

## CITY PLANNING AND DISTRIBUTION COSTS

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One of the foremost functions of practical city planning is to arrange a city so that its citizens can live and do business there with the maximum of comfort and the minimum of cost. No argument is necessary to convince even the most skeptical that a city which offers the most comforts and conveniences from a living and business standpoint, and at the same time at a minimum of cost, is the city that is going to grow rapidly in population and in wealth. As this is so obvious it seems incredible that cities, both large and small, have not made critical examinations of their plans with a view to reducing the cost of distributing food and other supplies.

In an address on transportation and city planning by Milo R. Maltbie, Public Service Commissioner, New York City, delivered at the recent city planning conference, he said: "The cost of living, so far as it is affected by the cost of food products, is to a considerable extent a problem of transportation. The fact has been repeatedly pointed out that food products may be selling at ridiculously low figures at the point of production, that the market may be glutted and that the producer may be barely able to make a profit; while at the same time, the cost to the consumer may be high. It is apparent that the means of bringing the producer and consumer together are defective if such conditions obtain, and while transportation is not the only cause, it plays an important part. What is true of food products is true of all materials. If the means of transporting raw material to the factory and manufactured goods from the factory to the consumer are inadequate, expensive and slow, the cost of the product will naturally reflect these conditions.

"It is essential, therefore, that in every plan of city development provision should be made for a prompt and cheap method of distribution. Thus far the railroads and steamship companies have assumed

that their function ended with the provision of terminal facilities somewhere within the boundaries of the city. Not infrequently these terminals are located upon the periphery of the city and usually considerably removed from the consumer and the factory, so that products have to be transhipped and hauled long distances by wagon or motor truck. Doubtless this is a fairly satisfactory method in a small city where the terminals are not far from any part of the city, but in metropolitan centers such a plan is quite unsatisfactory."

The popular and general conception of city planning is that it has to do with the planning of future cities or of additions to old ones only. This, however, is only one phase of the work, for city planning has to do with the past and the present as well as the future. Inasmuch as the present inadequate arrangements for moving supplies about within the cities were brought about through a past misconception of future requirements, the science of city planning can without doubt advance much more quickly than would otherwise be the case if the lessons taught by these past mistakes are carefully considered in planning for the present and the future. There is hardly a city where glaring defects in the street system are not seen at one point or at another, and yet it can be safely said that the lesson taught by these defects is unheeded in laying out new sections of the city or in correcting similar conditions which have not reached the point where it would be prohibitive either because of the great cost or because too many interests would have to be considered to hope of ever bringing about substantial changes.

City planning can be of very great use in correcting present-day inadequate conditions so as to serve better and more efficiently present-day needs. It is through this application that the science of city planning is going to receive its greatest momentum, because if people see that the application of this new science is actually bringing benefits to them, rather than solely to future generations, it will receive much more consideration at their hands.

If it can be conclusively demonstrated, too, that the net result of correctly applying this new science will beneficially affect the cost of living as well as make living more pleasant, no doubt people will not only take to city planning more kindly, but they will want to require its application. This is illustrated by the act recently passed by the state of Massachusetts, which provides that every city of the commonwealth and every town having a population of more than ten thousand

is directed to create a planning board, whose duty it shall be to make careful studies of the resources, possibilities and needs of the city or town.

Just so long as people live in individual homes detached one from the other, and cities continue to be built over considerable areas, just so long will there be the necessity for individual distribution. Either the people will have to go individually to the source of supply, or the supply will have to be distributed to the individual from this source. Therefore, three things are very essential if this cost of distribution is to be kept down to the lowest possible minimum; and as these are effective and efficient so likewise will the cost be affected. The source of supply or depot should be located so as to be readily accessible to the various inbringing lines of transportation; it should be also located in relation to the community it is to serve that a long haul will be eliminated; and the streets through which supplies will reach the ultimate consumers from the point they first arrive in the city should be so arranged and laid out that no time will be lost in needlessly round-about routes. Unfortunately, none of those essentials prevails in American cities and it is in correcting them that city planning can be of very great and growing value. In order to attain or even approach the ideal conditions, the street system should be given paramount attention.

As it is the purpose of this article to point out how city planning can be of material service in relieving present-day conditions, and as it is so obvious that it will be very difficult to change existing centers of distribution in cities, and as it is also obvious that no matter where these centers are located it will still be necessary to further distribute supplies, this article will be confined mainly to pointing out the relation of the streets to distribution, for in any event and in the final analysis, the streets must be used for distributing purposes between centers, and between centers and individual establishments, no matter what the vehicle or motive power, and no matter whether the distribution takes place on the surface, above the surface, or below the surface. Moreover, no method of locating distribution centers can be outlined that could be applied to any and every city because each city has its own local conditions that determine such locations, whereas general street considerations can be laid down which could be applied in some measure to almost any city.

An ideal street system consists of streets laid out in such a way as to afford the most direct connections between centers for the transportation of people and the distribution of supplies; arranged in such a manner as to facilitate traffic going on them, over them, or under them; paved so as to offer the least resistance to travel, so that wear and tear on roadway and vehicle will be reduced as much as possible, so that sub-surface repairs can be easily made, thus avoiding interruptions to traffic; and so laid out that no obstructions will exist such as heavy grades, or the grade crossings of railroads. By arrangement of streets is meant a suitable and convenient network and a proper proportion of roadway and sidewalks so as to accommodate their respective volumes of traffic and so that no street area will be wasted.

A study of the street system of any city, particularly in this country, will no doubt show that parts of the street system are defective in some or all of the features noted above. It will also no doubt be found that little or no effort is being made to correct these defects and that little heed is paid to the lessons they should teach in laying out and paving the new streets made necessary by the growth and extension of the city. One reason for this, no doubt, is that the relation between the cost of distribution and the street system is not understood, not only by the people using the streets, but also by many municipal engineers and municipal officers.

It seems to be true of streets as of other things, that their fundamental province is often forgotten. The fundamental purpose of a street is to provide a means of communication between different sections of a city and between one city or town and another city or town. Its primary purpose is not to provide space for light, air and sun for surrounding buildings; or a playground for the children. Both of these purposes can be better provided without resorting to laying out and building streets.

Again the idea does not seem to prevail that cities are permanent, especially their street systems. If it did, grades would be cut down or eliminated; narrow roadways would be widened; grade crossings would be removed by elevating or depressing railroad tracks; rough and uneven pavements would be replaced by smooth and durable pavements. When it is considered that all of these obstacles to speedy travel might be eliminated, it does not seem that those responsible realize that a city is a permanent institution, rather than a temporary affair.

It seems incredible that cities have not studied their street systems from the viewpoint of making them better adapted to their primary purposes. It seems incredible that more is not known about the way streets are being used—that is, the quantity, the character and the weight of vehicles and the speed and size of the same, together with the various routes used between the different distribution centers and the number of people using the sidewalks. If obtained in the right manner, such information can be had at a low cost. Such information would be invaluable in economically determining the proper kind of pavement to put down, both from the standpoint of facilitating traffic as well as from the standpoint of paving durability. How often pavements are put down without considering the traffic they are to bear! And how quickly these pavements disintegrate to the detriment of the traffic using them and to the city paying the bill! Streets are often laid out with arbitrary widths of roadway and sidewalk, so that the roadway is congested while the sidewalks are only half used. A knowledge of the size of the traffic units and their speed, together with the number of people using the walks, would give a better arrangement of the street and a freer movement of traffic. A knowledge of the routes that traffic takes in going from one center of the city to another will oftentimes show that traffic will go a considerable distance out of the way to avoid a block of bad pavement, a congested piece of roadway or an unfavorable grade. It will also show that perhaps the present street system does not provide very direct routes between centers of distribution and that this might be easily overcome by extending a street or cutting a new street through.

Thus it will be seen that a knowledge of what is taking place on the streets of a city, so far as traffic movements are concerned, is vitally necessary in order to cut down distribution costs and yet there are very few cities that have any adequate information whatever on this subject.

The conditions brought about through not applying the science of city planning in the laying out and building up of cities have necessitated the police regulation of street traffic. This regulation of street traffic also has an important bearing on distribution costs. It is commonly believed that the purpose of police regulation is merely to see that traffic proceeds in a safe manner. The general idea does not prevail that traffic regulations should also aim to facilitate traffic as well as to have it proceed safely. Traffic regulations should result

from a close and detailed study of the conditions. Correct conclusions can only be reached when a knowledge of all the facts involved is at hand. For instance, all of the larger cities contain many street intersections where all kinds of street traffic are heavy—pedestrian, car, and vehicular; and when it is considered that vehicles alone at an ordinary right-angled street intersection can proceed across the intersection in twelve different directions, and then that street cars and pedestrians crossing in several directions are introduced as well, the importance of even this part of street traffic regulations will be appreciated. A proper knowledge of the volume of traffic crossing the various ways, together with the routes taken in approaching and leaving the intersections, may show very conclusively that vehicles and even cars might take other routes. It may be that poor paving narrow streets, etc., throw a large volume of traffic through a busy intersection where if these conditions did not prevail vehicles would take more direct routes to the advantage of everyone. A congested intersection not only shows up all kinds of traffic at the intersection itself, but also causes vehicles to “back up” in every direction from the intersection, thus slowing down traffic along the length of the street for a considerable distance, thereby limiting the volume of traffic that the street can accommodate.

The cities of this country do not know yet what it means to have street traffic efficiently regulated, the paramount reason being that this has never seemed to be of enough importance for engineers to give it attention. Surely it is capable of engineering treatment and anything so economically important as the cutting down of the time with which vehicles can proceed through the streets is worthy of attention.

A great deal has been said and written on the subject of providing and maintaining good roads for the farmer, so that supplies can more economically be transported to the railroads, and what a beneficial effect this will have in lowering the cost of living! But very little has been said on the same subject in making the streets of the cities better adapted to their purposes.

The first distribution point in the cities is at the railroad yards or wharves. Here are received most of the supplies. They are then distributed usually by truck, through the various streets. In large cities most of the supplies should be distributed from these points to the next point of distribution—the retailer—by rail direct. If the

streets are narrow and crooked, and the grades heavy or other hindrances exist, the cost of distribution is unnecessarily increased. The character of the city plan is, therefore, of the utmost importance.

In brief, it may be said that a city may be planned to reduce the costs of distribution and therefore the cost of living in the following ways: (1) By a proper location of main depots well related to rail and water lines; (2) by a convenient and orderly location of streets connecting the main centers of distribution with each other and by providing a serviceable system of secondary streets so that every part of the city may be easily and quickly reached from these main centers; (3) by adequate street widths and a skilful and economical subdivision of any given width into roadway and sidewalks; (4) by a careful study of street grades and the elimination or reduction of unnecessarily heavy ones; (5) by raising the standard of street pavement and the use of more discrimination in the paving of streets so as to fit them for the kind of traffic passing over them; (6) by the separation of the grades of streets for ordinary vehicles from the grades of railroads crossing the same; (7) by the compilation and use in city planning and replanning of accurate data showing the quantity, character and weight of vehicles and the speed and size of the same, together with the various routes used between the different distributing centers; (8) by the better utilization of the country trolley and the city street car lines. In all these ways and in others closely related to them the planning and replanning of towns and cities may be made an effective means in reducing the cost of living.