns from Farm Road. Consideration should be given to closing Farm Road when Road B is opened to Nicholasville Road.
8. Rose Street and Columbia Avenue -- Install directional arrow sign on wall opposite Columbia Avenue.
9. Cooper Drive and Sports Center Road -- Install hazard identification beacon.
10. University Drive and Complex Drive -- Install hazard identification beacon.
11. Woodland Avenue and Columbia Avenue -- Provide all-red clearance interval. Phasing should be checked to determine if Woodland Avenue is receiving a sufficient portion of the green time.
12. Maxwell Street and Woodland Avenue -- Extend clearance interval on both streets.

REFERENCES

1. Agent, K. R.; Crabtree, J. D.; and Pigman, J. G.; "Problem Identification for Highway Safety Plan (FY 1983)," Kentucky Transportation Research Program, Report UKTRP-82-5, May 1982.
2. Agent, K. R.; and Zegeer, C. V.; "An Analysis of Bicycle-Related, Motor-Vehicle Accidents in Lexington, Kentucky," Kentucky Department of Transportation, Division of Research, Report 541, March 1980.
3. Guide for Bicycle Routes, American Association of State Highway and Transportation Officials, 1974.
4. Manual on Uniform Traffic Control Devices for Streets and Highways, Federal Highway Administration, U. S. Department of Transportation, 1978.
5. Urban Transportation Operations Training -- Design of Urban Streets, U. S. Department of Transportation, Federal Highway Administration.

Figure 1. University of Kentucky
TSM Project Study Area.

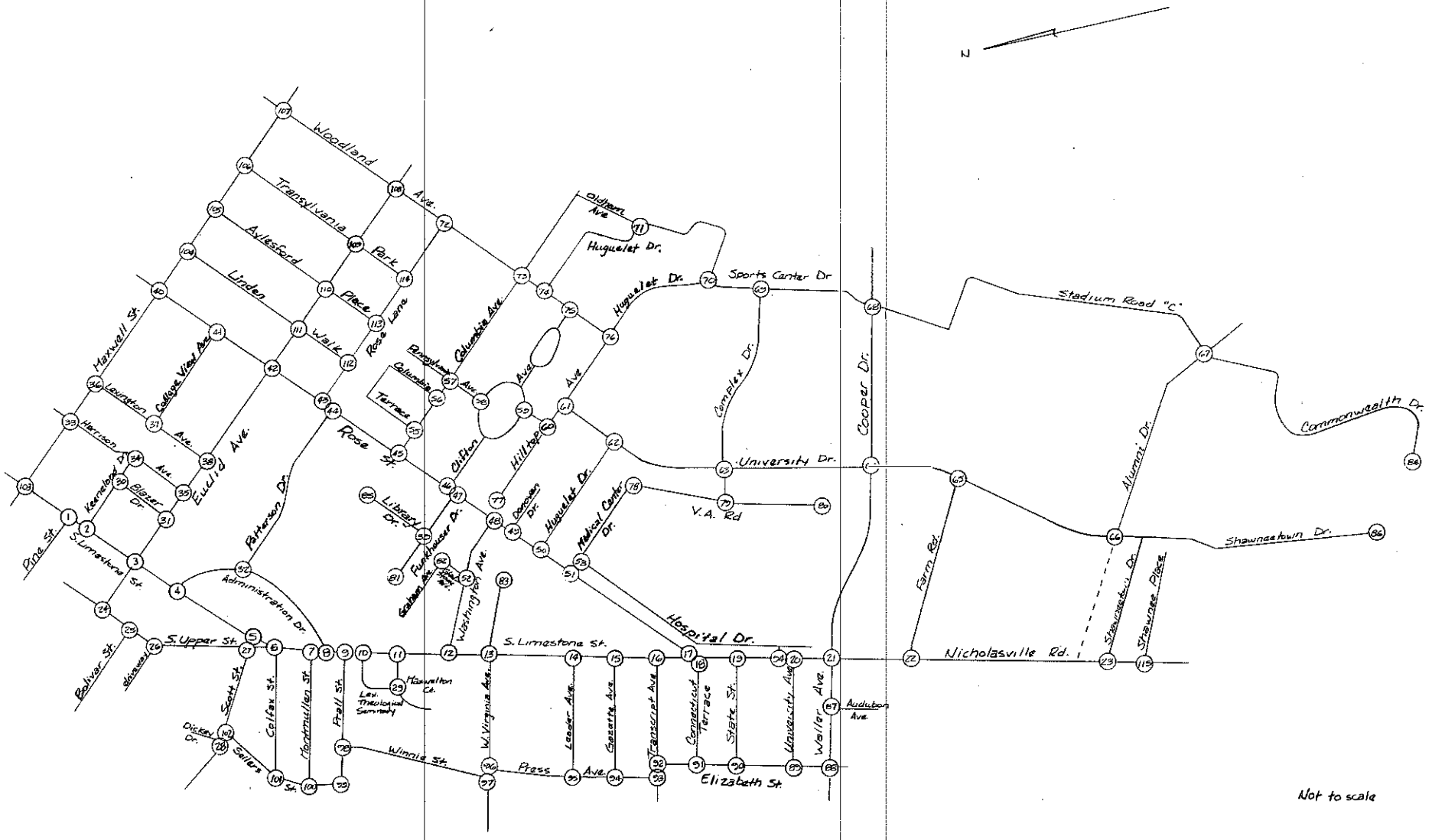

TABLE 1. ACCIDENT SUMMARY BY MONTH

MONTH	NUMBER OF ACCIDENTS*	PERCENT	
		UK AREA	STATEWIDE (1980)
January	177	9.4	8.2
February	179	9.5	8.6
March	125	6.7	8.1
April	148	7.9	7.8
May	110	5.9	8.7
June	80	4.3	8.0
July	129	6.9	8.3
August	158	8.4	8.6
September	215	11.5	7.9
October	222	11.8	8.9
November	196	10.4	8.4
December	137	7.3	8.5

*Does not include three for which data was not known.

TABLE 2. ACCIDENT SUMMARY BY DAY OF WEEK

DAY	NUMBER OF ACCIDENTS*	PERCENT	
		UK AREA	STATEWIDE (1980)
Sunday	134	7.2	10.3
Monday	278	14.8	13.9
Tuesday	310	16.6	13.4
Wednesday	282	15.1	13.9
Thursday	286	15.3	13.5
Friday	342	18.3	18.4
Saturday	238	12.7	16.6

* Does not include nine for which day of week was not known.

TABLE 3. ACCIDENT SUMMARY BY TIME OF DAY

TIME OF DAY	NUMBER OF ACCIDENTS*	PERCENT	
		UK AREA	STATEWIDE (1980)
Midnight - 2:59 AM	113	6.3	6.8
3:00 AM - 5:59 AM	21	1.2	3.1
6:00 AM - 8:59 AM	239	13.3	9.5
9:00 AM - 11:59 AM	314	17.4	14.4
Noon - 2:59 PM	405	22.5	19.2
3:00 PM - 5:59 PM	341	19.0	23.0
6:00 PM - 8:59 PM	188	10.5	13.7
9:00 PM - 11:59 PM	177	9.8	10.3

* Does not include 81 accidents in which time of day was unknown.

TABLE 4. SUMMARY OF ACCIDENT SEVERITIES BY TYPE OF OPERATOR

TYPE OF OPERATOR	NUMBER OF FATALITIES	NUMBER OF INCAPICI-TATING INJURIES	NUMBER OF NON-INCAPACI-TATING INJURIES	NUMBER OF POSSIBLE INJURIES	TOTAL INJURIES
Driver	1	52	179	132	363
Motorcyclist	0	6	3	4	13
Bicyclist	0	4	19	5	28
Pedestrian	0	16	17	4	37
TOTALS	1	78	218	145	441

TABLE 5. COMPARISON OF OVERALL SEVERITIES

	UK Area	Statewide (1980)
Severity Index*	1.56	1.88
Percentage Fatal Accidents	0.05	0.60
Percentage Non-Fatal Injury Accidents	15.6	21.1

*Severity Index = EPDO/Nt

where Nt = total number of accidents
EPDO = 9.5(K+A) + 3.5(B+C) + PDO
K = number of fatal accidents
A = number of incapacitating injury accidents
B = number of non-incapacitating injury accidents
C = number of accidents with possible injury
PDO = number of property-damage-only accidents

TABLE 6. ACCIDENT SUMMARY BY ACCIDENT DESCRIPTION CODE

DIRECTIONAL ANALYSIS	DESCRIPTION	NUMBER OF ACCIDENTS	PERCENT
Intersection Accidents			
1	Angle accident-both vehicles going straight	138	7.3
2	Angle accident-one vehicle turning left	133	7.1
3	Angle accident-one vehicle turning right	43	2.3
4	Angle accident-other	15	0.8
5	Rear end-one vehicle stopped	133	7.1
6	Rear end-both vehicles going straight	31	1.7
7	Rear end-one vehicle turning left	12	0.6
8	Rear end-one vehicle turning right	6	0.3
9	Rear end-other	2	0.1
10	Opposite directions-one vehicle turning left, one going straight	122	6.5
11	Opposite directions-both vehicles going straight	4	0.2
12	Opposite directions-other	13	0.7
13	Single vehicle collision (fixed object)	38	2.0
14	Single vehicle non-collision	1	0.1
15	Collision with pedestrian	18	1.0
16	Collision with bicycle	21	1.1
17	Vehicle backing	29	1.5
18	Collision with non-fixed object	4	0.2
19	Same direction-sideswipe	56	3.0
20	Other intersection accident	17	0.9
21	Same direction-turning from wrong lane	63	3.3
22	Collision with parked car (not in parking lot)	19	1.0
Mid-Block Accidents			
24	Rear end in traffic lane-one vehicle stopped	121	6.4
25	Rear end in traffic lane-both vehicles moving	33	1.8
27	Other accidents on shoulder	1	0.1
28	Head-on collision	5	0.3
29	Sideswipe-same direction	59	3.1
30	Sideswipe-opposite directions	27	1.4
31	One vehicle entering or leaving a private driveway	30	1.6
32	One vehicle entering or leaving alley or public entrance	44	2.3
33	One vehicle entering parked position (not in parking lot)	10	0.5
34	One vehicle leaving parked position (not in parking lot)	55	2.9
35	One vehicle in parked position (not in parking lot)	224	11.9
37	Vehicle going in wrong direction	2	0.1
38	Collision with a pedestrian	18	1.9
39	Collision with a bicycle	12	1.0
40	Collision with a fixed object (single vehicle)	55	2.9
41	Collision with non-fixed object (single vehicle)	1	0.1
43	Ran off roadway (single vehicle)	3	0.2
44	Overturned in roadway (single veh.)	1	0.1
46	Other mid-block accident	11	0.6
47	Same direction-changing lanes	14	0.7
48	Vehicle backing	11	0.6
49	Same direction-turning from wrong lane	13	0.7
Other Accidents			
90	Parking lot accident	211	11.3

TABLE 7. ACCIDENT SUMMARY BY TYPE OF LOCATION

TYPE OF LOCATION	NUMBER OF ACCIDENTS	PERCENT
Intersection	918	49
Mid-Block	750	40
Parking Lot	211	11

TABLE 8. ACCIDENT SUMMARY BY CONTRIBUTING FACTORS

		PERCENT	
HUMAN FACTORS	NUMBER OF ACCIDENTS	UK AREA	STATEWIDE (1980)
Unsafe Speed	33	1.8	8.8
Failed to Yield Right of Way	284	15.1	16.4
Following Too Close	72	3.8	4.5
Improper Passing	20	1.1	1.5
Disregard Traffic Controls	75	4.0	2.6
Turning Improperly	119	6.3	2.9
Alcohol Involvement	105	5.6	8.6
Drug Involvement	3	0.2	0.5
Sick	4	0.2	0.1
Fell Asleep	4	0.2	1.2
Lost Consciousness	3	0.2	0.3
Driver Inattention	654	34.8	25.0
Distraction	31	1.6	1.9
Physical Disability	6	0.3	0.3
Other	123	6.5	12.1
VEHICULAR			
Brakes Defective	30	1.6	2.1
Headlights Defective	1	0.1	0.1
Other Lighting Defects	1	0.1	0.3
Steering Failure	6	0.3	0.5
Tire Failure/Inadequate	4	0.2	1.0
Tow Hitch Defective	2	0.1	0.1
Over or Improper Load	1	0.1	0.1
Oversized Load on Vehicle	1	0.1	0.1
Other	30	1.6	3.0
ENVIRONMENTAL FACTORS			
Animal's Action	3	0.2	1.2
Glare	9	0.5	0.8
View Obstructed/Limited	84	4.5	3.4
Debris in Roadway	3	0.2	0.4
Improper/Non-Working Traffic Controls	5	0.3	0.2
Shoulders Defective	0	0.0	0.5
Holes/Deep Ruts/Bumps	2	0.2	0.3
Road under Construction/Maintenance	2	0.2	0.4
Improperly Parked Vehicles	22	1.2	0.5
Fixed Object(s)	5	0.3	0.3
Slippery Surface	156	8.3	8.9
Waterpooling	7	0.4	0.4
Other	18	1.0	2.3

TABLE 9. INTERSECTIONS WITH TEN OR MORE ACCIDENTS

NODE NUMBER	INTERSECTION	TOTAL NUMBER OF ACCIDENTS	NUMBER OF INJURY ACCIDENTS
108	Euclid Avenue and Woodland Avenue	97	27
21	Nicholasville Road-Waller Avenue-Cooper Drive	62	9
42	Rose Street and Euclid Avenue	57	11
40	Rose Street and Ma well Street	51	14
03	S. Limestone Street and Euclid Avenue	45	15
13	S. Limestone Street and Virginia Ave.	24	3
33	Ma well Street and Harrison Avenue	24	2
103	S. Limestone Street and Ma well Street	23	4
64	University Drive and Cooper Drive	22	8
22	Nicholasville Road and Farm Road	21	4
45	Rose Street and Columbia Avenue	19	5
17	S. Limestone Street and Rose Street	18	3
68	Cooper Drive and Sports Center Drive	18	5
35	Euclid Avenue and Harrison Avenue	16	5
63	University Drive and Complex Drive	16	3
07	S. Limestone Street and Montmullen St.	15	1
73	Woodland Avenue and Columbia Avenue	15	2
50	Rose Street and Huguelet Drive	14	4
66	University Drive-Alumni Drive-Shawneetown Drive	13	4
23	Nicholasville Road and Shawneetown Dr.	12	3
51	Rose Street and Medical Center Drive	12	3
67	Alumni Drive-Commonwealth Drive-Stadium Road "C"	12	2
107	Ma well Street and Woodland Avenue	12	0
01	S. Limestone Street and Pine Street	11	2
09	S. Limestone Street and Prall Street	11	5
11	S. Limestone Street and Ma welton Ct.	11	2
12	S. Limestone Street and Washington Ave.	11	4
20	S. Limestone Street and University Ave.	11	1
27	S. Upper Street and Scott Street	11	1
110	Euclid Avenue and Aylesford Place	11	1
88	Waller Avenue and Elizabeth Street	10	4
48	Rose Street and Washington Avenue	10	1

TABLE 10. LISTING OF STREETS WITH TEN OR MORE MID-BLOCK ACCIDENTS

STREET	NUMBER OF ACCIDENTS	NUMBER OF INJURY ACCIDENTS	LENGTH (MILES)	NUMBER OF MID-BLOCK ACCIDENTS PER MILE PER YEAR
South Limestone Street	146	34	1.68	29.0
Rose Street	77	25	0.94	27.3
Maxwell Street	49	3	0.65	25.1
Euclid Avenue	46	5	0.74	20.7
Commonwealth Drive	39	1	0.48	27.1
Huguelet Drive	38	3	0.80	13.8
Clifton Avenue	26	3	0.30	28.9
Woodland Avenue	24	4	0.57	14.0
Complex Drive	23	1	0.27	28.4
Columbia Avenue	19	1	0.30	21.1
Linden Walk	16	1	0.28	19.0
Funkhouser Drive	15	1	0.15	33.3
Cooper Drive-Waller Avenue	14	2	0.58	8.0
Medical Center Drive	14	1	0.15	31.1
Hilltop Avenue	13	0	0.30	14.4
University Drive	12	2	0.83	4.8
Administration Drive	11	1	0.25	14.7
Hospital Drive	11	2	0.35	10.5
Virginia Avenue	11	1	0.30	12.2
Rose Lane	10	2	0.31	10.8
South Upper Street	10	3	0.25	13.3

TABLE 11. ACCIDENT RATES FOR MAJOR ARTERIAL AND COLLECTOR STREETS

STREET	DAILY VOLUME (AADT)	LENGTH (MILES)	ACCIDENTS PER YEAR	ACCIDENT RATE (ACC/100 MVM)
Columbia Avenue	3,700	0.30	10.3	2,542
Maxwell Street	11,210	0.65	42.0	1,579
Euclid Avenue	20,120	0.74	70.3	1,294
Rose Street	15,500	0.94	67.0	1,260
Woodland Avenue	8,630	0.57	22.3	1,242
South Limestone Street	19,000*	1.68	138.0	1,184
Cooper Drive-Waller Avenue	13,360	0.58	22.3	788
University Drive	12,270	0.83	17.0	457

* Weighted average considering volumes for various sections of the total length.

TABLE 12. LOCATION OF PARKING LOT ACCIDENTS

LOT	NUMBER OF ACCIDENTS
Commonwealth Stadium	39
Medical Center (North)	13
Medical Center (Other)	13
Boone Lane	13
Seaton Center	12
Shively Sports Center	12
College View	11
Medical Center (South)	10
Memorial Coliseum (Rear)	6
Lexington Avenue-Harrison Avenue	6
Rose Street Parking Structure	5
Complex East	5
Scott Street	5
Miscellaneous	61
TOTAL	211

TABLE 13. PERCENT WET-SURFACE ACCIDENTS ON MAJOR STREETS

STREET	TOTAL ACCIDENTS	WET-SURFACE ACCIDENTS	PERCENT WET SURFACE
Cooper Drive-Waller Avenue	67	19	28
University Avenue	51	12	24
South Limestone Street*	252	57	23
Ma well Street	126	26	21
Woodland Avenue	67	14	21
Rose Street	201	39	19
Euclid Avenue	211	36	17
Columbia Avenue	31	5	16
South Limestone Street**	162	17	10

*From Rose Street to Ma well Street
**From Shawnee Place to Rose Street

APPENDIX A

DESCRIPTION OF ACCIDENTS AT INTERSECTIONS HAVING TEN OR MORE ACCIDENTS

INTERSECTION: Euclid Avenue and Woodland Avenue
NODE NUMBER: 108

Number of Accidents -- 97
Number of Injury Accidents -- 27
Number of Injuries -- 37

Summary by Type of Accident

Type*	Number	Type	Number	Type	Number
10	52	06	3	07	1
01	14	08	2	11	1
05	6	13	2	18	1
02	5	15	2	19	1
03	4	17	2	22	1

COMMENTS:
The primary problem relates to left-turning accidents on Euclid Avenue in which a vehicle turns left into the path of an oncoming vehicle (type 10 accident). A separate left-turn lane or phasing does not currently exist on Euclid Avenue. There were several angle accidents (type 1) resulting from vehicles running the red light. There were also two pedestrian accidents at this intersection. Eleven accidents involved a view obstruction caused by left-turning vehicles on Euclid Avenue.

*Note: Refer to Table 6 for explanation of accident description codes.

INTERSECTION: Nicholasville Road - (Waller Avenue - Cooper Drive)
NODE NUMBER: 21

Number of Accidents -- 62
Number of Injury Accidents -- 9
Number of Injuries -- 11

Summary by Type of Accident

Type	Number	Type	Number	Type	Number	Type	Number
19	16	06	4	01	2	17	1
05	15	10	4	07	1	21	1
04	7	12	3	16	1	22	1
03	6						

COMMENTS:
The accidents were primarily "same direction sideswipe" and rear end accidents caused by the congestion at this intersection.

INTERSECTION: Rose Street and Euclid Avenue
NODE NUMBER: 42

Number of Accidents -- 57
Number of Injury Accidents -- 11
Number of Injuries -- 14

Summary by Type of Accident

Type	Number	Type	Number	Type	Number
10	20	13	3	11	1
05	16	17	3	15	1
01	7	03	1	16	1
02	3	07	1		

COMMENTS:
There were a large number of "opposed left-turn" accidents involving vehicles on Euclid Avenue. Also, there were several rear-end accidents caused by traffic congestion.

INTERSECTION: Rose Street and Maxwell Street
NODE NUMBER: 40

Number of Accidents -- 51
Number of Injury Accidents -- 14
Number of Injuries -- 21

Summary by Type of Accident

Type	Number	Type	Number
21	20	10	1
01	18	12	1
05	3	13	1
02	2	15	1
19	2	18	1
08	1		

COMMENT:
There were two problems identified at this intersection. First was vehicles on Maxwell Street turning left onto Rose Street from the wrong (righthand) lane. Second was vehicles on Rose Street disregarding the red light causing angle accidents.

INTERSECTION: South Limestone Street and Euclid Avenue
NODE NUMBER: 03

Number of Accidents -- 45
Number of Injury Accidents -- 15
Number of Injuries -- 26

Summary by Type of Accident

Type	Number	Type	Number
01	15	13	3
19	7	03	1
21	5	06	1
05	4	07	1
15	4	17	1
02	3		

COMMENTS:

The major problem found was vehicles disregarding the red light (primarily on Euclid Avenue).

INTERSECTION: South Limestone Street and Virginia Avenue
NODE NUMBER: 13

Number of Accidents -- 24
Number of Injury Accidents -- 3
Number of Injuries -- 4

Summary by Type of Accident

Type	Number	Type	Number
10	7	01	1
02	6	03	1
05	5	06	1
19	2	13	1

COMMENTS:

There were several opposed left-turn accidents on South Limestone Street which should be alleviated by the recent addition of a left-turn lane at this intersection.

INTERSECTION: Maxwell Street and Harrison Avenue
NODE NUMBER: 33

Number of Accidents -- 24
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
21	11	02	1
19	4	05	1
13	2	09	1
20	2	15	1
01	1		

COMMENTS:
The accident problem at this location was associated with vehicles attempting to turn left from Maxwell Street onto Harrison Street from the wrong (righthand) lane.

INTERSECTION: South Limestone Street and Maxwell Street
NODE NUMBER: 103

Number of Accidents -- 23
Number of Injury Accidents -- 4
Number of Injuries -- 6

Summary by Type of Accident

Type	Number	Type	Number
21	8	06	1
19	6	07	1
05	4	20	1
01	2		

COMMENTS:
The major problem found involved vehicles turning left from Maxwell Street onto South Limestone Street from the wrong (righthand) lane.

INTERSECTION: University Drive and Cooper Drive
NODE NUMBER: 64

Number of Accidents -- 22
Number of Injury Accidents -- 8
Number of Injuries -- 9

Summary by Type of Accident

Type	Number	Type	Number	Type	Number
05	5	15	2	13	1
01	4	03	1	17	1
02	2	04	1	19	1
10	2	12	1	21	1

COMMENTS:
No specific accident pattern found.

INTERSECTION: Nicholasville Road and Farm Road
NODE NUMBER: 22

Number of Accidents -- 21
Number of Injury Accidents -- 4
Number of Injuries -- 4

Summary by Type of Accident

Type	Number	Type	Number
10	9	05	1
02	7	19	1
03	2	20	1

COMMENTS:
Accidents were primarily caused by vehicles either turning left into or out of Farm Road.

INTERSECTION: Rose Street and Columbia Avenue
NODE NUMBER: 45

Number of Accidents -- 19
Number of Injury Accidents -- 5
Number of Injuries -- 5

Summary by Type of Accident

Type	Number	Type	Number	Type	Number
13	4	02	1	15	1
05	3	06	1	16	1
03	2	08	1	17	1
10	2	11	1	19	1

COMMENTS:
Several "fixed object" accidents occurred at this intersection.

INTERSECTION: South Limestone Street and Rose Street
NODE NUMBER: 17

Number of Accidents -- 18
Number of Injury Accidents -- 3
Number of Injuries -- 3

Summary by Type of Accident

Type	Number	Type	Number	Type	Number
05	7	06	1	17	1
19	4	08	1	20	1
03	1	16	1	22	1

COMMENTS:
Accidents were primarily rear end types.

INTERSECTION: Cooper Drive and Sports Center Drive
NODE NUMBER: 68

Number of Accidents -- 18
Number of Injury Accidents -- 5
Number of Injuries -- 6

Summary by Type of Accident

Type	Number	Type	Number
01	14	13	1
02	1	20	1
03	1		

COMMENTS:
The accident problem at this location was caused by vehicles on Sports Center Drive attempting to cross Cooper Drive.

INTERSECTION: Euclid Avenue and Harrison Avenue
NODE NUMBER: 35

Number of Accidents -- 16
Number of Injury Accidents -- 5
Number of Injuries -- 6

Summary by Type of Accident

Type	Number	Type	Number	Type	Number
02	5	01	1	10	1
17	3	03	1	15	1
05	2	06	1	16	1

COMMENTS:
Several angle accidents resulted from a vehicle turning left from Harrison Avenue onto Euclid Avenue into the path of a cross-street vehicle.

INTERSECTION: University Drive and Complex Drive
NODE NUMBER: 63

Number of Accidents -- 16
Number of Injury Accidents -- 3
Number of Injuries -- 5

Summary by Type of Accident

Type	Number
01	9
02	5
10	2

COMMENTS:
The major cause of accidents at this location was vehicles on Complex Drive attempting to either cross or turn left onto University Drive.

INTERSECTION: South Limestone Street and Montmullen Street
NODE NUMBER: 07

Number of Accidents -- 15
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
02	4	05	1
10	2	06	1
17	2	08	1
01	1	13	1
03	1	19	1

COMMENTS:
The major accident types involved angle accidents in which vehicles attempted to turn left into or out of Montmullen Street.

INTERSECTION: Woodland Avenue and Columbia Avenue
NODE NUMBER: 73

Number of Accidents -- 15
Number of Injury Accidents -- 2
Number of Injuries -- 3

Summary by Type of Accident

Type	Number	Type	Number
01	6	12	1
05	3	13	1
16	2	20	1
02	1		

COMMENTS:

There were several angle accidents resulting from a vehicle disregarding the red signal.

INTERSECTION: Rose Street and Huguelet Drive
NODE NUMBER: 50

Number of Accidents -- 14
Number of Injury Accidents -- 4
Number of Injuries -- 5

Summary by Type of Accident

Type	Number	Type	Number
02	5	05	1
10	2	07	1
20	2	15	1
04	1	16	1

COMMENTS:

The major problem was angle accidents caused by vehicles turning left out of Huguelet Drive onto Rose Street.

INTERSECTION: University Drive-Alumni Drive-Shawneetown Drive
NODE NUMBER: 66

Number of Accidents -- 13
Number of Injury Accidents -- 4
Number of Injuries -- 5

Summary by Type of Accident

Type	Number	Type	Number
02	3	05	2
12	3	01	1
13	3	20	1

COMMENTS:
No accident pattern found.

INTERSECTION: Nicholasville Road and Shawneetown Drive
NODE NUMBER: 23

Number of Accidents -- 12
Number of Injury Accidents -- 3
Number of Injuries -- 3

Summary by Type of Accident

Type	Number	Type	Number
02	3	04	1
03	2	19	1
05	2	21	1
16	2		

COMMENTS:
No accident pattern found.

INTERSECTION: Rose Street and Medical Center Drive
NODE NUMBER: 51

Number of Accidents -- 12
Number of Injury Accidents -- 3
Number of Injuries -- 3

Summary by Type of Accident

Type	Number	Type	Number
02	4	10	1
13	2	16	1
05	1	17	1
06	1	20	1

COMMENTS:
Leading accident cause was vehicles turning left from Medical Center Drive onto Rose Street.

INTERSECTION: Alumni Drive-Commonwealth Drive-Stadium Road "C"
NODE NUMBER: 67

Number of Accidents -- 12
Number of Injury Accidents -- 2
Number of Injuries -- 5

Summary by Type of Accident

Type	Number	Type	Number
01	4	13	1
22	3	17	1
02	1	20	1
03	1		

COMMENTS:
Leading accident cause was vehicles attempting to cross Alumni Drive.

INTERSECTION: Maxwell Street and Woodland Avenue
NODE NUMBER: 107

Number of Accidents -- 12
Number of Injury Accidents -- 0
Number of Injuries -- 0

Summary by Type of Accident

Type	Number	Type	Number
01	8	03	1
05	2	21	1

COMMENTS:
Most accidents caused by vehicles disregarding the red signal.

INTERSECTION: South Limestone Street and Pine Street
NODE NUMBER: 01

Number of Accidents -- 11
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
21	4	04	1
02	3	16	1
19	2		

COMMENTS:
Leading accident cause was vehicles turning left from South Limestone Street onto Pine Street from the wrong (center) lane.

INTERSECTION: South Limestone Street and Washington Avenue
NODE NUMBER: 12

Number of Accidents -- 11
Number of Injury Accidents -- 4
Number of Injuries -- 5

Summary by Type of Accident

Type	Number	Type	Number
05	3	19	2
03	2	07	1
15	2	16	1

COMMENTS:
There were two pedestrian accidents at this location.

INTERSECTION: South Limestone Street and University Avenue
NODE NUMBER: 20

Number of Accidents -- 11
Number of Injury Accidents -- 1
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
02	5	10	1
01	1	19	1
04	1	21	1
05	1		

COMMENTS:
Primary cause of accidents was vehicles attempting to turn left from University Avenue onto South Limestone Street.

INTERSECTION: South Limestone Street and Prall Street
NODE NU BER: 09

Number of Accidents -- 11
Number of Injury Accidents -- 5
Number of Injuries -- 8

Summary by Type of Accident

Type	Number	Type	Number
02	4	03	1
05	3	20	1
06	2		

CO MENTS:
Three of the four type 2 accidents involved a view obstruction.

INTERSECTION: South Limestone Street and Maxwelton Court
NODE NU BER: 11

Number of Accidents -- 11
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
02	3	15	1
05	3	16	1
03	1	17	1
06	1		

COMMENTS:
No accident pattern found.

INTERSECTION: South Upper Street
NODE NUMBER: 27

Number of Accidents -- 11
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
21	4	01	1
02	3	06	1
05	2		

COMMENTS:
Leading accident cause was vehicles turning left from South Upper Street onto Scott Street from the wrong (righthand) lane.

INTERSECTION: Euclid Avenue and Aylesford Place
NODE NUMBER: 110

Number of Accidents -- 11
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
01	4	05	2
02	4	06	1

COMMENTS:
Most accidents caused by vehicles on Aylesford Place attempting to cross or turn left onto Euclid Avenue.

INTERSECTION: Waller Avenue and Elizabeth Street
NODE NUMBER: 88

Number of Accidents -- 10
Number of Injury Accidents -- 4
Number of Injuries -- 6

Summary by Type of Accident

Type	Number	Type	Number
05	4	10	1
01	2	19	1
13	2		

COMMENTS:
Rear end accidents were the primary type.

INTERSECTION: Rose Street and Washington Avenue
NODE NUMBER: 48

Number of Accidents -- 10
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
05	4	10	1
02	2	15	1
07	1	19	1

COMMENTS:
Major accident type was rear end (one vehicle stopped).

APPENDIX B

DESCRIPTION OF ACCIDENTS ON STREETS HAVING TEN OR MORE MID-BLOCK ACCIDENTS

STREET: South Limestone Street
FROM NODE NUMBER 103 TO NODE NUMBER 06

Number of Accidents -- 64
Number of Injury Accidents -- 8
Number of Injuries -- 9

Summary by Type of Accident

Type*	Number	Type	Number	Type	Number
24	15	25	3	31	1
35	12	37	2	32	1
49	11	38	2	33	1
34	7	47	2	40	1
29	5	30	1		

COMMENTS:

Most of the "turn from wrong lane" (Code 49) accidents occurred as vehicles were turning into McDonald's Restaurant from the center, rather than left, lane.

For parking related accidents, 12 of 19 occurred between Upper Street and Euclid Avenue. Two pedestrian accidents occurred between Upper Street and Euclid Avenue.

* Note: Refer to Table 6 for explanation of accident codes.

STREET: South Limestone Street
FROM NODE NUMBER 06 TO NODE NUMBER 17

Number of Accidents -- 36
Number of Injury Accidents -- 12
Number of Injuries -- 14

Summary by Type of Accident

Type	Number	Type	Number	Type	Number
24	9	38	3	32	1
25	4	34	2	39	1
29	4	47	2	40	1
31	3	28	1	49	1
35	3	30	1		

COMMENTS:

Three pedestrian accidents occurred between Upper Street and Maxwelton Court. The recent addition of pedestrian refuge zones and the traffic signal at Prall Street should provide additional safety for pedestrians in this area.

Most of "rear-end in traffic lanes - one vehicle stopped" (Code 24) accidents were related to vehicles turning left which should also be reduced by the turning lane.

STREET: South Limestone Street
FROM NODE NUMBER 17 TO NODE NUMBER 115

Number of Accidents -- 46
Number of Injury Accidents -- 14
Number of Injuries -- 20

Summary by Type of Accident

Type	Number	Type	Number
24	20	31	1
29	7	32	1
25	4	35	1
47	4	38	1
40	2	39	1
28	1	48	1
30	1	49	1

COMMENTS:
Most of these accidents are rear-end (Code 24) or sideswipe (Code 29) accidents related to congestion at South Limestone Street and Cooper Drive.

STREET: Rose Street
FROM NODE NUMBER 40 TO NODE NUMBER 42

Number of Accidents -- 9
Number of Injury Accidents -- 5
Number of Injuries -- 5

Summary by Type of Accident

Type	Number
24	4
35	2
25	1
32	1
40	1

COMMENTS:
No accident pattern was found.

STREET: Rose Street
FROM NODE NUMBER 42 TO NODE NUMBER 45

Number of Accidents -- 25
Number of Injury Accidents -- 9
Number of Injuries -- 10

Summary by Type of Accident

Type	Number	Type	Number
24	14	25	1
40	3	31	1
29	2	39	1
38	2	48	1

COMMENTS:
Most of fixed-object accidents (Code 40) throughout Rose Street involve collisions with utility poles mounted less than one foot from edge of roadway.
Rear-end accidents (Code 24) are related to congestion. Two pedestrian accidents occurred on this section.

STREET: Rose Street
FROM NODE NUMBER 45 TO NODE NUMBER 48

Number of Accidents -- 21
Number of Injury Accidents -- 7
Number of Injuries -- 9

Summary by Type of Accident

Type	Number	Type	Number
24	11	32	1
40	4	38	1
25	2	39	1
29	1		

COMMENTS:
The fixed object accidents involve collisions with utility poles located less than one foot from the edge of the roadway. Rear-end (one vehicle stopped) accidents are related to congestion.

STREET: Rose Street
FROM NODE NUMBER 48 TO NODE NUMBER 17

Number of Accidents -- 22
Number of Injury Accidents -- 4
Number of Injuries -- 4

Summary by Type of Accident

Type	Number	Type	Number
24	7	35	2
32	4	25	1
40	4	39	1
9	2	47	1

COMMENTS:

Fixed object accidents generally involve collision with utility poles located next to roadway. Rear end (one vehicle stopped) accidents are related to congestion. Code 32 accidents involved exiting parking lots.

STREET: Maxwell Street
FROM NODE NUMBER 103 TO NODE NUMBER 107

Number of Accidents -- 49
Number of Injury Accidents -- 3
Number of Injuries -- 4

Summary by Type of Accident

Type	Number	Type	Number
35	19	40	2
29	12	49	2
24	7	31	1
32	2	34	1
38	2	47	1

COMMENTS:

Accidents involving "turning from wrong lane" and "sideswipe" primarily occur between South Limestone Street and Harrison Avenue. Signing recommended for intersections on Maxwell should reduce those types of accidents.

Accidents involving "one vehicle in parked position" occurred most frequently between Transylvania Park and Woodland Avenue (9 of 19).

Two pedestrian accidents occurred on this street.

STREET: Euclid Avenue
FROM NODE NUMBER 42 TO NODE NUMBER 108

Number of Accidents -- 16
Number of Injury Accidents -- 3
Number of Injuries -- 4

Summary by Type of Accident

Type	Number	Type	Number
24	8	29	1
31	2	38	1
40	2	47	1
25	1		

COMMENTS:
Most accidents are rear-end type involving a vehicle stopped for the signal at Woodland Avenue.

STREET: Euclid Avenue
FROM NODE NUMBER 42 TO NODE NUMBER 24

Number of Accidents -- 30
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number	Type	Number
24	8	35	2	34	1
29	5	47	2	46	1
32	5	25	1	48	1
30	2	31	1	49	1

COMMENTS:
The rear end (code 24) accidents usually involved a vehicle stopped at signal. The code 32 accidents primarily involved entering or exiting a parking lot. There were several sideswipe accidents involving the dual left-turn lanes from Euclid Avenue to Upper Street.

STREET: Commonwealth Drive
FROM NODE NUMBER 67 TO NODE NUMBER 84

Number of Accidents -- 39
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
35	19	31	1
34	9	40	1
30	5	43	1
24	2	48	1

COMMENTS:
The majority of these accidents were related to on-street parking.

STREET: Huguelet Drive
FROM NODE NUMBER 74 TO NODE NUMBER 76

Number of Accidents -- 21
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number
35	17
24	2

COMMENTS:
Almost all of these accidents involve on-street parking.

STREET: Huguelet Drive
FROM NODE NUMBER 50 TO NODE NUMBER 62

Number of Accidents -- 17
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
34	6	24	1
35	3	29	1
33	2	39	1
48	2	40	1

COMMENTS:
Most of these accidents were related to on-street parking.

STREET: Clifton Avenue
FROM NODE NUMBER 46 TO NODE NUMBER 75

Number of Accidents -- 26
Number of Injury Accidents -- 3
Number of Injuries -- 5

Summary by Type of Accident

Type	Number	Type	Number
35	13	44	2
32	4	24	1
40	3	46	1
34	2		

COMMENTS:
Most of these accidents involved on-street parking.

STREET: Woodland Avenue
FROM NODE NUMBER 76 TO NODE NUMBER 107

Number of Accidents -- 24
Number of Injury Accidents -- 4
Number of Injuries -- 5

Summary by Type of Accident

Type	Number	Type	Number
35	7	32	3
24	4	46	2
25	3	28	1
31	3	34	1

COMMENTS:
The leading accident cause involved on-street parking. There were also several rear-end type accidents.

STREET: Complex Drive
FROM NODE NUMBER 63 TO NODE NUMBER 69

Number of Accidents -- 23
Number of Injury Accidents -- 1
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
35	8	24	1
29	3	25	1
48	3	32	1
34	2	33	1
30	2	40	1

COMMENTS:
The leading cause of accidents was on-street parking.

STREET: Columbia Avenue
FROM NODE NUMBER 45 TO NODE NUMBER

Number of Accidents -- 19
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
35	9	30	1
32	3	34	1
29	2	40	1
31	2		

COMMENTS:
The most frequent cause of accidents was on-street parking. Several accidents involved vehicles entering or leaving a driveway or entrance.

STREET: Linden Walk
FROM NODE NUMBER 104 TO NODE NUMBER 112

Number of Accidents -- 16
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
35	9	30	1
31	4	40	1
29	1		

COMMENTS:
Most of the accidents involved a vehicle parked on the street. Several accidents involved vehicles entering or exiting a private driveway.

STREET: Funkhouser Drive
FROM NODE NUMBER 47 TO NODE NUMBER 81

Number of Accidents -- 15
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
35	7	30	1
34	5	33	1
29	1		

COMMENTS:
Almost all of the accidents (13) involved on-street parking.

STREET: Cooper Drive - Waller Avenue
FROM NODE NUMBER 68 TO NODE NUMBER 88

Number of Accidents -- 14
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
24	4	35	1
25	4	40	1
29	1	43	1
33	1	47	1

COMMENTS:
Most of the accidents are rear ends due to traffic congestion.

STREET: Medical Center Drive
FROM NODE NUMBER 51 TO NODE NUMBER 78

Number of Accidents -- 14
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
35	5	32	1
40	3	34	1
29	2	46	1
24	1		

COMMENTS:
The leading cause of accidents was on-street parking. There were three fixed object accidents; two involved hitting the overhang of guard house.

STREET: Hilltop Avenue
FROM NODE NUMBER 76 TO NODE NUMBER 77

Number of Accidents -- 13
Number of Injury Accidents -- 0
Number of Injuries -- 0

Summary by Type of Accident

Type	Number	Type	Number
35	7	30	1
33	2	32	1
24	1	46	1

COMMENTS:
Nine of the 13 accidents involved on-street parking.

STREET: University Drive
FROM NODE NUMBER 61 TO NODE NUMBER 66

Number of Accidents -- 12
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
29	5	30	1
40	3	32	1
25	1	39	1

COMMENTS:
No accident pattern was found.

STREET: Administration Drive
FROM NODE NUMBER 4 TO NODE NUMBER 8

Number of Accidents -- 11
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
35	7	34	1
29	1	38	1
33	1		

COMMENTS:
Nine of the 11 accidents involved on-street parking.

STREET: Hospital Drive
FROM NODE NUMBER 53 TO NODE NUMBER 54

Number of Accidents -- 11
Number of Injury Accidents -- 2
Number of Injuries -- 2

Summary by Type of Accident

Type	Number	Type	Number
35	5	32	1
40	2	39	1
30	1	46	1

COMMENTS:
The major contributing factor was on-street parking.

STREET: Virginia Avenue
FROM NODE NUMBER 83 TO NODE NUMBER 97

Number of Accidents -- 11
Number of Injury Accidents -- 1
Number of Injuries -- 1

Summary by Type of Accident

Type	Number	Type	Number
35	5	32	1
31	3	38	1
30	1		

COMMENTS:
The leading contributing factor was on-street parking followed by entering or leaving a private driveway.

STREET: Rose Lane
FROM NODE NUMBER 43 TO NODE NUMBER 72

Number of Accidents -- 10
Number of Injury Accidents -- 2
Number of Injuries -- 2

S Type of Accident

Type	Number
35	6
39	2
29	1
31	1

COMMENTS:
On street parking contributed to 6 of the 10 accidents.
There was one accident involving a moped and one involving a bicycle.

STREET: South Upper Street
FROM NODE NUMBER 24 TO NODE NUMBER 6

Number of Accidents -- 10
Number of Injury Accidents -- 3
Number of Injuries -- 3

Summary by Type of Accident

Type	Number	Type	Number
35	3	25	1
24	2	38	1
40	2	46	1

COMMENTS:
There was one pedestrian accident at this location.