

Zoning and Traffic Congestion¹

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● ZONING REGULATIONS can be used to combat the almost universal urban problem of congested traffic facilities. Zoning, administered with an appreciation of the functional relationship between streets and the zones they serve, can help correct defects in existing street systems by achieving a desirable balance between (a) traffic generators of all types and sizes, (b) street capacity for moving vehicles, and (c) off-street parking and other terminal facilities.

Three purposes of special importance appear in all state zoning enabling legislation:

1. To lessen congestion in the streets.
2. To prevent undue concentration of population.
3. To promote the general welfare.

Far from being distinct purposes standing alone, these objectives are related and must be accomplished together if they are to be effective.

The elements of "the general welfare," as this term has been defined in zoning law, include:

- (a) Public health.
- (b) Public safety.
- (c) Appropriate uses of land.
- (d) Preservation of character of neighborhood.
- (e) Stabilization and protection of property uses and values.
- (f) Enhancement of value and utility of property.
- (g) Safeguarding of future development and use.
- (h) Stability of plan and conditions.
- (i) Prevention of undue concentration of population.
- (j) Aesthetic considerations.

Inasmuch as each of these elements is supported by court decisions, this list could be called a judicial statement of zoning purposes. Although a statement of zoning purposes by a city or regional planner would be somewhat broader and would stress the use of zoning to implement a land-use planning process, it would stress each of these elements as well. In any event, even the listed judicial statement of purposes cannot be achieved without proper handling of traffic arterials. Effective traffic management is implicit in each of them. For example, the future development of a city (Item g) and its street system are closely interrelated. Population density control (Item i) is aimed at solving some of the problems of congestion. It strikes at the root of the traffic problem by preventing over concentration. Urban development, even with good zoning regulations, will be stifled by an inadequate street system. Conversely, haphazard development under an inadequate zoning ordinance will reduce the effectiveness of an otherwise adequate street system. Thus, zoning programs and street systems, if not coordinated, will each tend to reduce the effectiveness of the other. Zoning regulations formulated with transportation requirements in mind can help prevent the zoning and highway programs from working at cross-purposes, and thereby help the community achieve the full benefit of both programs.

Additionally, zoning can provide a stabilizing influence (Item h) permitting a street plan to be developed to serve the various zoning districts by providing efficient and convenient movement of people and goods. A desirable distribution of traffic-generating uses can be encouraged (Item c) so that existing streets can be utilized with a minimum of congestion. Zoning regulations can aid in stopping the deterioration of a neighborhood

¹A more exhaustive legal analysis of this subject can be found in a Bureau of Public Roads document entitled "Highway Transportation in Zoning Law," scheduled to be published late in 1960.

(Items d and e) resulting from the overloading of existing streets that cannot be improved to increase the traffic flow. Zoning can enhance the use of a street or highway as a planning tool to give the city form and pattern, to demarcate land uses, and to protect neighborhoods (Items f and g). Therefore, the judicially adopted purposes of zoning can be promoted by recognizing the problems and needs of the street system.

USING ZONING TO ACCOMPLISH TRANSPORTATION OBJECTIVES

The preceding examples point up the intimate functional relationship between zoning and streets. In recognition of this relationship zoning powers should be used to their legal limits in order to accomplish transportation objectives. However, it must be borne in mind that there are often practical limitations which might preclude adopting regulations even though they are legally justifiable.

Some of these limitations stem from problems confronting the community planner. For example, intergovernmental and interagency relations are involved at every level of discussion — from the planning of transportation to the financing and operation of any transportation system. Frequently the planning, location, design, financing or construction of the highway has affected actions of the community planner, rendering his goals and objectives either unobtainable or more difficult to obtain. From a community or regional planning viewpoint this means one implementing measure, the highway system, is rendering other implementing measures and procedures less effective, hence the need for coordination becomes immediate.

Most planning enabling legislation delegates to the community or county planner the responsibility for proper coordination, but the legislation seldom provides a means for effectively meeting this responsibility. Such legislation usually does not specify the priority this coordination is to have in the total planning process. Nevertheless, increasing emphasis is being placed on coordinating city and highway planning.

This emphasis, in addition to making possible a greater benefit to the community from highway expenditures, provides the highway engineer with an opportunity to encourage the use of city planning implementing measures, including zoning, to further transportation objectives.

Specifically, the highway engineer can encourage the development of standards for implementing city planning through the zoning mechanism that takes into account highway problems. Opportunity to influence the development of standards is continually present in the changing modern urban scene. It is inevitable that there must be change in land use and planning standards as there have been changes in standards of living, work hours, travel methods, level of education, and the whole civilization.

It is the object of the planner to try to provide today for tomorrow's environment. The answer to the question, "What shall the standards be?" is that in the opinion of the planner, they should be standards that will be acceptable as far into the future as it is possible to see. With this one can agree, but certainly a greater effort can be made in the future than has been made in the past to develop standards that take into account highway transportation problems. Adequate standards, from a highway viewpoint, will more likely result if the highway engineer assists the local governments in developing them.

A study of standards currently in use shows conclusively that without such assistance highway problems will not be taken into account. Therefore, the burden is on the engineers to insure development of adequate city planning standards, and to do this it is necessary to understand city and regional planning techniques. Highway engineers should also understand transportation benefits which may be realized by the application of these planning techniques. Then standards can be developed for using city planning measures to aid in developing adequate transportation systems.

TRANSPORTATION ELEMENTS OF A COMPREHENSIVE ZONING PROGRAM

A zoning program, to be truly responsive to transportation needs, should have objectives similar to those grouped in the following four categories. These objectives should be clearly expressed, as part of a statement of legislative purpose in the law, which establishes the zoning program.

1. To promote the goals of comprehensive community planning.
 - (a) To develop reasonable and adequate standards to guide the implementation of comprehensive planning, including performance standards for granting special exceptions in transition and buffer areas, as well as in the usual zoning districts; and to insure that these standards are responsive to the problems involved in furnishing adequate public services.
 - (b) To coordinate zoning with subdivision regulations in order that the latter may provide for the harmonious development of a district; for the proper arrangement of streets and for the coordination of streets within subdivisions with other existing or planned streets or with other features of the master plan or official map of the district; for adequate open spaces for traffic, utilities, recreation, light, air, and access of fire fighting apparatus; for minimum setback distances from streets and other public ways for buildings and structures; for control of the number, spacing, type, and design of access points to existing or future streets from subdivision streets or from lots; for minimum width and area of lots; and for a distribution of population and traffic which will tend to create conditions favorable to health, safety, convenience, prosperity, or general welfare.
2. To balance land uses and the transportation facilities that serve them.
 - (a) To foster a more rational pattern of relationships between residential, business, manufacturing, and other land uses for the mutual benefit of all; to protect residential, business, manufacturing, and other use areas alike from harmful encroachment by incompatible uses; to insure that land allocated to a class of uses shall not be usurped by other inappropriate uses; and to isolate or control the location of unavoidable nuisance-producing uses.
 - (b) To control intensity of land use; to prevent overcrowding of land with buildings, and thereby insure maximum living and working conditions and prevent blight and slums.
 - (c) To promote a desirable distribution of population and traffic-generating land uses which will tend to create conditions favorable to adequate transportation.
 - (d) To insure that lands adjacent to interchanges of freeways, expressways and major arterials are utilized for their most productive and beneficial uses, and to secure safe and attractive development at points of access to such highway facilities.
 - (e) To check existing congestion and to prevent future congestion by limiting the development of land to a degree consistent with the capacity of the local government to furnish adequate transportation facilities.
3. To protect, preserve, and enhance the value, efficiency, utility, and traffic-carrying capability of freeways, expressways and major arterials in general.
 - (a) To reduce the opportunity for "strip commercial" districts, developing along the major arterials.
 - (b) To control development along arterials in undeveloped or partially developed zones through:
 - (1) Coordination of zoning and other police power tools available to control development.
 - (2) Development of adequate parking, properly located and designed.
 - (3) Effective use of setback requirements to provide for later improvements to the transportation facility.
 - (4) Permissive pooling of requirements for parking stalls and open space.
4. To aid in the elimination of traffic hazards produced by adjacent land-use prac-

tices and to facilitate maximum utilization of streets and highways for traffic movement.

- (a) To provide a solution to parking, loading, and terminal facility problems.
- (b) To insure safe and adequate site access and egress, to provide for inner-site circulation and turning movements, to minimize unnecessary congestion in the public streets.
- (c) To prevent the obstruction of driver visibility and to discourage uses which distract or confuse the motorist.

RECOGNITION BY COURTS OF ZONING MEASURES THAT BENEFIT TRAFFIC

It should be noted that the judicial decisions referred to in this section are discussed and analyzed more fully in the document previously referred to.¹ The coverage here is intended only as a summary to serve as a basis for the author's conclusions and recommendations.

The initial recognition of the relationship between transportation and zoning law occurred in the off-street parking decisions. These decisions, relying on the legislative purpose of zoning "to lessen congestion in the streets," upheld ordinances requiring specified land uses to provide off-street parking. Many courts then extended the justification of lessening traffic congestion and used it to support zoning measures including: (1) controlling the location and design of automotive service stations; (2) restricting the location and design of community and regional shopping centers; (3) restricting commercial development such as gasoline stations, automotive repair shops, businesses which are liable to create traffic hazards, and restaurants along major arterials thus encouraging a more desirable location of commercial traffic generators; (4) protecting traffic arteries from truck and bus turning, loading, and parking; (5) restricting location and design of fences at street corners; (6) encouraging a separation of types of traffic; (7) restricting traffic generators from locating in residential districts; (8) conditioning special exceptions so as to lessen traffic hazards; (9) establishing setbacks; (10) controlling the location and design of outdoor advertising; and (11) maintaining the traffic-carrying capability of the arterial through controlling the location and design and/or use of access to the arterial by: (a) establishing a prescribed footage and depth for "highway protection areas" and making it unlawful for any landowner to locate, lay out, construct or maintain any access road within the protective area, without first obtaining a permit, (b) applying the performance standard technique, discussed in the previous section on interchange areas, to these "highway protection areas;" and (c) establishing special highway business districts and other special districts designed to obtain a desirable distribution of traffic generators.

These decisions have recognized the effect of zoning on traffic and transportation. On the other hand, there have been many court decisions, directly affecting highway transportation, that have not recognized this need to balance transportation and land use it serves. For example, there are holdings in many jurisdictions which declare that zoning must subserve the long-range needs of the future, and that zoning is an implementing tool of sound planning, but which make no mention of transportation considerations. Recognizing that highway transportation and land-use planning are inter-related and that both are directly related to the health, safety, morals, and general welfare of the community, it would seem to follow that zoning must subserve the long-range needs of highway planning just as it must subserve the long-range needs of comprehensive planning. However, only infrequent, indefinite references by the courts to this relationship are found. (For instance, zoning for minimum lot area can strike at the root of the traffic problem by preventing overconcentration of population and traffic generators, but this is seldom recognized by the courts in handling these cases.) Nevertheless, since the transportation plan is an important component of comprehensive planning, mutually interdependent with all the other components, evidence showing that the street system is well planned and basic to the sound growth of the community or region involved, and that zoning is basic to keeping the street system operating efficiently, should be taken into consideration in adjudicating zoning cases. Evidence of this nature will be admitted more readily once the relationship between land use, the control of land use (zoning), and transportation is clearly understood.

Of course, where the zoning measures are directly related to the health, safety and morals, they may be upheld without resorting to the general welfare for justification. But where the relationship is not so direct or obvious, many courts test the validity of the measure on the basis of whether it serves the general welfare. In a majority of the states a zoning ordinance is presumed to be valid, hence the burden is placed on the person attacking the ordinance to show it to be arbitrary or unreasonable as to its classification and purposes. As a result of this presumption, the courts of these states have approved a liberal interpretation of the "general welfare". Because transportation objectives are so closely connected with comprehensive planning and general welfare considerations, it would seem that transportation considerations should be used by those courts applying the general welfare test to justify the use of the zoning power.

In any event, transportation considerations warrant more attention when zoning is reviewed in the courts than they have generally received. If proper emphasis is to be given to equating land use in the transportation system, criteria taking transportation and planning needs into account must be developed and used for determining the validity of zoning.

THE NEED FOR LEGISLATION

The 1926 Standard State Zoning Enabling Act of the Department of Commerce states that:

Such regulations shall be made in accordance with a comprehensive plan and designed to lessen congestion in the streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements. Such regulations shall be made with reasonable consideration, among other things, to the character of the district and its peculiar suitability for particular uses, and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout such municipality.

This statement of purpose is adopted without significant change and proposed in two more recent model zoning laws (1, 2). No doubt it was thought, in drafting the model enabling act and the model ordinance, that a more specific and detailed statement was not needed. However, where the courts have been hesitant or slow to expand existing law to meet changing conditions more specific direction may well be in order.

The great majority of existing zoning enabling acts and ordinances do not expand on the 1926 statement of purpose. In 27 states the zoning enabling legislation includes substantially this same statement, and the zoning law of many of these states requires considerable development to meet current needs. The review of a large number of municipal ordinances, as a part of this research, reveals the same type of restatement and failure to expand.

The justification for well-drafted statements of legislative purpose in highway law is well documented in the recently published Highway Research Board Special Report 39, entitled "Legislative Purpose in Highway Law — An Analysis." In zoning legislation, a statement of purpose which sets forth the objectives listed in the section on "Transportation Elements of a Comprehensive Zoning Program" may lead to application of the law in a manner more responsive to transportation needs. However, if clearer, more specific statements of legislative purpose do not accomplish this result, a constitutional amendment directing the courts to construe such laws liberally in favor of municipal corporations may be desirable.²

²This approach was taken in New Jersey (N.J. Const. art. IV, Sec. 7, para. 11 (1947)) after a zoning measure was held unconstitutional as it had been applied. The New Jersey Supreme Court, in a series of decisions, significantly expanded the municipal zoning power after the amendment was passed.

Once these steps are taken, a court that understands the need for comprehensive regional planning, such as the New Jersey Supreme Court in *Duffcon Concrete Products v. Borough of Creskill*,³ will quite likely have little difficulty in broadening zoning measures in order to accomplish transportation objectives. For example, Chief Justice Vanderbilt in the *Duffcon* case said:⁴

What may be the most appropriate use of any particular property depends not only on all the conditions, physical, economic and social, prevailing within the municipality and its needs, present and reasonably prospective, but also on the nature of the entire region in which the municipality is located and the use to which the land in that region has been or may be put most advantageously. The effective development of a region should not and cannot be made to depend upon the adventitious location of municipal boundaries, often prescribed decades or even centuries ago, and based in many instances on considerations of geography, of commerce, or of politics that are no longer significant with respect to zoning. The direction of growth of residential areas on the one hand and of industrial concentration on the other refuses to be governed by such artificial lines. Changes in methods of transportation as well as in living conditions have served only to accentuate the unreality in dealing with zoning problems on the basis of the territorial limits of a municipality. Improved highways and new transportation facilities have made possible the concentration of industry at places best suited to its development to a degree not contemplated in the earlier stages of zoning. The same forces make practicable the presently existing and currently developing suburban and rural sections given over solely to residential purposes and local retail business services coextensive with the needs of the community. The resulting advantages enure alike to industry and residential properties and, at the same time, advance the general welfare of the entire region.

The court's reliance on those regional considerations suggests that the use of zoning to obtain a balance between the arterial system and the land use served by the system would be approved. If this general planning goal is accepted as a proper zoning objective, then the more specific objectives in categories 2, 3 and 4 of the section on "Transportation Elements of a Comprehensive Zoning Program" should be even easier to justify.

EXAMPLES OF ZONING PROVISIONS DEALING WITH TRANSPORTATION PROBLEMS

Many city planners and municipal lawyers have indicated the need for more effective planning legislation. Perhaps all planning, zoning, subdivision control, and other enabling legislation pertaining to urban matters should be reformed, modernized, integrated, and codified in every state which has not done so recently. But there is no need to wait until this is done to develop better ordinances, standards and implementing techniques at the local level.

Some provisions which are directed at traffic and parking problems are referred to in the following as examples of how a zoning ordinance can be made to meet the transportation needs of the community. An attempt has been made to direct attention to a variety of provisions from ordinances of different cities. To give some sense of order to their presentation, the examples are listed under the category headings used in the section on "Transportation Elements of a Comprehensive Zoning Program."

1. To Promote the Goals of Comprehensive Community Planning

Few zoning ordinance provisions are specifically written to promote comprehensive planning goals. Even where an ordinance gives recognition to the role of planning, the provisions are not emphasized and are easily disregarded or avoided. Proper emphasis lessens the possibility that the provisions will be disregarded. This is illustrated by

³ 1 N.J. 509, 64 A. 2d 347 (1949).

⁴ *Id.*, 1 N.J. at 513, 64 A. 2d at 349-50.

the zoning ordinance of the Town of Cortlandt, New York, quoted in an excellent article by Hugh R. Pomeroy, "Bringing Zoning Up to the Automobile Era," in Bulletin 101 of the Highway Research Board, page 47 (1955).

Another example is the use of standards for special permits in the zoning ordinance for Fairfax County, Virginia.⁵ The ordinance requires the standards to take into account traffic safety and appropriate patterns of land use in accordance with the Master Plan. The ordinance indicates how the standards are to be employed to guide the implementation of comprehensive planning. It further provides that zoning is to be coordinated with subdivision and other community regulations.

Section 616 of the Zoning Ordinance of the City and County of Denver, Col. (codified as of July 1, 1955) provides a special plan for planned building group developments under procedures designed to coordinate zoning with planning objectives. The provisions require recognition of transportation problems.

2. To Balance Land Uses and Transportation Facilities That Serve Them

The Denver ordinance previously referred to (Secs. 612.11 and 612.15) provides for two special zoning districts which gives implied recognition to this objective.

The Township of Princeton Zoning Ordinance, Princeton, N.J. (adopted Dec. 6, 1955) provides for several districts which group compatible, heavy traffic-generating land uses. The location and distribution of districts on the Princeton zoning map indicate recognition of the importance of establishing a balance between land uses and the transportation system serving them. This ordinance utilizes a set of standards termed nuisance factors. Several of these nuisance factors involve traffic and transportation considerations. In addition, the Land Subdivision Ordinance of the Township of Princeton, N.J. (adopted Dec. 6, 1955) is referred to in the Zoning Ordinance and also contains provisions which give direct attention to the balance between planned use and transportation facilities.

3. To Protect, Preserve, and Enhance the Value, Efficiency, Utility and Traffic-Carrying Capability of Freeways, Expressways and Major Arterials

The Fairfax County Zoning Ordinance, previously cited, includes special setback provisions for major arterials.

With similar intent but in a more specific and limited manner, the zoning regulations of the City of Greensboro, N.C. (adopted July 6, 1954) requires building setback lines on specific thoroughfares listed in the ordinance.

Provisions for separate service roads, buffer strips, additional setbacks, and extra street widening are provided in the Princeton Township Subdivision Ordinance, previously cited.

An example of buffer zones which can be used to protect the unique character of limited access highways is given in A Guide for Zoning, The Regional Planning Commission of Greater Harrisburg, Pennsylvania, 1958.

The Zoning Ordinance for the City of Pittsburgh, Pennsylvania, 1958, requires that any new commercial or industrial development fronting on a designated major traffic thoroughfare must have site plan approval by the Planning Commission before an occupancy permit can be issued. Also, the ordinance provides special regulations designed to control the use of land along major thoroughfares in the form of its "C2" Highway Commercial District.

4. To Aid in the Elimination of Traffic Hazards Produced by Adjacent Land-Use Practices and to Facilitate Maximum Utilization of Streets and Highways for Traffic Movement

Zoning provisions which provide for off-street parking and loading as a means of reducing marginal friction and congestion in the streets are fast gaining general acceptance (3, 4, 5). Inasmuch as provisions dealing with the general spatial requirements

⁵ Chap. 6 of Vol. II of the Code of Fairfax County, Virginia, as amended, Aug. 4, 1959.

for off-street parking and loading are quite readily available, none are included here. Good examples are the Fairfax County, Virginia; Denver, Colo.; and Greensboro, N. C. Zoning Ordinances, previously cited (Secs. 6.1.3, 614.5, 35.22, respectively).

Restrictions on signs which may distract or confuse the motorist are provided in the Princeton Zoning Ordinance, previously referred to (Secs. 4:5 and 4:6).

For additional examples of somewhat similar signing restrictions see Section 7.2.7 of the Fairfax County Zoning Ordinance and Article XXVII of the Harrisburg, Pennsylvania Zoning Guide.

The Fairfax County Zoning Ordinance also includes specific provisions preventing obstruction of the motorist's vision, especially at intersections (Sec. 4.5).

Other examples can be found in the Harrisburg Zoning Guide and The Text of a Model Zoning Ordinance, by Fred H. Bair, Jr. and Ernest R. Bartley (2, pp. 35-36).

CONCLUSIONS

Research

The enumerated benefits to highway transportation resulting from enlightened zoning practices could easily be expanded. Each zoning measure should be investigated to determine more precisely how zoning powers can be employed to assist the highway program. This research would include:

1. Pilot studies to point up existing and potential trouble spots where zoning controls could make a positive and significant contribution to the highway program.
2. Research into the experiences and practices of other states facing similar problems in developing land-use controls.
3. A study and evaluation of existing zoning and planning legislation to determine its adequacy for controlling land development affecting highway cost, safety, and capacity.
4. Distribution to local governments of a report explaining the zoning planning powers available to them and suggesting the desirable procedures for organizing and operating zoning and planning agencies.
5. Drafting of codes, ordinances, suggested legislation, and technical guides.

Legislation

A number of legislative and constitutional changes appear to be necessary if zoning is to be an effective aid to highway transportation. For example:

1. Legislative statements of purpose and intent for zoning enabling legislation, expressly recognizing transportation considerations as essential in zoning, should be adopted. Further, the legislation should be amended with specific provisions authorizing zoning measures and procedures that benefit highway transportation.
2. Zoning ordinances should be updated in a manner that will enable them to handle today's problems.
3. Consideration should be given to adopting a constitutional mandate requiring any law concerning municipal corporations to be construed liberally in their favor.

Standards

Action on these recommendations would go far toward satisfying the need for legislative guidance in the use of zoning powers to promote efficient operation of transportation systems. Realistic legislation, however, must include workable and practical standards. Highway engineering and highway planning research must be conducted to establish the connection between justifying and applying zoning. Once established, these relationships will serve as the basis for workable and reasonable standards. For example by studying the transportation requirements of various classifications of land uses, standards could be developed, which if incorporated into the zoning process would render zoning responsive to the transportation needs of the land uses being regulated.

Administration of the Zoning Ordinance

The techniques and procedures available for administering the zoning ordinance (for example, special use permits or exceptions, variances, performance standards, special districts or zones) should be adapted to take highway transportation needs into account.

Administration and Adjudication of Zoning Controversies

The engineer and planner must be called on to play a more important role in hearings before the zoning boards of appeal and in court trials. Only by placing increased reliance on engineering and planning studies can zoning and transportation be coordinated in an efficient implementation of a comprehensive community plan.

REFERENCES

1. Yokley, _____, "Zoning Law and Practice." Vol. 2, p. 217, sec. 267 (1953).
2. Bair, _____, and Bartley, _____, "The Text of a Model Zoning Ordinance, with Commentary." Publ. Admin. Clearing Serv., Univ. of Florida (1958).
3. "Zoning and Parking Facilities." HRB Bull. 24 (1950).
4. "Parking Requirements in Zoning Ordinances." HRB Bull. 99 (1955).
5. "Parking: Legal, Financial, Administrative." The Eno Foundation for Highway Traffic Control, Saugatuck, Conn. (1956).

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