

ONE-WAY
STREET SYSTEMS

S U M M A R Y

In April of 1945 Portland's Traffic Engineer, Mr. F. T. Fowler sent to 91 cities of over 100,000 population, a questionnaire pertaining to one-way streets and other metropolitan traffic problems.

Forty-three answers were received, and of these 32 cities or almost 75% reported some system of one-way streets in operation. Only 3 of the 11 having no one-way streets have a population of over 320,000 -- the population of the remaining 8 averaging only 230,000, which would seem to indicate that the one-way system is often adopted because of increased congestion caused by larger populations.

Another trend is shown by the answers to the question concerning the number of blocks in which no parking is permitted on either side of the street. Answers from cities having one-way streets ranged from 2 blocks up to 100, with only 7 of the 32 reporting that no blocks were so regulated, while 5 of the 11 not having one-way streets answered the question with "0". In other words, narrow streets are also indicated in cities adopting one-way systems.

Only 7 cities do not prohibit left turns, and 26 prohibit them at selected intersections.

Thirty-three cities do not permit angle parking in loading zones and 20 restrict the loading and/or unloading at certain specified hours.

The comments as to results of one-way systems are, in the main, enthusiastic, with 26 cities answering "Excellent", with the further commendation that traffic is speeded up and parking aided. The attitude of the public is also shown as favorable in most cases.

The following tables present the findings as assembled from the questionnaires. Attention is particularly called to the "remarks" at the end of the report. These are exact statements made by the various cities, and serve to amplify the briefer answers given in the body of the questionnaire.

QUESTIONNAIRE PERTAINING TO
ONE-WAY STREETS FOR MOTOR VEHICLES

To what extent does your city have the one-way system in operation?

1. No one-way streets 11
2. Random streets where necessary 12
3. Section of business district with several one-way streets, intermingled with two-way streets 10
4. Section of business district with alternating streets one-way traffic, alternating directions (Grid System) 4
5. Random streets and section of business dist. with one-way intermingled with two-way . . . 3
6. Random streets, section of business dist. with one-way intermingled with two-way and section of business dist. grid system 2
7. Random streets and section of business district grid system 1

Total number of cities reporting

43

ONE-WAY SYSTEM (continued)

Cities using each type of one-way operation are listed in the following tables, together with answers to the question concerning the approximate number of blocks in which no parking is permitted either side of the street.

Population given is estimated one for present time.

Cities having one-way systems on random streets where necessary.

<u>City</u>	<u>Est. Pop.</u>	<u>No parking permitted either side of street</u>
Oakland, California	380,000	2 Blocks
Omaha, Nebraska	230,000	20
Dayton, Ohio	315,000	20
Hartford, Conn.	180,000	No ans.
Yonkers, New York	145,000	6 Blocks
Sacramento, California	117,460	0
Chicago, Illinois	3,352,086	Entire central Bus. Dist.
Cleveland, Ohio	900,000	24
Minneapolis, Minn.	520,000	No ans.
Gary, Ind.	115,000	15
Washington, D. C.	926,260	37
Houston, Texas	550,000	0

Cities having section of business district with several one-way streets, intermingled with two-way sts.

Dallas, Texas	370,414	50 Blocks
Columbus, Ohio	388,712	6
Grand Rapids, Michigan	210,000	0
Wilmington, Delaware	130,000	0
Canton, Ohio	108,000	5
Fort Wayne, Ind.	150,000	3
Erie, Pa.	130,000	0
Buffalo, N. Y.	612,000	50
Cincinnati, Ohio	500,000	15
Detroit, Michigan	1,875,000	100

Cities having section of business district with alternating streets one-way traffic, alternating directions (Grid System)

San Antonio, Texas	400,000	0
Philadelphia, Pa.	970,000	25
San Francisco, Calif.	786,000	51
New Orleans, La.	567,000	3

Cities having random one-way streets and section of
business district with one-way intermingled with two-way

<u>City</u>	<u>Est. Pop.</u>	<u>No Parking permitted either side of street</u>
Springfield, Mass.	160,000	21 Blocks
Bridgeport, Conn.	210,000	10
Pittsburgh, Pa.	671,655	42

Cities having random one-way streets and section of
business district with one-way intermingled with two-
way and section of business district Grid System

Flint, Michigan	171,000	150 Blocks
St. Louis, Mo.	825,000	0

Cities having random one-way streets and section
of business district grid system

Richmond, Va.	250,000	25
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Cities have no one-way system

Indianapolis, Ind.	400,000	No ans.
Birmingham, Ala.	300,000	0
Syracuse, N. Y.	230,000	No ans.
Oklahoma City, Okla.	256,000	0
San Diego, California	320,000	5
Tulsa, Oklahoma	200,000	0
Spokane, Washington	144,000	0
Los Angeles, California	1,734,000	80% Cent. Dist.
South Bend, Ind.	110,000	0
Toledo, Ohio	282,349	No ans.
Seattle, Washington	450,000	5

Left Turns Prohibited (in business district)

None Prohibited.	7
At selected intersections.	26
Solid section of business district	5
At selected intersections and Solid section of business district.	4
No answer	1

Total number of cities reporting	43
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Loading-unloading zones (freight)

Angle parking permitted in loading zones

Yes	7
No	33
No Ans.	1
Sometimes	<u>2</u>
	43

Restriction on loading and/or unloading at certain specified hours

Yes	20
No	18
Not Enforced	1
No Ans.	<u>4</u>
	43

RESULTS OF ONE-WAY SYSTEM

Excellent	26
Fair	3
"Works successfully" . . .	1
"Necessary".	1
No comment	<u>1</u>

Total number of cities reporting One-Way Streets	32
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Effect on Traffic Movement

Speeded up.	28
No answer	<u>4</u>
Total	32

Effect on Parking

Aided	20
No change	6
No answer	5
"Encourages double parking" <u>1</u>	
Total.	32

Attitude of Public

Retail Merchants:

Favorable	18
Passive	6
No answer	6
Object	1
Cent. dist. obj. outside Favorable	1

Other Business & Professional Men:

Favorable	17
Passive	8
No answer	7

Motorists:

Favorable	23
Passive	5
No answer	4

REMARKS

Chicago Congestion reduced. With progressive timing speed is controlled. Pedestrian accidents reduced by 2/3. Vehicular accidents reduced, miles per accident doubled. Speed increased due to freer traffic flow.

San Francisco Motorists generally favorable. Some confusion resulting in unfavorable comments. Motorists tend to stay to right through habit and a natural fear of intersections when driving on the left.

New Orleans Merchants at first opposed to one way streets since they thought it would divert traffic. Due to advantages since proven both merchants and citizens unanimously favorable and entire commercial district became one way streets. Many requests for one way streets in residential areas. Free movement of traffic.

Minneapolis One way streets speed up traffic and relieve congestion. However this tends to attract through traffic which brings no commercial benefit to their area. Streets bordering business district may be established to favor through traffic if cross traffic is not proportionately heavy and so cause congestion.

Cincinnati Congestion due to 40 foot streets greatly reduced by one way operation. Leeway for parking and turning movements, etc. without holding up through traffic. Danger of head-on collisions and vehicles turning through moving lines of traffic eliminated.

Oakland Traffic Engineer, J.A.Czezek, is working toward installation of one way streets in Oakland business district due to street pattern and past accident record. Intersectional delays will be lessened by one way street system by minimizing turning movements at intersections.

Dallas Due to the number of streets having streetcar tracks the one way system is limited in extent. Addition of two more streets to system pending lengthening of one by one block.

San Antonio Concensus of opinion -- congestion in area greatly reduced. Main objection -- increased mileage driven.

Omaha Forced to use one way traffic on narrow streets to relieve congestion and to speed up the flow of traffic.

Richmond Good results from one way system in Richmond.

Grand Rapids One way streets eliminated congestion caused by previous two way operation and allowed removal of the traffic officer from that area, thus solving the police man power situation to a great extent.

Tulsa The one way system was tried in Tulsa but abandoned due to merchants' strenuous objection.

Canton Use of one way streets limited to where it would be impossible to maintain two way traffic with parking on one side. Has been of great value in the handling of vehicular and pedestrian traffic. City Council and business interests uncooperative toward attempts to extend system, due to conflicting opinions, ideas etc.

Fort Wayne Experimental 60 day survey, 1941, showed convincing proof that one way streets will increase traffic lane capacities as well as expedite traffic through congested areas in a manner which will reduce accidents and congestion.

Erie Experience in one way system revealed following advantages:

1. Increased facility of movement
2. Reduced hazard to vehicles
3. Increased lane capacity, making it possible to permit parking on both sides of 30 foot streets.

Addition of 4 more one way streets contemplated for after the war.

Toledo Discontinuation of one way plan apparently caused by opposition of three large department stores claiming that their business would be affected by such a plan diverting traffic as well as encouraging the faster moving traffic to buy at the outer area stores (causing decentralization). Retail merchants Board went on record "in favor". Aided in moving traffic around busses and streetcars looping at undesirable locations.

Washington Rush hour one way operation, remainder of day two way has been found very successful on streets having high percentage of uni-directional flow during peak periods.

Wilmington Wilmington has been exceptionally pleased with the results of one way operations, most of them in effect since 1935.

QUESTIONNAIRE PERTAINING TO ONE-WAY STREETS
FOR MOTOR VEHICLES(Cities in U. S. of 100,000 or more population)

Name of	Population	Present
City _____	1940 Census _____	Estimate _____

Does city have a Traffic Engineering Department?	Yes _____	No _____
Does city employ a traffic engineer?	Yes _____	No _____

I MASS TRANSPORTATION SYSTEM (in business district, street surface only).

1. Street cars _____
2. Trolley coaches _____
3. Gas-motor buses _____

Remarks: _____

II TRAFFIC MOVEMENT

- A To what extent does your city have the one-way system in operation?
(Note: If map submitted shows answers to following four questions, better omit)

1. No one-way streets _____
2. Random streets where necessary _____
3. Section of business district with several one-way streets,
intermingled with two-way streets _____
4. Section of business district with alternating streets one-way
traffic, alternating directions (Grid system) _____

Remarks: _____

- B Left turns prohibited (in business district).

1. Extent of prohibition (by area).

- a. None prohibited _____
- b. At selected intersections _____
(Give approximate number of intersections) _____
- c. Solid section of business district _____
(Give approximate number of intersections) _____

Remarks: _____

2. Extent of prohibition (by time)

- a. No prohibition _____
- b. During congested periods only _____
- c. All hours of day _____
- d. All hours of day and night _____

Remarks: _____

III VEHICULAR TRAFFIC CONTROL (business district)

A. Signal system

1. No coordination
2. Alternate
3. Double alternate
4. Simultaneous
5. Progressive timing
 - a. Speed for which signals are timed

Remarks: _____

B. Parking (Note: Please answer even though no one-way system in operation)

1. Approximate number parking meters
2. Approximate number blocks, no parking permitted, one side street only
3. Approximate number blocks, no parking permitted, either side of street

Remarks: _____

C. Loading - unloading zones (freight)

1. Location: Alleys _____ At curb _____
2. Is angle parking permitted in loading zones? Yes _____ No _____

Remarks: _____

3. Is there any restriction on loading and/or unloading at certain specified hours? If so, describe briefly:

IV PEDESTRIAN CONTROL

- A. Walk and wait signals: Yes _____ No _____

Remarks: _____

V RESULTS OF ONE-WAY SYSTEM

- A. To what extent has one-way street system been a success?
Excellent _____ Fair _____ Questionable _____
Abandoned due to failure _____ Abandoned due to objections _____

Remarks: _____

B. Traffic Movement:

1. Speeded up _____ Slowed down _____ No change _____

a. Basis of conclusion:

Actual survey
Observation

Remarks: _____

C. Accident Record:

1. Increased _____ Decreased _____ No change _____

Remarks: _____

D. Pedestrian Control:

1. Aided _____ Hindered _____ No change _____

Remarks: _____

E. Parking:

1. Aided _____ Hindered _____ No change _____

Remarks: _____

VI ATTITUDE OF PUBLIC

A. Retail merchants:

1. Favorable _____ Passive _____ Strenuously object _____

Remarks: _____

B. Other business and professional men:

1. Favorable _____ Passive _____ Strenuously object _____

Remarks: _____

C. Motorists:

1. Favorable _____ Passive _____ Strenuously object _____

Remarks: _____

VII SIGNING FOR ONE-WAY SYSTEM

A. To what extent are signs used which pertain to one-way streets. Describe briefly:

IX. GENERAL OR DETAILED REMARKS OF VALUE (from experience with one-way system)