

Designating the Urban Interstates Urban Design Principles

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Urban Design Principles

To help the authorities, Interregional Highways included a 16-page section on "Principles of Route Selection in Cities" and followed it with a 4-page section on "Illustrations of Principles of Route Selection." The principles (quoted here with minimal ellipses for ease of reading) were:

Connection with city approach routes: For the service of interregional traffic and other traffic bound in and out of the city to and from exterior points, the problem is one of convenient collection and delivery. The State highway department should have the primary responsibility of determining the detailed location of routes leading to the city, as it will have the essential knowledge of origins and destinations of the traffic moving on the adjacent rural sections of the routes. Once the routes enter the environs of the city, however, they become a part of the sum total of urban transportation facilities, and as such must bear a proper relation in location and character to other parts of the street system. In addition to the traffic to and from exterior points, they will carry a heavy flow of intraurban movement of which city authorities will have knowledge or will be best able to measure or predict.

Penetration of city: By actual time studies it is demonstrated that through travelers would be saved time and annoyance and much of the cost of stopping and starting at numerous street intersections if convenient routes were provided around all cities. But the common impression that provision of such routes would constitute invariably a complete, or even a substantially adequate solution of the highway problem at cities is not well-founded. From the standpoint of the cities it fails as a solution of the most serious aspects of the problem. The root of the fallacy, so far as the rural highways are concerned, lies in the fact that on main highways at the approaches to any city, especially the larger ones, a very large part of the traffic originates in or is destined to the city itself. It cannot be bypassed. Among the smaller cities differences of geographic location and intercity relationship may somewhat disturb the rule. It nevertheless remains true, and among larger cities almost without exception, that the larger the city the larger will be the share of the traffic on the approach highways that has its origin or destination in the city. Furthermore, of this city-concerned traffic, the largest single element originates in or is destined to the business center of the city.

Location internally through wedges of undeveloped land: [The] improvement of highways at urban centers has in the past stimulated outward extension of city growth, and has left wedges of relatively undeveloped land between these ribbons of development along the main highways entering the city. Whatever their cause, existing wedges of vacant land may offer the best possible locations for city-entering routes of the interregional system. So placed, the routes may often be extended far into the city before they encounter the greater difficulties of urban location. In choosing these locations for the arterial routes, however, it should be recognized that the undeveloped lands which lie so favorably for highway purposes also present opportunities equally favorable for other purposes of city planning. Properly preserved and developed, they can become the needed parks and playgrounds for residents of adjacent populated areas. Alternatively, they can be developed as new residential communities in the modern manner, unhampered by previous commitment to the traditional rectangular street plan. Wherever possible, plans for all uses of the land should be jointly developed and acquisition for all purposes of public use should proceed simultaneously. It will be at once apparent, however, that if the improvement of main highways in the past has resulted in the stringing out of city growth along them, the superior improvement contemplated for the new arterial routes would have the same effect in exaggerated degree. The improvement of the interregional system should be so designed as to discourage ribbon development and the unwise subdivision of large tracts of suburban land. Special preventive measures will prove helpful in this connection. One of these measures . . . would be to provide additional circumferential routes . . . and then, as the interramp spaces widen, to add branches to the radial arteries, thus encouraging uniform development of whole areas rather than ribbon-like settlement along the radials. Another, which involves no principle of route location, is mentioned here only because of its bearing upon city development. It is the control and limitation

of access to the arterial routes. Unlimited access to the existing main highways has undoubtedly encouraged the outward extension of settlement along them. Per contract, the denial of access to the new arterial highways for a substantial outward distance beyond any desired points on these highways would probably discourage the creeping of settlement along them much beyond the selected points, and this is endorsed by the committee in principle.

Circumferential and distribution routes: Although . . . a large part of the traffic on interregional routes approaching the larger cities will generally have its origins and destinations in the center of the city, substantial fractions will consist of traffic bound to and from other quarters of the city. Another portion-its volume depending usually upon the size of the city in relation to the sizes of other nearby cities-will consist of traffic bound past the city. To serve this traffic bound to or from points other than the center of the city, there is need of routes which avoid the business center. Such routes should generally follow circumferential courses around the city, passing either through adjacent suburban areas or through the outer and less congested sections of the city proper. Generally, such routes can be so located as to serve both as arteries for the conveyance of through traffic around the city between various approach highways and as distribution routes for the movement of traffic with local origins and destinations to and from the various quarters of the city. In the larger cities more than one circumferential route may be needed. A series of them may be provided to form inner and outer belts, some possibly within the city itself, others without. In the largest cities one such route may be required as a distributor of traffic about the business center.

Relation to traffic-generating foci and terminals: Railway terminals, both passenger and freight, wharves and docks and airports, generate large volumes of street and highway traffic. Location of the interregional routes at cities-both the city-penetrating main routes and the circumferential or distribution routes-should be so placed as to give convenient express service to these various major traffic-generating foci within and in the environs of the city, and also to the business center of the city, the wholesale produce market, main industrial areas, principal residential sections, new housing developments, and the city parks, stadium, baseball park, and other sports areas. Location of the routes should be determined in relation to such foci in the positions where they are planned or are likely to be in the future and not where they are at present, if change is reasonably to be expected. Thus the closest possible cooperation is needed between highway, housing, and city planning authorities, railroad, motorbus, and truck interests, air transport and airport officials, and any other agencies, groups and interests that may be in a position to exert a determining influence upon the future pattern and development of the city. Moreover, the highways themselves should have their own adequate terminal facilities-facilities hitherto sadly lacking. There are two general classes of highway terminals-those designed for the daily or overnight accommodation of private vehicles (principally passenger cars) with destinations at the center of the city, and those serving the organized transportation business of bus and truck lines.

Relation to other transportation media: At cities, especially, it is important that the location of interregional routes be so chosen as to permit and encourage a desirable coordination of highway transportation with rail, water, and air transportation. Incidentally, it may be mentioned that opportunities for joint use of new structures by the interregional routes and mainline railroads should not be neglected where they may appear. [It] is at the cities-terminals alike for the interregional routes and all other transportation media-that the closest attention should be paid to the possibilities of common location, and also to such location of the highways as will best and most conveniently serve to promote their use in proper coordination with other transportation means. In many cities the surface location of railways remains as one of the more acute problems facing the city planner. Instead of attacking this problem piecemeal by elimination of grade crossings one or two at a time, a practice which tends merely to ameliorate a generally unsatisfactory condition, it would be far better if it were dealt with in accordance with a plan for the complete and permanent insulation of the railway. Since the interregional routes and other express highways require, in some degree, a similar insulation, a plan for the common location of the two facilities might offer not only the advantage of a minimum obstruction of cross streets but also a substantial possibility of reducing the total costs of achieving the two purposes, particularly the right-of-way element of such costs.

Relation to contemplated developments requiring large tracts of land: Wherever it is possible to do so, the location of interregional routes in cities should be considered simultaneously with the projected location of new housing developments, city centers, parks, greenbelts, and other contemplated major changes in the existing city pattern that call for the acquisition of land in large tracts. This is necessary for the avoidance of conflicts in plans; it is

necessary from the standpoint of adequate transportation accommodation; and it is highly desirable from the viewpoint of common land acquisition and financing.

Minimization of street intersections: The frequency of street intersections is the cause of excessive stops and starts in cities. Every intersection also introduces substantial elements of delay and congestion. Street intersections also involve the hazard of accidents. Reduction of the number of intersections presents problems in the design of arterial routes and the control of traffic flow more difficult of solution than similar problems encountered on rural highways. One solution is to eliminate intersections by means of grade separations. They involve expensive construction, however. A judicious choice of location to minimize the number of intersections is one means of avoiding this expense. Wherever it is possible to do so with satisfactory accommodation of the local arterial traffic, arterial routes should enter the city at points from which it is possible to proceed as near as desirable to the city center and thence to connection with the continuing rural routes at the opposite side of the city, by locations parallel to one or the other direction of the normal rectangular street plan. The valley of a small stream penetrating a city may offer excellent opportunity for the location of an intersection-free artery. In many case such small valleys exist in a wholly undeveloped state. In others they are the locations of a very low order of development-neighborhoods of cheap, run-down houses and shacks, abject poverty, squalor, and filth. Where these conditions exist, steep declines into the valley have generally made the site unfavorable for the development of high-class improvements. Other locations favorable for the reduction or simplification of intersections on the arterial routes may be found within or along the boundaries of parks and other large tracts of city or institutional property that interrupt the regular rectangular street plan. After an interregional route has been carefully located so as to minimize the number of cross routes, a considerable number will still exist. The grade of all that cannot be avoided should then be separated.

Relation to urban planning: It should be borne in mind that the interregional routes, from the standpoint of the city, will provide only a partial facility for movement of the city's traffic. That part, whether great or small, should be determined in location and designed in character to be a consistent and useful part of the entire urban transportation plan. As previously suggested, the entire plan should be conceived in relation to a desirable pattern of future city development. The interregional routes, however they are located, will tend to be a powerful influence in shaping the city. For this reason they should be located so as to promote a desirable development or at least to support a natural development rather than to retard or to distort the evolution of the city. In favorable locations, the new facilities, which as a matter of course should be designed for long life, will become more and more useful as time passes; improperly located, they will become more and more of an encumbrance to the city's functions and an all too durable reminder of planning that was bad. It is very important, therefore, that the interregional routes within cities and their immediate environs shall be made part of the planned development of other city streets and the probable or planned development of the cities themselves. In many cities there are city planning commissions that . . . have reached quite definite decisions regarding many of the elements that will affect the location of interregional highways in and near the city. Usually the decisions of the planning commission have grown out of studies of the city as it is, and as the commission desires it to be. And these studies will usually afford the principal data and bases for agreement upon the general locations of the interregional routes. It is especially desirable that the agreement have the full concurrence of housing and airport authorities and other public agencies that may be concerned with the acquisition of large tracts of land in and near the city. This is desirable in order that the routes may be properly located for adequate service of the developments planned, and that the lands needed for the highways and the new facilities and developments they are designed to serve may be mutually agreed upon and simultaneously and cooperatively acquired.
