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MANUAL
PLANNING THE PROCEDURE AND ANALYSIS
OF A
HIGHWAY ACCIDENT SURVEY

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PREPARED BY THE
IOWA STATE PLANNING BOARD
IN COOPERATION WITH THE
WORKS PROGRESS ADMINISTRATION
DES MOINES, IOWA

1937

MANUAL

Prepared by the Iowa State Planning Board
in Cooperation with the
Works Progress Administration
Des Moines, Iowa

June 25, 1937

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1. Introduction.

In preparing this manual it has been difficult to exclude certain practices used in Iowa which may be of no value if applied to other states in planning a highway accident survey.

This survey may be sponsored by the State Planning Board, the State Safety Council, the State Highway Department or the State Motor Vehicle Department. Other states might use other agencies to facilitate smooth operation of such a survey. ✓

A. Purpose. The purpose of this study is to determine more fully the role played by every factor involved in automobile accidents, whether related to engineering, enforcement, or education, as an aid in the establishment of more effective safeguards on the highways.

The information provided by a detailed analysis of the highway traffic accidents in a given state for a period of years (five in Iowa, 1932 - 1936) will be valuable in preparation of accident preventive legislation and for a program of public education. It should be made available to state legislatures and to governmental or civic agencies interested in highway safety.

B. Nature. States purposing such a survey should first anticipate data desired. The Iowa plan and details of information will be found in this manual under procedure and by examination of the code sheet.

The sources of these data are the next consideration. In Iowa they were: (1) State Motor Vehicle Department records of accidents, and (2) the closed claims records of insurance companies of the state. In states where disposition or police action is not a matter of record in the Motor

years or more. Circle the place of residence. If you circle #11 write name of state on reverse side of code sheet. Circle the condition of driver. If you circle 9, describe condition on reverse side of sheet. Circle improper driving. If you circle more than one, also circle 3 (combinations of above). If any violations committed is not on this sheet, describe on reverse side of code sheet.

Circle the police action. Circle the most severe final disposition as to this driver. If there were more than two vehicles involved in this accident, use another sheet for the additional vehicles, record on the supplementary sheet the identical data in Fields B, C, G to O inclusive, as shown on the original sheet, circle 9 in Field Q on the supplementary sheet and number it with the same report number as on the original. Fasten both together.

Field F. Make separate records for each pedestrian involved. Circle what pedestrian was doing. If you circle 6 (all others), describe action on reverse side of code sheet. Circle condition of pedestrian when accident occurred. If you circle 10, describe condition on reverse side of code sheet. If there was more than one pedestrian involved, use another sheet for the additional pedestrians, record on the supplementary sheet the identical data in Fields B, C, G to O inclusive, as shown in the original sheet, circle 9 in Field Q on the supplementary sheet and number it with the same report number as on the original. Fasten both together.

Field G. Frequently one collision immediately results in another, Con-

sider only the original impact when determining the type of
accident and circle one type. If none of those named apply,
circle 12 and describe on reverse side of code sheet.

Field H. If an arrest was made, circle 1. If no arrest was made, circle
2. If unknown, circle 3. Determine the most severe disposition
given in this accident and circle only that one.

Field I. Circle road condition. If you circle 4, describe condition on
reverse side of sheet. Circle road surface.

Field J. Circle kind of road. If you circle 7, describe kind on re-
verse side of code sheet.

Field K. Circle weather and light condition at time and location of
accident.

Field L. Circle traffic control functioning at time and location of
accident. If a type of control was operating and does not
appear on this sheet, describe on reverse side of code sheet.

Field M. Write the total number of vehicles damaged in this accident.

Field N. Write the total number of male persons killed. Also female
persons. Write the total number of male persons injured non-
fatally. Also female persons. Write the total number of
persons killed and the total number of persons injured.

Field O. Determine whether person killed or injured was a passenger
or a pedestrian. Make separate records in the spaces pro-
vides for each passenger and pedestrian. Circle the sex and
whether killed or injured. Make sure injured persons did
not die later as the result of the accident. Write the age

of the person. Use "00" for less than one year. If more than seven passengers or one pedestrian were killed or injured use another sheet for the additional person, record on the supplementary sheet the identical data in Fields B, C, G to O inclusive, as shown on the original sheet, circle 9 in Field P on the original sheet and circle number on the supplementary sheet with the same report number as on the original sheet. Clip both together.

B. INSTRUCTIONS TO RECORDERS (Insurance Company Records)

1. Record only such accidents as those that occur on public thoroughfares such as open country highways, alleys, city streets, etc.
2. Include accidents causing either property damage, injury, or death as a result of traffic friction. Exclude all losses caused by fire, theft, wind, etc.
3. Record all available data on each accident code sheet from their insurance company's file.
4. Every section of the code sheet must be marked. If no answer is given, circle the last number in that section (usually labelled "unknown" or "other"). If no answer is given in spaces calling for numbers or other writing (such as age, experience), write NA (not ascertainable). Use calendars and lists of counties and towns to supply missing data in regard to day of week, number of county, etc. Almanacs will show light conditions (Field L) if these are not given in the loss claim.
5. Once a code sheet is filled out, sign your initials in the space provided for at the bottom of the sheet. File the code sheets together, and before the close of the day, check through all complete

sheets to make certain no omissions or errors have been made.

6. It will be necessary to use additional code sheets if more than two cars are involved (see Field P). In such cases circle number 9 on each supplementary code sheet used, and fasten it to the original code sheet with a paper clip.
7. Care should be taken that complete information is shown on all supplementary code sheets.

C. SORTING AND TABULATING

The procedure for sorting and tabulating in Iowa can be ascertained by examination of the following set of instructions. Keep in mind that item number one is straight summarization of data on fatal accidents. The numbers under "column" refer to columns on punch cards and the numbers under "position" are the possible number of places to punch per column. The punch cards provide for eighty columns. This survey is prepared to use but 77 of these columns.

Items two to ten, inclusive, in this set of instructions include the proposed cross tabulations to be made on the Iowa Survey. Innumerable other cross tabulations could be used or tried at the discretion of those conducting the survey. The correlation factor might or might not be significant in many cases.

~~INSTRUCTIONS FOR SORTING AND TABULATING~~

1. Count/ and tabulate all columns. (Straight summarization of data on ~~fatal~~ accidents). Omit supplementary cards when considering columns 1 to 16 inclusive, and 48 to 55 inclusive.

Column		Position
9	Type of location	(1 to 12)
10	Month	(1 to 12)
13	Year	(1 to 6)
14	Day of Week	(1 to 7)
15	Time of Day A.M.	(1 to 12)
16	Time of Day P.M.	(1 to 12)
17, 31	Types of vehicles involved	(1 to 12)
18, 32	Ages of vehicles involved	(0 to 9)
19, 33	Actions of vehicles involved	(1 to 12)
20, 34	Condition of vehicles involved	(1 to 11)
21, 35	Sex of Drivers	(11 to 12)
23, 23)		(00 to 99)
36, 37)	Ages of Drivers	(00 to 99)
24, 38	Driving experience	(0 to 9)
25, 39	Residence of drivers	(1 to 12)
26, 40	Condition of drivers	(1 to 9)
27, 41)		(1 to 10)
28, 42)	Improper Driving	(1 to 10)
29, 43)		(1 to 6)
45)	What pedestrian was doing	(1 to 10)
46)		(1 to 7)
47	Condition of pedestrian	(1 to 10)
48	Type of accident	(1 to 12)
49	Extent of penalty	(1 to 12)
50	Condition and surface of road	(1 to 11)
51	Kind of road	(1 to 8)
52	Weather and light	(1 to 12)
53	Traffic control	(1 to 9)
54	Number of vehicles damages	(1 to 9)
55	Males killed	(1 to 12)
56	Females killed	(1 to 12)
57	Total killed	(1 to 12)
58	Males injured	(1 to 12)
59	Females injured	(1 to 12)
60	Total injured	(1 to 12)
61, 76	Ages and sex of pedestrians and passengers killed and injured	(00 to 99)
77	Supplementary	(1 to 12)

(Tabulate by the following age groups: 0-13, 14-15, 16-19, 20-25, 26-34, 35-44, 45-54, 55-64, 65 and over.)

2. Sort for type of location
Retaining this sort, count and tabulate:

Actions of vehicles
Condition of vehicles
Improper driving

3. Classification by types of locations.
 - a. Town and city.
 - b. Open country.
- C. Time of accidents.
 1. By months and types.
 2. By days in week and types.
 3. By hours of day, by months and types.
- d. Types of vehicles involved.
 1. By vehicle types and types of accidents.
- E. Weather conditions.
 1. By types of weather and types of accidents.
- F. Road conditions.
 1. By types of conditions and types of accidents.
 2. By types of road and types of accidents.
- G. The driver.
 1. By condition or action of driver and types of accidents.
 - a. Disregarded traffic regulations.
 - b. Physical condition of driver.
 - c. Age of driver.
 - d. "Repeaters" - chronic cases.
- H. The car.
 1. By age of car and by type of accident.
 2. By condition of car and type of accident.
- I. The pedestrian.
 1. By actions of pedestrians, open country and town.
 2. By condition of pedestrian.
- J. The cost.
 1. Number killed and injury by:

- a. Type of accident.
- b. Types of locations (open country and town).
- c. Condition of driver.
2. Legal action.
 - a. By types of injury, cases filed and notices of judgment.
 - b. Number involving fines.
 - c. Number involving judgments.
 - d. Number involving revocation of driver's license.
 - e. Total amountsof judgments in cases covered.

K. Proposed solutions.

1. Speed limits - day, night, truck, passenger car, localized.
2. Driver's examinations (physical and/or driving ability).
3. Limiting drivers to a fixed number of accidents per year.
4. Additional signals and signs.

V. APPENDIX

HIGHWAY TRAFFIC ACCIDENT ANALYSIS

CODE SHEET

Form 3117-1

Report No. _____	D. VEHICLE NO. 1				E. VEHICLE NO. 2				F. WHAT PEDESTRIAN WAS DOING		Most severe disposition in this accident		L. TRAFFIC CONTROL FUNCTIONING	
On _____	Driver's Name _____				Driver's Name _____				1. Crossing at intersection with signal		4. License revoked or suspended		1. R.R. crossing gates	
At _____	Driver's Address _____				Driver's Address _____				2. Same - against signal		5. Fine and jail		2. Officer or watchman	
Intersecting street _____	Dr. License No. _____				Dr. License No. _____				3. Same - no signal		6. Jail only		3. Automatic signal	
House number, Etc. _____	Veh. Lic. No. _____				Veh. Lic. No. _____				4. Same - with or against signal unknown		7. Fine only		4. STOP signs	
B. LOCATION	Yr. Lic. _____				Yr. Lic. _____				5. Same - Diagonal		8. Held for court		5. Warning signs: SLOW, etc.	
() _____ County	Make of Car _____				Make of Car _____				6. Crossing not at intersection		9. Pending		6. Control not functioning	
() _____ City or Town	Yr. of Model _____				Yr. of Model _____				7. Kidding unlawfully		10. Discharged		7. No control	
() _____ Township (Open Country)	Veh. of Model _____				Veh. of Model _____				8. Playing, skating, etc. in roadway		11. Other driver refused to pros. or failed to appear		8. Not stated	
TYPE OF LOCATION	VEHICLE TYPE				VEHICLE TYPE				9. Walking in roadway		12. Unknown		9. Other	
1. Intersection	1. Passenger Car				1. Passenger car				10. Working in roadway					
2. Straight-away	2. Light truck				2. Light truck				1. Coming from between parked cars					
3. Curve	3. Heavy truck				3. Heavy truck				2. Waiting for, getting on or off street car, or bus at safety zone					
4. Sharp turn	4. Bus				4. Bus				3. Same - no safety zone					
5. Dead end	5. Taxi				5. Taxi				4. Getting on or off other vehicle					
6. Railroad crossing	6. Motorcycle				6. Motorcycle				5. Not in roadway					
7. Bridge or overpass	7. Other Motor Vehicle				7. Other motor vehicle				6. Other					
8. Tunnel or underpass	8. Street car				8. Street car				7. Not stated					
9. Hill	9. Railroad				9. Railroad				CONDITION OF PEDESTRIAN					
10. Combination of above	10. Bicycle				10. Bicycle				1. Had been drinking					
11. Not stated	11. Animal-drawn				11. Animal-drawn				2. Attention diverted					
12. Other	12. Other				12. Other				3. Confused by traffic					
C. WHEN OCCURRED	VEHICLE AGE				VEHICLE AGE				4. Blinded by headlights					
198 Year _____	Years _____				Years _____				5. View obstructed					
1. Sunday	1. Straight				1. Straight				6. Physical defects					
2. Monday	2. Right turn				2. Right turn				7. Careless					
3. Tuesday	3. Left turn				3. Left turn				8. Normal					
4. Wednesday	4. U turn				4. U turn				9. All others					
5. Thursday	5. Leaving curb or roadside				5. Leaving curb or roadside				10. Not stated					
6. Friday	6. Other backing				6. Other backing				G. TYPE OF ACCIDENT					
7. Saturday	7. Standing				7. Standing				Vehicle vs. Vehicle					
A.M. _____	8. Slowing				8. Slowing				1. Angle					
P.M. _____	9. Passing				9. Passing				2. Head-on					
P. 1. Sunday	10. Skidding				10. Skidding				3. Rear end					
2. Monday	11. Ran off road				11. Ran off road				4. Backed into					
3. Tuesday	12. Not stated				12. Not stated				5. Side swipe					
4. Wednesday	VEHICLE CONDITION				VEHICLE CONDITION				6. Not stated					
5. Thursday	1. In apparently good condition				1. In apparently good condition				Vehicle vs. Pedestrian					
6. Friday	2. Faulty brakes				2. Faulty brakes				7. Pedestrian					
7. Saturday	3. Faulty steering mechanism				3. Faulty steering mechanism				8. Animal					
A.M. _____	4. Glaring Headl'ts				4. Glaring Headl'ts				9. Fixed object					
P.M. _____	5. Imp. headlights				5. Imp. headlights				10. Moving object					
P. 1. Sunday	6. Tail light out or obscured				6. Tail light out or obscured				Miscellaneous					
2. Monday	7. No lights				7. No lights				11. No collision					
3. Tuesday	8. Blow out				8. Blow out				12. All others					
4. Wednesday	9. Combination				9. Combination									
5. Thursday	10. Other				10. Other									
6. Friday	11. Not stated				11. Not stated									
7. Saturday	O. KILLED & INJURED				O. KILLED & INJURED									
1. Male	Passenger #4				Passenger #4									
2. Female	11 Male				11 Male									
3. Killed	12 Female				12 Female									
4. Injured	11 Killed				11 Killed									
5. Supplementary sheet	12 Injured				12 Injured									

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
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**PRINTING
PUNCH**

PRINTING PUNCH

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LICENSED FOR USE UNDER PATENT 1,772,492

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

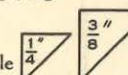
SCALE APPROXIMATELY DOUBLE SIZE

Date _____

Name of Customer_____

Order No. _____

INSTRUCTIONS



Indicate corner and size to be clipped by a triangle $\frac{1}{4}$ $\frac{8}{}$ in that corner.

If all corners to be square, put a square in the upper left hand corner.

Indicate Industry Code Number on Electrotape.

T-1570 A End.

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1. LETTERS TO MAYORS

To be sent to mayors in county-seat towns
and others with populations of 5,000 or greater.

Dear Sir:

In cooperation with the Automobile Department of the State
of _____, the _____ State Planning Board is sponsoring
a survey of traffic accidents in the state of _____ for the
period 1932 - 1936. The survey is a part of the program of the
Works Progress Administration.

Although a major portion of this work will be carried on in the
State House, it is desirable that court and police records and local
traffic regulations be examined in each county in order to provide
additional information. In the end we expect to provide a complete
analysis of all traffic accidents for which data can be obtained.
If your administration desires it, a separate report for your city
will be prepared and turned over to you. We do not expect to pre-
pare detailed reports for individual cities unless these cities re-
quest them, but in such cases they will be prepared as a part of the
project. An outline of the contents of such a report is enclosed.

Within a few days a worker will call at your office asking your
cooperation in making available the information for this survey.
His work will require three or four weeks. Any advice you may give
him will be appreciated.

Very truly yours,

NOTE: A similar letter could be used to mail to County Clerks.

2. INSTRUCTIONS TO LOCAL ENUMERATORS

Dear Sir:

You have been chosen to carry on the work in _____ County for the _____ Survey of Highway Accidents. An outline of the nature and purpose of this survey is attached. Please read it thoroughly and write us concerning any sections concerning which you are not clear. Your work will bring you in contact with several local officials and you are expected to explain the purposes of the survey to them upon request.

Your work will consist of four types of investigation:

1. An analysis of cases arising out of traffic accidents as indicated in the Docket of the Clerk of the District Court for the period 1932 to date. The docket will show all damage suits and list them by number and term of court. After obtaining these, go to the court records and determine which are traffic accident cases. Analyze each case on one of the enclosed forms. Use a separate sheet for each case and fill in as completely as possible from the court record. Indicate the books from which you obtained your information in the blank "Sources of Data" in the lower left-hand corner of each form.
2. Follow the same procedure for Justice of the Police courts, police courts, and municipal or superior courts in your own (county-seat) town. When all of these records have been analyzed for the period 1932 - 1936, mail or express the completed forms to the _____ State

Planning Board, Traffic Accident Division, (address).

3. In order to discover the possible effects of changes in city traffic regulations during this period, it is desirable that the minutes of the city council be analyzed to show such changes. Confer with the department of public safety, police department, city clerk or mayor to find the best method of obtaining this information. These changes will include the establishment of arterial streets, the placing of traffic signals, alteration of parking regulations and other ordinances pertaining to vehicular traffic. Copy the pertinent sections of these minutes in the order of their passage, indicating the data on which each became effective. Prepare this report in duplicate, retaining one copy and mailing the other to the _____ State Planning Board, Traffic Accident Division, (address).
4. We are to prepare a brief report of our findings for use of the city only in case the mayor and council desire it. At this time it will be necessary to confer with the mayor or some other responsible city official concerning the desirability of such a report. If prepared, the report will not be published but will be typewritten and made available only to city officials. We have no desire to publicize either "good" or "bad" cities or to duplicate reports already prepared. Show this city official a copy of the "Outline for a City Survey of Traffic Accidents" and ask for his comment or suggestions concerning it. If a report

is desired, notify this office. By this time all of the information obtained from the Automobile Department and from your own survey of court records should have been analyzed, and such portions as pertain to your city will be sent to you for analysis. Follow the outline closely in presenting your data. See that the spotting of accident locations on maps is accurately done. Upon completion, send the report, together with the forms and all other information use, to the State Planning Board. There the report will be edited, typed in final form, and returned to you for presentation to the city official with whom you have had contact.

I believe that you will agree with us in regard to the importance of this work. It is apparent that the quality of results depends very largely upon the care with which county enumerators conduct their work. You were selected primarily because you are careful and conscientious. It is also necessary that you be tactful. The records from which you will gather your information are open to the public, but you must arrange your use of them to suit the convenience of the person in charge. You cannot afford to antagonize them.

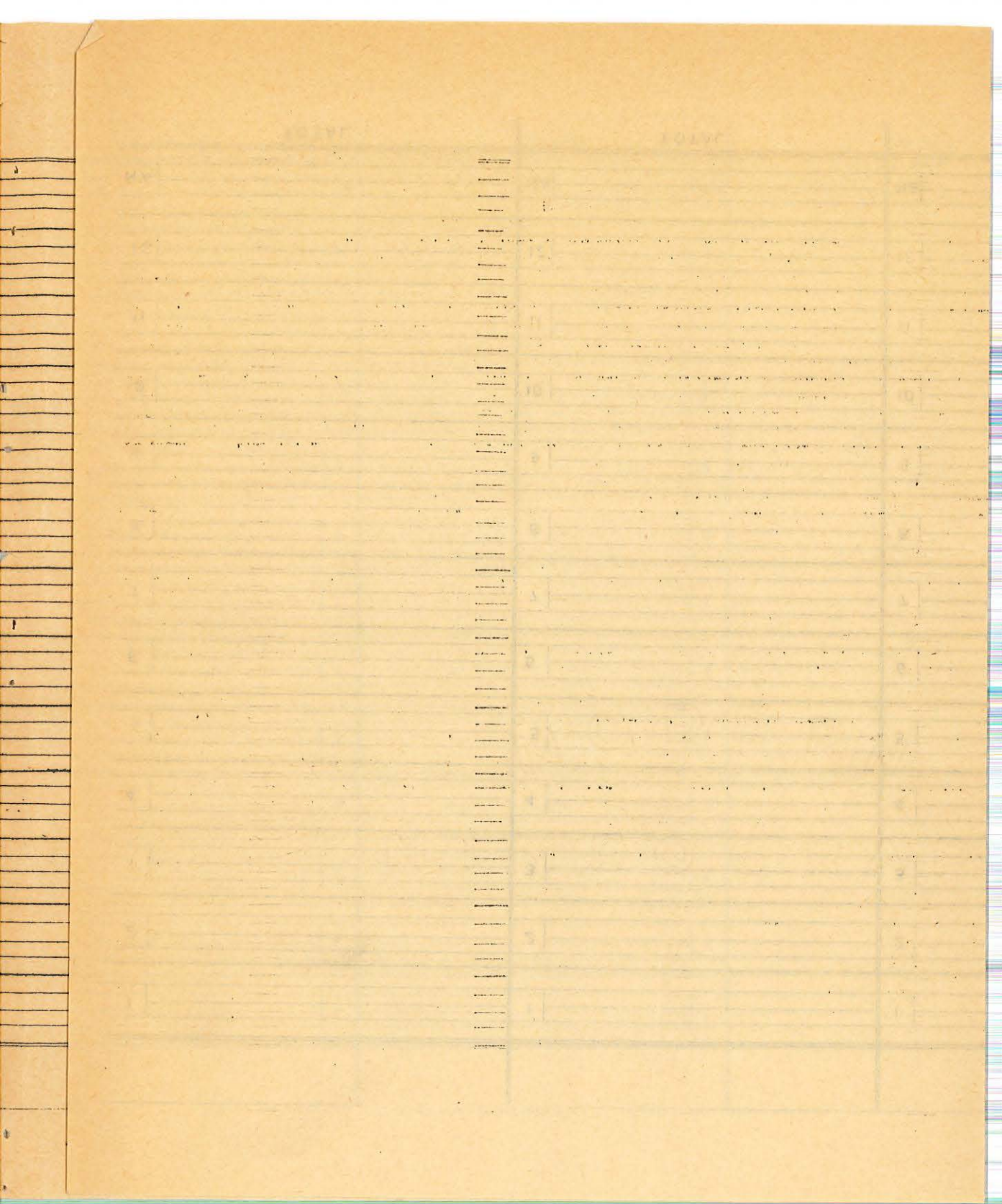
Very truly yours,

STATE PLANNING BOARD

BY _____

3. OUTLINE FOR A CITY SURVEY OF TRAFFIC ACCIDENTS

- A. General statement of nature and purpose of survey and sources of information.
- B. Graphs showing number of accidents reported, by months, 1932 - 1936.
- C. Maps showing location of accidents, each year, 1932 - 1936, also location of arterial streets and traffic lights as of August 1 of that year.
- D. Analysis of trends in number and location of accidents, citing the effect of changes in traffic regulations.



HIGHWAY ACCIDENT ANALYSIS

SUMMARIZATION

SORTED BY _____ YEAR _____

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