

as virulent a form of trafficitis as New York. There is a germ of truth in this comment I think; if I am not mistaken there is also involved a principle. The principle has to do with the ratios of land and building bulk to traffic and transportation facilities of the various types. The zoning ordinance of New York City permits, in commercial zoning districts, sufficient building volume to accommodate 375 million people. You may lay that one squarely across the door of the city planners. That is where it properly belongs. But the rest of the citizens too share some respon-

sibility for the absurdity.

General or overall planning, and planning of the important fields which I call "specialized" for want of a more descriptive term, have shown some signs of getting together, of recognition that there are both necessity and mutual benefits to be gained from "combined operations" in research and in local, state, and federal programs concerned with urban communities and their development. Let us have more teamwork so that, recalling Ben Franklin's sage remark, by hanging together, we can do our bit in preventing the cities from hanging themselves separately.

## STATE ADMINISTRATION OF THE HIGHWAY RIGHT-OF-WAY FUNCTION

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Within the past decade highway administrators have been forced to change their concepts of design fundamentals in order to meet the needs of present day traffic. The time has arrived, and in many instances passed, when these concepts must include a properly conceived, organized, and efficiently administered right-of-way function.

This function may be organized along the lines of a somewhat independent real estate unit; it may be administered as a legal unit, or it may be an integral part of highway design, and particularly is this true if only easement title legally may be taken upon the basis of a set of plans for a specific highway improvement.

A few of the States have chosen the first method of organization and were probably able to do so by virtue of adequate bond issues, legislative grants, current revenues,

or a combination thereof, but reinforced by laws granting the broad powers of excess condemnation and disposal of surpluses, a right to rent or lease and with few restrictions placed on the widths of rights-of-way which might be acquired. Certain other States not quite so generously endowed with funds but whose legal powers were reasonably adequate, have chosen to administer this function along legal lines, no doubt on the premise that property acquisition is, fundamentally, concerned with law.

A majority of the States, being haunted both by lack of funds and wholly inadequate laws, have been forced to adopt a different concept of the function which might be defined as a specialized unit of highway design, based upon engineering, property economics, and law.

Irrespective of how this function is conceived and operated in the

several States, one thing is certain; it can no longer remain the step-child of the overall highway organization.

The speeds, volumes, and the problems of distribution and collection of traffic have forced into the discard previously recognized and accepted standards of highway design. We now think in terms of drainage systems, minimum curvatures and passing sight distances, divided lanes, separation of intersecting grades; in short, a facility designed for the next twenty years and at the end of that time, capable of expansion for a similar period.

In order properly to meet these requirements, aerial photography for preliminary studies, origin and destination traffic studies, geometrics of design, soils analyses, and many other factors have been developed.

These changes in design principles require even more far reaching changes in right-of-way procedure. The problem ceases to be one of bargaining for a more or less uniform strip of additional right-of-way and instead requires an intimate knowledge of design and construction fundamentals, property economics, and the ability to secure and apply broad interpretations of inadequate statutes from the legal advisors of the Department. Highway administrators quickly recognized the importance of the new concept of highway design and accorded it its proper functional status, but the acquisition of rights-of-way is still looked upon as a necessary evil; an operation which delays the processing of completed plans to sale status, or if the project is sold without completed right-of-way clearance, invariably ties up contract progress. Yet little has been done to rectify this condition.

The time has come to recognize that from an economic standpoint alone, any function, the cost of which runs from 30 to 300 percent

of the cost of the basic facility of which it is a part, merits recognition of the highest order.

It is likewise time to realize its significance in the light of the public relations. The first direct contact with the public is made in the acquisition of rights-of-way and in a good many cases, the last contact, in bringing to conclusion necessary court actions and securing reimbursement for property expenditures from Public Roads Administration.

One solution only seems logical and that is to recognize the right-of-way function as a basic unit of highway design and to integrate its technical, economic, and legal fundamentals into the design picture, beginning with the preparation of the engineering report and carrying its varied activities through to the completion of the plans, and finally the construction of the project. Full utilization of the function, in design, is possible only when its fundamentals are predicated upon design and construction experience, since only upon that basis may knowledge of property economics and law intelligently be applied.

A prerequisite to this integration is complete acceptance upon the part of design and construction engineers of the fact that these principles must be applied concurrently with the preparation of plans and that later, when the project is under contract, change orders cannot be initiated without first checking the legal conditions under which rights-of-way were acquired.

One may well ask for an illustration of the application of the fundamentals of this function. From the standpoint of design, the provision of drainage facilities in a highway plan may appear relatively simple, yet from a right-of-way viewpoint, easily proven economically and legally unsound. An increase in volume, or acceleration

of storm water, are legally compensable, if damage results therefrom. Such conditions are frequently overlooked, or discovered when it is too late to change the plans, or, if the project is already under contract, with a resulting cost entirely out of proportion.

The same observation may be applied to the design of driveway access to abutting property. Excessive grades, improperly selected locations, surfacing inferior to that which previously existed, also increase property costs, create ill will and bring about frequent law suits.

The increasing of vertical and horizontal curvature, along with changes in grade line, quickly pass from the technical to the economic aspect of right-of-way acquisition and one of the most costly phases arises from building relocations, costly in money and contract delays.

Right-of-way requirements for projects involving the flattening of curvature, ditch widening, or the replacing of narrow structures merit the same careful consideration as for a major highway improvement.

The application of property economics, illustrated in the preparation of cost analyses for the expansion of an existing facility into a specific type and design of highway improvement and its comparison with that of an entirely new parallel location. These analyses, combined with those of construction costs, provides the ground work for the final determination of line location.

The legal phase of the function, by rights, should be along negative lines; instead, it has assumed a positive character since in few States have statutory laws kept pace with highway design, and the courts, jealously and rightly, tend to protect private property, with the end result that property costs are approaching an economic maximum. There is a further tendency on the part of the courts to require justification of the design; hence,

the problem ceases to be one of normal application of existing statutes, but becomes a struggle to secure a sufficiently broad interpretation of those laws to afford the legal right to construct the improvement.

A relatively recent development in design, at least for a majority of the States, is the construction of limited access facilities. It is a new field and present experience indicates it is one which requires the closest coordination of the right-of-way function with that of design in order that proper economic and legal consideration may be given to the selection of collection and distribution points of traffic and the extent to which service roads are required, and to evaluate the cost and effect upon community life in the area resulting from the improvement. The loss of access to abutting property can become not only costly, but introduces legal barriers which might prevent the full utilization of the freeway facility. To date, there have been few seriously adverse court decisions on the principle of limitation of access, and expansion of this principle to its desired limit will require careful planning and avoidance of test cases in the courts.

The development, in coming years, of the interstate system of highways with the problems it will evolve in property economics, offers another reason for close integration with design. Since the entrance of Public Roads Administration into the property field, as a result of the Defense Highway Act of 1944, experience would indicate the closer the integration of the two functions, the simpler becomes the problem of securing reimbursement for property expenditures.

The present Federal regulations relating to reimbursement for utility rearrangements should be revised to meet the basic legal principles of the several states in order that

they may be workable. Utilities also present a problem in their possible occupancy of freeways and the solution, while legal to a degree, is essentially an engineering problem which must be resolved in the design stage.

It might be well to define the limits of the right-of-way function. It is believed its duties should cover any phase of overall departmental operation which affects the design, construction, or maintenance of a highway, as long as it involves property or rights therein. This should include the issuance of all permits, except possibly those for vehicle overloads. By reason of the background of the staff, it is not unreasonable to assume the preparation of agreements and other legislative requirements of the department could be included. The centralization of contacts on utility rearrangements can produce results both economical and valuable from a public relations standpoint, and are within its sphere of activity. This same background can be utilized in negotiations with the Government in those areas in which flood control and other water conservation projects are under way.

Many more factors might be pointed out, indicating the need of design and right-of-way integration. Those States which have accepted this principle can testify to its efficiency. It is neither a cure-all nor is it the only manner in which the function can be operated, but under the financial and legal restrictions existing in a majority of the States, it appears to be a logical approach to a solution of this phase of highway administration.

Granting the acceptance of the principle of integration, problems in administration and operational procedure are immediately presented not necessarily pertinent were the function operated as a real estate unit.

In outlining an administrative

organization, it is intended to do so theoretically and to incorporate as suggestions, those characteristics which, over the years, have proven to be desirable and efficient within the limits of that too seldom considered, but most vital characteristic, human nature.

The plan of organization must, of course, follow the overall pattern of the department and may be influenced by statutory requirements. Since the degree of success of any type of organization depends directly upon the degree to which it is policed, it is assumed adequate provisions for that control are available. The functional structure suggested is predicated upon central office administrative control by the chief engineer of design, with possibly three or four regional field representatives of the design bureau serving as a liaison unit between the central office and the divisions or districts which are the units of production.

The central office administrative unit should be relatively small in size, staffed with engineers having long and varied experience in the acquisition of rights-of-way. The chief of the function should be responsible for the determination of policy, procedure, both in field and office, and absolute control of all payments for property expenditures.

From a practical standpoint, this unit could operate directly under the chief engineer of the department, or the chief highway administrator. Greater efficiency and coordination will be possible if it is directly responsible to the chief engineer of design.

The duties of the regional unit are to instruct, advise and supervise, plan preparation in the several divisions or districts, and to this unit should be assigned a right-of-way engineer, especially qualified and capable of assuming the responsibility for the proper opera-

tion of the production units. These regional assistants should coordinate the duties of the right-of-way function with those of the regional design engineer, but they should be under the direct control of the chief of the function.

The negotiators, or real estate agents, should be under control of the regional right-of-way engineer for assignment within the area, in order to assure mobility of operation and proper control.

The division or district, because of the importance of its responsibility of production, should be adequately staffed. The design engineer, whose primary duty is the production of plans, should be in control within that unit, but be subject to regional authority, in order that coordination of design and right-of-way may be assured.

The division right-of-way engineer should be under the control of the design engineer and be responsible for all the detailed processing of the data required. He should have readily available proper technical help, charged with the preparation of descriptions, property plans, title searching, etc.

It should be the responsibility of the division to apply all the technical, economic, and legal principles of the function to the design of the project in such manner, and at such time, as will assure the most favorable results.

Completion of the cross-sections makes possible the determination of right-of-way widths, writing of description, and the preparation of title papers. The property plan, by this time, should be finished. Concurrently, the parcel by parcel encumbrance, or pre-appraisal, should be undertaken. Negotiations should be commenced upon the basic completion of the plans and any changes determined in access or other minor details, resulting from negotiations, so that if the project is on the Federal program, a com-

pletely acquired right-of-way is available when the plans are sent to the central office for plan, survey, and estimate submission to Public Roads Administration. In the interim required by Federal processing, warrants in payment for property can be made available and released prior to, or concurrently with, the receipt of bids.

It is almost axiomatic that integration of design with the right-of-way function cannot operate successfully unless its staff has at least an overall engineering background. With the personnel essentially technical, the question arises as to whether or not the negotiators, or real estate agents, also should be engineers. It is certain that an engineering background is essential, since it is now necessary to negotiate for rights-of-way, whether rural or urban, in terms of engineering facts, and unless the negotiator is able to translate the plans into language the owner can understand, subsequent lawsuits are a distinct possibility.

One of the States, operating this function along the lines of a real estate unit, has inaugurated a very successful course of training for real estate agents. The idea might well be adopted elsewhere, particularly in those States which still look upon this phase of operation as a suitable resting place for the deserving.

These men are the first representatives of the department to come into direct contact with the public. Their ability to sell the department and the improvement, to abutting owners, constitutes a phase of public relations too long overlooked.

Given such an organization as has been outlined, its administration becomes relatively simple. To the determination of policy, procedure, and the control of payments for property expenditures now may be added policing and coordination with the overall operation of the

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."