Gary tried out a restriction against left turns at several busy intersections and received such protest from the business men in all directions from the several intersections that the rule was abolished.

**TRAFFIC OBSTACLES**

_by Howard R. Olson, Engineer, Chicago Regional Planning Association_

There is nothing complicated or involved in the regional planning idea. It is merely a simple answer to a difficult problem that arises whenever similar or related work extends across political boundary lines. The condition that gave rise to the Chicago Regional Planning Association is the same that caused state highway commissions to be formed throughout our country, namely, a common problem too big for small political units, separated as they are, to handle effectively. The result desired was also the same: a co-ordinating influence to bring about unity in local plans and work with greater vision for future needs. The principle underlying the Chicago Regional Planning Association is a departure from that usually followed in metropolitan planning. It recognizes all officials whose specified duties are related to the work involved. It also includes public spirited citizens whose special knowledge or interest will be of value. These men are made consultants and directors of the planning and what special staff is required, work under their policies. The final result is that all phases of the plan receive immediate public support and are assured of realization.

Although the Chicago Regional Planning Association is concerned with all problems bearing upon community development, such as water supply, sanitation, rail, water and air transportation, parks and forest preserves and others, the most important and urgent is highway transportation. The common problem confronting the highway authorities in the many counties and towns grouped around the lower end of Lake Michigan can be divided into two parts: one, transforming their old horse-and-buggy age roads and streets into more efficient and safe carriers of motor vehicle traffic; and, two, planning every new road for modern automobile traffic with extra width for future widening when traffic conditions warrant.
The problem, of course, is at present more intense near the cities of Chicago, Hammond and Gary and likewise near all large populated centers. It does not differ, however, from that which exists in every town in Indiana, Illinois, Ohio or any other state. Motor transportation is just in its beginning. What is now true around our larger cities will soon be true in our smaller towns. The disease that blights the highways around our larger towns is now, farther out in the country, in its first stages. But, if the highway officials will prescribe the right kind of treatment now, doctor bills and surgical operations on their respective highways will not be half as expensive as later.

The term traffic obstacle in general usage is not limited in its meaning or very definite. In this discussion we will say that any regulation, any regulatory device or any physical feature existing in or along a street or highway that prevents or reduces the economical, free or safe operation of motor vehicles is a traffic obstacle.

Why should traffic obstacles be discussed at a meeting of Indiana highway officials and engineers? The most important reason is that decreasing the cost of operating the hundreds of thousands of Indiana motor cars is just as important as decreasing the cost of building and maintaining the highways over which they must travel. In order that we may gain a rough idea of the importance of operating costs in dollars and cents so that due regard may be given to improvements which will reduce those costs, let us make a few computations.

In 1925, Indiana registered over 650,000 motor vehicles. Assume that each traveled 5,000 miles during the year and the cost of operation for one mile was 10 cents per vehicle—an amount found by investigators of the Engineering Experiment Station of Iowa State College to be average. Multiply the three figures together and the total operating cost to automobile owners of Indiana figures out to be over $325,000,-000. Now let us suppose that if, throughout the state, all chuck holes and worn out pavements that break springs and shorten the life of an automobile, sharp jogs and many other traffic obstacles were repaired or removed the saving in operating costs would amount to one-tenth of a cent for each mile of travel. The total saving effected would total over $3,250,000.

It is, without question, important to construct and maintain high grade surfaces on our main thoroughfares. One of the objects of this paper is to briefly describe the methods followed by the highway authorities of the Chicago region to raise the quality of their existing paved highways and lower the operating costs.
The Committee on Highways of the Regional Planning Association includes highway officials of the federal government and states, counties and cities in the region. To that group of men, who direct the construction of many million dollars worth of roads each year, removing traffic obstacles is a most important service to the people of the region. It was for that reason that they inaugurated a series of traffic obstacle surveys to be made on the main traveled highways leading out of the city of Chicago to be followed by a campaign pointing out the defects and urging their removal.

Each survey is started at the loop district of Chicago and is carried outward, through the many suburban towns and into the country for a distance of at least 50 miles. From beginning to end roadway widths are recorded and logged along with bottle necks, sharp jogs and turns, rough pavements, unpaved car tracks, railroad grade crossings, narrow bridges and subways, dangerous sections of the road and any other conditions which slow down or stop traffic or increase the cost of traveling over it. From the notes taken the observer makes sketches of the more important obstacles and shows or describes means of improving each. Strip maps are also drawn showing diagrammatically the variation in widths of the roadway over them. The survey is then reviewed by the members of the committee, many of whom are familiar with local conditions along various parts of the route, and the procedure outlined to bring about the improvement of each obstacle. Meetings are arranged with the local authorities having jurisdiction over each section at which ways and means for effecting the work are decided upon. In every instance the many local officials, good road committees, commercial clubs and newspapers realize the value of the work and give their fullest cooperation in carrying out the details.

The experience of these surveys very often shows that the fullest use of our investment in street and highway width is not realized due to different standards or lack of standards used in the various jurisdictions or to the absence of a comprehensive plan for the entire route. The most striking example of such a condition exists on the Dixie Highway route extending south out of Chicago. On this heavily traveled thoroughfare a 6-mile stretch of 70 foot pavement is bottled up with a 40 foot throat at each end. It is easy to see that 30 feet of the 70 foot pavement gets very little travel. Plans are now under way, however, to remedy the condition.

The obstacles that exist on the more important highways of the region and the congestion resulting on days of heaviest
travel is almost unbelievable to anyone not having had the experience of being a part of that congestion. One mile an hour is often the average rate of speed. Typical of these highways and the conditions found on them is Indiana's state road number 43, called the Dunes Highway, which runs through Hammond, Whiting, East Chicago and Gary around the lower end of the lake to Michigan City. Any summer holiday or Sunday will see this popular road filled with unbroken lines of motor cars extending from the Illinois state line on the west to Michigan City on the east. So close are they, at times it is said, that when a highway policeman in Michigan City holds up his hand for traffic to stop, motorists 35 miles westward shove on their brakes and come to a standstill.

The cause for the congestion on this particular road is due to the interference caused by the following obstacles recorded in the survey recently made over it: shoulders of loose sand along the country section of the pavement too soft to support cars forced to stop on account of tire or engine trouble; 18 railroad grade crossings in the towns along the route; worn-out, bumpy pavement; sharp turns and corners; a large ornamental square that forces all cars to slow down to twist around its corners; an improperly timed stop-and-go traffic signal; street cars that cut down the width of the roadway; and, unpaved streetcar tracks. Each obstacle along this route plays its part in adding to the delay and collects its tax in increased operating cost. If usable shoulders were constructed along the country section of the pavement it would be improbable that congestion would be materially relieved. The biggest part of the delay is due to the obstacles existing in the towns along the route.

On other main traveled roads of the region the same general conditions exist. The causes of congestion lie at the gateways and in the towns instead of on the country highway. It is interesting to note how the location of traffic obstacles have changed since the invention of the motor car. Everyone can remember how the motorist heaved a sigh of relief when his automobile pulled itself out of the rural mud and bumped onto the city pavement. But now it is different. The sigh is of regret as he leaves the smooth country highway and strikes a narrow worn-out city street and is confronted with a slow-moving local traffic, numerous traffic regulations and unregulated stop-and-go signals.

The examples mentioned above show why it is good highway engineering and business to locate main highways around towns and cities and build adequate connections to the business centers. In the past, municipalities demanded of state highway commissioners and county highway departments that
paved roads be focused in to their business centers. The pendulum of public opinion, however, is now swinging in the other direction. Business men question the value received from through-traffic trade, but are unanimous in their opinion that anything that adds to the ever increasing, local traffic congestion is harmful to their business. To build highways around built up centers is exercising good foresight. Roads must be built to fit modern demands. The automobile which is being designed for faster speeds every year and which is increasing in numbers at an enormous rate, is now the ruling factor in highway location, design, construction and regulation.

In the interest of safety, economy and free movement of motor vehicles, the following conditions, classed as traffic obstacles, should be removed as soon as possible from existing highways and avoided in the building of new ones:

1. Local business districts or built up centers where traffic concentrates.
2. Jogs in alignment due to correction lines or other causes.
3. Blind curves, intersections and grade crossings. Standardized warning signs and signals effectively placed to serve under the most adverse conditions lessens the danger at these points.
4. Sharp curves not properly banked and widened.
5. Curved approaches to subways or underpasses, viaducts and bridges.
6. Railroad grade crossings. Until funds are available to eliminate grade crossings on the main highways, crossing planks should be maintained flush with the rails and approaching roadways.
7. Car line streets. Street cars back up and stop traffic and their roadway pavements are seldom in good condition.
9. Bottle-necks due to narrow roadways, bridges, viaducts, curves and subways or underpasses.
10. Short vertical curves on summits of hills.
11. Steep grades.
12. High crowns on roadways.
13. Slippery road surfaces.
14. Narrow or unusable road shoulders.
15. Sign, signal or light posts and buttons located in the center of intersections. They should be placed on the intersecting roadway center lines at the edge of the intersection.
17. Intersections with stop signs in all directions.
18. Roadways lacking painted centerlines or traffic lanes.
19. Unstandardized signs, signals and regulations. The Hoover Conference on Street and Highway Safety made up of representatives from the entire country has made great progress in this direction.

20. Route, warning and street signs ineffectively placed, out of range of driving lights, not illuminated or invisible at night. With the rapid increase in numbers of motor cars throughout the country, traffic regulation and control is becoming more necessary and exacting. Signs and signals are the means for making regulation and control possible, provided, they are so placed to be effective under the most adverse conditions—darkness and a wet or icy pavement. To test the value of a sign system, drive under the conditions mentioned and see if all signs are easily visible and all stops can be complied with without skidding past the point of danger.

ROADSIDE WEED CUTTING

By Joseph F. Crowe, Porter County Highway Superintendent.

The cutting of weeds along the roadside should be given serious attention by all County Highway Superintendents. If weeds are permitted to grow along the road we find that in a few years the drainage is seriously interfered with and the roads do not dry out as rapidly in the spring as they should. Roadside weeds are unsightly, hold snow in the winter time and cause unnecessary work in snow removal.

There is considerable disagreement among Highway Superintendents and farmers as to whose duty it is to see that the weeds along the roadside are cut. I am a farmer myself and believe that it is my duty to keep the weeds cut along the road in front of my farm. I take this stand for three reasons:

1. The law states that all land owners shall cut down or cause to be cut down, and destroyed, all weeds along the road bordering on their land.

2. It improves the appearance of any farm by having a roadside neat and clean.

3. It is not fair to the industrious farmer, who cleans his own roadside, for the county to spend some of its meager gravel road repair funds in cleaning up the roadside where the lazy farmer fails to do his duty.