

department. It might be well, again, to point out that the organization of the function and its administration are particularly applicable to those States in which the acquisition of fee title is not legally possible and rights-of-way must be acquired upon the basis of the effect of a specific improvement upon abutting property.

### CONCLUSIONS

The present day type of highway

improvement has made mandatory the recognition of the right-of-way function, if for no other reason than from the standpoint of economics. Integration with design through the use of a straight line, technical organization, and having the basic purpose of presenting a completed project for receipt of bids, complete both as to plans and right-of-way acquisition, would appear to afford a solution to a problem, the cost of which is rapidly reaching an economic maximum.

## HOUSING DEVELOPMENT AND EXPRESS HIGHWAYS

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Punching practically any express highway through one of our cities is pretty certain to bring up housing questions. You are quite likely to find rights-of-way through residential areas relatively cheap to acquire. Extensive clearance of residential structures appears to be inevitably tied up with getting rights-of-way you can afford and with working out the approach systems at access points. But clearance means families to be rehoused and, as the routes approach central areas, they most likely will pass through slums and blighted districts where rents and family incomes are correspondingly low. The result is that you then have much more than a right-of-way problem on your hands. At this point the housing people come up with an equal or even more critical problem.

An express highway route running for any considerable distance is likely to involve clearance equivalent to a number of square blocks. In that respect, it would be roughly comparable to a good sized urban redevelopment project. As far as the families in the home to be torn

down are concerned, there would be no difference. Practically all proposed Federal legislation for urban redevelopment contains provisions relating to the rehousing of displaced families. Just as a matter of information - as an expression of attitude on this question - it is interesting to look at the provisions of the Taft-Ellender-Wagner National Housing Commission Bill - S.866 of the 80th Congress. Section 802 (3) of Title VIII (the portion of the Bill dealing with land assembly for urban redevelopment) provides that, before Federal financial aid shall be given to a project:

"...there be a feasible method for the temporary relocation of families displaced from the project area, and that there are available or are being provided, in the project area or in other areas not less desirable in regard to public utilities and public and commercial facilities and at rents or prices within the financial means of the families displaced from the project area, decent, safe, and sanitary dwellings equal in number to the number of such displaced families."

I have no idea of trying here to tell you how to solve this problem. We all know that it is a tough one at any time; in today's housing shortage it is likely to be all but impossible. Even though new housing construction is going forward in great volume, it is not removing the obstacles in your work. New housing construction today is generally at the middle and higher price levels, probably much higher price levels than many or most of the families in your rights-of-way can afford to pay. And evidence indicates that today's new construction is not opening up many vacancies in existing units. Undoubling and new family growth seem to absorb those.

This is really a problem which must be worked out locally, including the determination of when the time is ripe for going ahead and the development of a method for handling it. When the times do come, city by city, for going ahead with your operations, relocation of families will still be a job calling for a lot of "know-how" and one that creates an opportunity for mutually beneficial cooperation between housing and highway technicians.

Those who have undertaken large-scale clearance operations for housing developments, whether by private enterprise or public authorities, have found it necessary to take an active part in relocation, in finding places to which the displaced families can move and in helping many of them to make their moves. A considerable body of experience has been built up which you should be able to tap. There is likely to be a housing authority in your city which has had experience in relocation or knows where to get experienced help. If there isn't any authority there, quite likely there will be some not very far away that can help in working out your problems. I am sure they will feel it a privilege

to work with you in advance appraisals of relocation prospects, in working out plans, and in the actual doing of the job.

The other side of the problem involves the type of residential development to be planned along the new rights-of-way in central areas. I have seen sketches of express highways and have heard proposals that might suggest high-quality apartment development along the routes as a means of recapturing the high costs of acquiring them. I admit this is an intriguing idea, seeming to have great possibilities because of the wide open spaces along the highway, with consequent light and air, and the obvious opportunities they seem to present for combining the conveniences of apartment living with ready escape to the amenities of the open country. The prospect, however, should be examined with considerable care. In the first place, that high-rental type of housing development draws from a very narrow segment of the total housing market. The fact is that it is a common error, indulged in by many besides highway planners, to overestimate the size of the upper price brackets in the housing market. Secondly, only a portion of that narrow market will find those particular locations suited to their needs or desires. So, whenever such proposals are under consideration, it would be very wise to resort to expert housing market analysis and competent real estate advice.

In moving outside built-up central areas, we confront the fact that the suburbs and the areas beyond are places where your rights-of-way may easily tangle with new housing development. A major proportion of new houses is now being built outside of towns - not only outside of the central cities but also outside the suburban communities. New subdivisions are being platted steadily and local street

and building patterns are being laid down. Rights-of-way for express highways should be established as rapidly as possible before new building fills them up or the new street systems set conditions that may require future adjustment to the expressways which will be burdensome, wasteful, and costly for everyone concerned. Given established routes and master plans for the highways, local subdivision control or project planning by developers can be applied in your interests as well as those of the locality, even though actual construction of your express routes may not be possible for some time.

This advance planning and official laying down of your routes, even though actual construction may be some time in the future, are of major importance, not only in housing in a broad sense, but to community development generally.

The question which I believe has larger significance in this discussion is the possibility of properly relating highway building and housing operations to make sense out of urban and suburban developments. I assume that you expect the construction of express highways to be a real thing in the coming years. I know that we hope and believe that there will be a continuing high volume of housing construction. Although estimates of housing needs vary, there is sufficient agreement to indicate that urban construction over the next decade or so to meet those needs will produce a volume of new housing equivalent to about one-third our present urban supply. That amount of new construction can reshape the form and character of urban areas and radically modify present situations in local government and finance, and in daily work and family life. If well located, it can be a boon and a blessing; if not well located, it can produce new and insupportable burdens or aggravate present problems past the

crisis point.

So there are very serious questions involved in determining where this new housing is to go. In a broad sense, it will go where people want it to go. It will be the result of choices and decisions by thousands of builders - some large, some small, some by individuals building for themselves. Some housing will go within our presently built-up areas for the people who want to live near the center of things; but there is much to indicate that, with our present means of easy transportation and consequent fluidity, the strongest desire of city people is to disperse, even, in many cases, at some sacrifice to convenience of movement.

It seems to many of us that the development of express highway systems, particularly as they go into and through central city areas, will give added impetus to this trend toward dispersion. As it becomes easier to get from the suburbs or the country to the center of things - for business, work, shopping, and amusement - more people will seek the space and amenities of living to be found in the outlying areas. And the suburban development can be extended farther out, through express highways, with actual savings in travel time to the cities.

Others, as we know, take an opposite view; they believe that, given easier access to the country, people will reverse their outward movement for living space. I don't believe there is any question but that this will be true in some degree, but I do not believe that it will represent the dominant trend. It seems that a much more sound and sensible course would be to recognize that the automobile is an instrument of dispersion and that every improvement in highways and highway systems makes it just that much more so.

Indications are cropping up here and there of what high speed access

into cities will mean. I have been told that express highways built between Detroit and Willow Run have had a tremendous effect in pulling new housing construction out into previously undeveloped areas. Here in Washington we have the great Parkfairfax and Fairlington developments along the Shirley Highway, in the success of which the rapid and easy transportation to town is an important factor. There are now indications that an even larger development will go forward several miles farther out along the same highway but nearer in time to downtown Washington than many parts of the District itself. In another direction, the prices of land almost 20 miles out but nearer the route of a proposed expressway also are reported to be rising. And so on over the country as express highway plans shape up and go under construction.

All of our cities are evidence of the enormous influence highways have on where housing is built and on the consequent form of urban development. Once, when railways were the backbone of local transportation, the terms "central city" and "suburbs" had definite community meanings. The city was city and the towns were towns; you could see where each began and ended. With the advent of the automobile and the steady improvement of main traffic arteries, housing began to spread out along those arteries without break and without well-defined community character or focus. Today, the development in most urban areas can be diagrammed in something resembling a star shape, forking out from the central city along the main highways, and with pretty much random scattering of a variety of land use types in between them. The overall result is the well named "suburban sprawl."

This sprawl form of housing development brings many problems in its wake. There is no need of dis-

cussing them in any detail, for they are apparent to practically everyone. To mention only a few: increased cost in the provision of streets, public utilities, schools, and other community facilities; frequently, because of cost, absence of adequate sanitary and protective services; too rapid obsolescence and depreciation, with a consequent drain on investments, all resulting from inadequate planning, faulty land use, and the absence of standards and reasonable controls. Of course all of these do not occur everywhere, but in practically every locality one or more of them have become matters of serious concern.

Undoubtedly a contributing factor to this sprawl has been the fact that highways have been so continuously accessible to traffic. This in turn has encouraged the capitalization of highway frontage for business purposes, to such an extent that our major highway routes have taken on a dual character - avenues of heavy traffic flow and ribbons of largely commercial development. But express highways will be different. They will be planned to serve one purpose - to facilitate traffic movement. To that end the number of access points will be limited. Doing so will improve and speed up traffic flow; it may not help to relieve this trend toward unorganized sprawl. If access is possible at frequent intervals so that only a short hitch is necessary along a collector street to enter the express route, I am afraid housing development will stretch out along the new highways in about the same way it now does along the old-style major highways leading out of cities.

It seems to me that there are feasible alternatives if full advantage is taken of the opportunities express routes offer. It should be possible to work out plans over an area which will accomplish all that you are seeking and promote what we are seeking - namely more rational

grouping of housing development. The net result would be to counteract recent trends toward disorganization and confusion.

I mentioned the individual community character of suburbs which sprang up around railways before the automobile came along. These communities grew up, of course, because the trains stopped only at certain intervals, actually not very far apart but far enough apart to cause the communities to grow as separate entities. Wouldn't it be possible for expressways to be worked out so that they would do in this respect what the railroads did yesterday? It seems to me that they might, and also do it better. After all, railroads were few in number and, for many reasons, were fairly arbitrary in their routes. We now have a much more flexible instrument. We should be able to have both primary and secondary expressways and to design them into a network of easy and rapid traffic movement throughout an urban region, with relatively wide spacing of access points that could be the focal points around which residential development could organize itself.

Recently I saw such a plan, in which a few primary expressways led through and out of the particular city, while roughly concentric secondary express routes tied the main routes together at well spaced intervals. The access points occurred at intervals of two or three miles and the overall result was a sense of potential form for the entire urban area. From the housing point of view, we would welcome the opportunities thus given for localizing traffic within developed areas and channeling it in definite directions toward major routes. By such coordinated planning, both traffic movement and housing development can be bettered.

The thing I am essentially driving at is that the express highway, potentially, can be a major deter-

minant of where new housing will go and what kind of urban development will be possible. The house builder or large project developer casts a very keen eye on transportation opportunities when selecting sites for his operations. But his is not usually the initial decision. I might cite one exception that proves the rule: the decision of the Van Sweringen brothers in initiating their Shaker Heights development to build a rapid transit line to downtown Cleveland. In that case transportation planning and highway planning went hand in hand. Although express highway planning and residential development may not enjoy this very close relationship as a general practice, there is a need for highways to be more than a means for getting from one place to another; for their planning to be equally concerned with the life-in-place that it conditions in order to avoid freezing development in undesirable land-use patterns.

Furthermore, decisions on housing development are made by many people acting independently, not by a few people working in concert as in the case of highway planning. Our land use regulations, such as zoning and subdivision control, can very definitely influence the manner in which land is developed for housing but they are weak in determining what land will be used and when. Perhaps it would be much better to take full advantage of the positive tools we might have, such as express highways, to guide the form of development into sensible channels than to rely on the negative and restrictive police-power type of control.

In this brief paper I have pointed out only a few of the relationships between express highway and housing development and I have tried to make clear that the answers to even these questions are not all known. Also I have endeavored to define an area of common interest where coop-

eration, locally and Federally, might be mutually advantageous. The name Highway Research Board obviously suggests investigation and exploration; locally, express highway builders, planning authorities, housing developers, and other interested groups might together turn

out both ideas and accomplishments pointing toward form and order as against potential disorder and confusion in patterns of city growth and expansion. The opportunities seem tremendous; I hope they can be captured.

## ESTIMATING DAMAGE CAUSED BY LOSS OF ACCESS RIGHTS

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Estimating damages caused by the loss of access rights presents problems not ordinarily encountered in estimating the value of properties in their entirety.

Evaluation is not an exact science. The economic laws that govern value admit of too numerous exceptions. What is right today may be wrong tomorrow; what applies here does not necessarily apply elsewhere.

It is recognized that value is largely dependent on judgment, but the differences in judgment must not be due to a misunderstanding of the theories that govern value or of the formulas that are used in estimating them.

Much has been written on the theory of appraising but little on the application of these theories. It is practical appraising in which we are interested. However, a knowledge of the theories that govern value is necessary, so it is well that we hastily review some of the more important ones in order that there be no misunderstanding when reference is made thereto.

The purpose of an appraisal is the determination of an action. As the action to be taken by a right-of-way division is most generally

the purchase of a property, the value to be estimated can be based upon but one concept of value, that is, market value or value in exchange, and our courts of equity have so held.

Property is the right of use. Anything that conveys rights and can be held under separate ownership is property. It is these rights which give it value and which we appraise. Destroy these rights and you destroy value; destroy value and you create damage. A damage is, a reparation in money for an injury sustained.

These rights to have value must first have utility. Utility is the capacity to satisfy human wants. However, the number of the wants which a property is capable of satisfying and the importance of these wants do not set value.

Value is determined by the intensity of human desire for unsatisfied wants and is controlled by the relation of the demand to the available supply. When demand exceeds supply you have value and when supply exceeds demand you have no value.

To have the capacity to satisfy human wants, and thus have utility,