

capture is a powerful motivating force. Through an effective pricing mechanism, grantors should be adequately compensated for opportunities forgone. Owners of candidate granting lots ought not to be cast involuntarily in the role of magnanimous benefactor.

Indications are that TDR approaches have a better chance of winning acceptance if the following conditions can be met: (a) development rights can be transferred between lots of common ownership; (b) granting and receiving lots are in close proximity to one another and real-estate values are comparable; (c) there are no competing bonus systems; (d) demand for higher-density development at candidate receiving lots is substantial and floor-area ratios set a limit on the development allowed by rights; (e) transfers are guided by an urban design framework plan; and (f) receiving lots are of a size and shape that allow additional development rights to be absorbed without creating negative externalities.

The proposed strategy is a synthesis of several regulatory techniques: transfers of development rights, traditional zoning, and the city's powers in relation to urban redevelopment, including the power of eminent domain. As indicated, the availability of transferee lots is critical. Such lots should meet specific criteria with regard to location, size, and shape. Urban renewal provides a basis for creating workable receiving lots. Several steps are involved: land assembly, selective demolition, reparceling, and parcel disposition. Zoning controls help in establishing the preconditions for an effective market in development rights. Development must conform to bulk specifications defined for each individual parcel in a comprehensive area plan. However, since only a limited amount of development is assigned as of right, developers must acquire additional rights to meet envelope specifications. A demand for development rights is created; transfers of development rights ensure that the demand can be met. In the Glen Echo Ravine case, the redevelopment area is designated as a receiving zone and the open spaces at Glen Echo are designated as a granting zone. Developers are assured of a source of development rights and owners of a market.

Area values appreciate at an accelerated rate as a result of preservation of natural features, and urban re-

newal controls development in accordance with an urban design framework plan. However, the success of the strategy hinges on whether landmark owners perceive the incentive as sufficiently attractive. The strategy seeks to assure landmark owners a commensurate share in accelerating area values by establishing patterns of common ownership in both receiving and granting zones. Rather than having to forgo opportunities to engage in development, which is the case when development rights are sold, owners are provided an opportunity for ongoing participation in the development process. Landmark owners may shift development potential away from the to-be-protected area to sites they own in the receiving zone; through the redevelopment area parcel-disposition process, owners acquire strategic parcels to which development rights may be conveyed in amounts sufficient to fill designated envelope specifications.

This approach will increase incentives to preserve the Glen Echo Ravine and expand the array of options by providing an alternative to the sale of development rights. It will thus enable participation in the type of development that takes full advantage of the urban design potential inherent in protecting scenic assets. It will thus permit landmark owners to participate in the economic benefits that flow from a built environment that is superior in quality to that achievable under conventional development patterns.

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Abridgment

Urban Blight and Highways in the Central Cities: Theoretical and Practical Perspectives

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A basis is provided for a better understanding of the causes of urban blight and the relation between urban blight and highways. A literature review on the causes of urban blight is presented, and examples of mitigative measures taken in various cities are described. Several federal programs that could be, or are being, used to fund revitalization and development efforts in central cities are briefly discussed.

The President's urban policy, enunciated on March 27, 1978, proposes to "improve the urban physical environment and the cultural and aesthetic aspects of urban life." To guide any effort to revitalize central cities, the literature should be examined to ascertain the causes of blight. Given the coexistence of urban blight and highways in many American cities, it behooves

urban observers and planners alike to examine the relationship between the two. When there is a general understanding of such a relationship, highway-related mitigation measures can be suggested and preliminary conclusions can be drawn on the applicability of these measures to reducing blight in central cities. Detailed follow-up studies would then have to be undertaken to determine specific actions and conditions for revitalizing central cities. This paper, which relies on secondary sources, is designed to provide a basis for further detailed, on-site study.

DEFINITION OF URBAN BLIGHT

Urban blight is a symptom of many complex factors that are at work before blight itself is physically evident. These factors lead to the outflow of people and activities from central cities and result in visible deterioration of physical structures. Some principal characteristics of blighted areas that represent various stages of the appearance of blight as a physical phenomenon are

1. Property values at a low rate or approaching zero (1, p. 11);
2. Replacement of higher-income groups by those with lower incomes (2);
3. A large proportion of abandoned buildings and vacancies (3);
4. Excessive tax delinquency (3);
5. Environmental deterioration, such as noise and air pollution (4); and
6. Concentration of chronic unemployment (4).

CAUSES OF URBAN BLIGHT

The specific causes of blight suggested by the literature may be grouped in several principal classes as follows:

1. Psychological—belief in the profitability of unimproved property (5, p. 12) and the desirability of suburban living (6, p. 48);
2. Social—housing discrimination (7) and rising social standards (8);
3. Economic—a decline in the demand and loss of markets (2), redlining (7), investment tax credits (9, p. 18), and the property tax structure (10);
4. Physical—tax zoning controls (3), deterioration of building stock (11), highway barrier (12), increases in accessibility (13, 14), and traffic noise, vibration, and air pollution (15, p. 157); and
6. Governmental—school desegregation and liberal mortgage lending policies (14).

A macromodel for understanding the development of urban blight in central cities is suggested by Anas and Moses (14). According to the model, business activity leaves the central city in order to avoid high land values and construction costs. This outflow of activity causes the deterioration of public services because disposable tax revenues that had gone into maintaining such services are decreased. The deterioration of public services causes people who are economically capable of relocating outside the central city to do so, which leaves concentrations of the poor. Concentrations of the poor, in turn, increase the demand for unfunded services, which results in revenue imbalances. Revenue imbalances then lead municipal authorities to increase local taxes, which encourages middle-income groups to take advantage of increased accessibility and liberal mortgage terms to move outside the central city.

The operation of the macromodel suggests that a

myriad of factors are at work and that each reinforces the next in exacerbating blight.

ROLE OF HIGHWAYS IN URBAN BLIGHT

Traffic congestion on highways produces the negative effects of noise, air pollution, and vibration, which contribute to negative social and psychological conditions. Noise may cause excessive fatigue and intrude on normal conversation. Air pollution, consisting of carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter, may impair psychomotor skills, form photochemical smog, and dirty building facades. Traffic-induced vibration may build up to a degree that is annoying to people and possibly damaging to structures. Traffic congestion contributes to negative social and psychological conditions by discouraging pedestrian activity. People may feel unsafe or dislike walking near a thoroughfare because of noise, litter, and exhaust fumes.

Because of their dependence on walk-in customers, business establishments are particularly susceptible to conditions that discourage pedestrian activities. Elevated highways such as viaducts and bridges may be seen as barriers that people are reluctant to walk under. Poorly lighted underpasses may pose real or imaginary threats to the safety of pedestrians. Highways may be regarded as aesthetically intrusive in a central city in which older building styles or the visual setting (harbors, mountains, skyline) predominates.

These effects of highways produce in the persons or businesses affected a desire to move that is not otherwise present, whereas an additional effect of highways—accessibility—brings to fruition desires to leave the central city that were already felt.

HIGHWAY-RELATED OPPORTUNITIES FOR MITIGATION OF BLIGHT

Since it is recognized that highways will continue to be needed in the central city and that their impact on the central city operates in joint action with other factors, how can planners use highway improvements to mitigate blight?

The application of transportation system management (TSM) and zoning and the provision of joint-development opportunities might mitigate many of the adverse effects of highways on urban areas. TSM, a program sponsored by the U.S. Department of Transportation, is intended partly to enable urban areas to preserve central cities and neighborhoods from the negative effects of traffic. Reducing traffic also removes the blighting influence of congestion.

An example of the use of a TSM measure to reduce blight can be found in Albuquerque, New Mexico (16). Merchants in the city believed that dirty streets and sidewalks and unsafe and expensive parking discouraged downtown shopping. As part of a redevelopment strategy, a segment of the main thoroughfare was converted from a four-lane arterial with parallel parking to a two-lane street with angle parking, and excess traffic was rerouted. The rerouting of traffic, along with other efforts, is expected to arrest blight and encourage the strengthening of the daytime shopping market.

Zoning, as used here, refers to roadside zoning, a type of land use control based on the use of police power. A number of special land use controls could be applied in the context of roadside zoning to mitigate blight: (a) landscaping standards, (b) off-street parking standards for businesses, and (c) building standards for development.

In Charleston, West Virginia, the Triangle Area Renewal Project was amended to provide additional land to buffer the impact of I-77 on an adjacent residential environment (17). The buffering was accomplished by (a) prohibiting residential development within 30 m (100 ft) of the Interstate's right-of-way boundary, (b) permitting only land uses compatible with the highway (e.g., general commercial uses), and (c) requiring landscaping on any land not covered by buildings.

Both TSM and zoning measures are simple and inexpensive to apply. In contrast, joint-development projects may be complex and expensive and often require private financial participation. The advantages of a joint-development project could include (a) financial returns on public investments, (b) direction of physical growth, (c) efficient use of available land, and (d) employment, housing, and other opportunities for residents.

In New Orleans, a joint-development project was planned to reduce blight in the area of I-10—a six-lane, entirely elevated structure (18). Trucks on the road generate a noise level of 90 dB(A) at 15 m (50 ft), and suspended particulate matter exceeds the permissible maximum. With citizen participation, a design team developed an \$81 million plan to revitalize the area, including landscaping, a separate turning and stacking lane, plazas under the expressway, relocation of railroad yards, an urban linear park, a municipal office complex, retail stores, and townhouses. To date, the study recommendations and project costs are still being evaluated. It appears that the cost of any joint-development project to reduce blight would be considerable, although federal programs could provide some assistance.

APPLICABLE FEDERAL PROGRAMS

Four federal programs could be used to fund the economic and physical development of central cities:

1. The urban development action grant (UDAG) program of the U.S. Department of Housing and Urban Development (HUD),
2. The urban initiative program of the Urban Mass Transportation Administration (UMTA),
3. The special impact program of the Community Service Administration (CSA), and
4. The public works program of the Economic Development Administration (EDA).

The urban development action grant program was authorized by the Housing and Community Development Act of 1977. Program money is available for projects that encourage joint public-private community development, such as purchasing land, demolishing structures, and developing air rights. UDAG funds have been used to undertake such transportation-related improvements as the construction of pedestrian ways in St. Paul, Minnesota.

The urban initiatives program was authorized under the Urban Mass Transportation Act of 1964, as amended. Transit-related projects that contribute to the revitalization of cities—e.g., intermodal transfer facilities, transit malls, and joint-development projects—are eligible for funding. Funds have been awarded to Fall River, Massachusetts, for the design of an off-street transfer facility and to Atlanta for a bus-only transit mall in the downtown.

The special impact program of CSA was authorized by the Community Services Act of 1974 for the purpose of reducing chronic unemployment and community deterioration. Community development corporations (CDCs) in 40 cities have been established to carry out

their self-help efforts in partnership with the business and financial communities. In Rochester, New York, for example, a CDC has received subsidies and technical support from the Xerox Corporation for an electronics venture in the central city.

The public works program was established by the Public Works and Economic Development Act of 1965 to help restore the economic health of areas burdened with high unemployment and low family incomes. Public works program funds have been used in Texarkana, Texas; Toledo, Ohio; and other areas to complement UDAG funds in constructing public service improvements.

Like the above programs, TSM and joint-development efforts of the Federal Highway Administration (FHWA) address the revitalization of central cities, although not with specific authorized funding. Urban areas do have available urban-system funds authorized by the Federal-Aid Highway Act of 1970 to fund TSM measures. More than 70 cities have used these funds to apply automobile-restraint measures, such as closing a downtown shopping street and rerouting traffic, as in Albuquerque, New Mexico, or restricting travel to transit vehicles and pedestrians, as in the Burdick Mall in Kalamazoo, Michigan.

The joint-development efforts of FHWA stem from the Federal-Aid Highway Act of 1961 and Policy and Procedures Memorandum 90-5, the purpose of which was to unify corridor planning and highway design activities in the airspace of the highway right-of-way. Reviews of the effort, however, found joint development difficult to achieve because of such inherent problems as coordination, financing, and legal restrictions (19, p. 38).

FHWA program funds are, however, being used with funds of other federal agencies to strengthen declining urban areas. EDA program funds authorized by the Public Works Capital Development and Investment Act of 1976 are being used to supplement the financing of 38 highway projects, such as the widening of State Street in Los Angeles. FHWA funds are being used in conjunction with UDAG funds in Cambridge, Massachusetts, to construct highway improvements as part of a redevelopment effort.

All four federal programs mentioned above appear to be compatible with each other and with the programs of FHWA. Moreover, the HUD, UMTA, EDA, and CSA programs specifically endorse joint federal agency participation. This combination of programs could be used as leverage to obtain sufficient private money to mitigate blight in central cities and could thereby make possible a comprehensive effort in this area. Since blight has a multiplicity of causes, a comprehensive effort is desirable because of its potential for multifaceted action.

CONCLUSIONS

Preliminary analysis has found that highway transportation constitutes only one of many factors that contribute to the formation of urban blight. In order to succeed, therefore, any effort to reduce blight should address as many causal factors as possible, including social, psychological, economic, and physical ones.

Based on preliminary analysis, three types of mitigative measures appear to have the potential for reducing highway-related blight: (a) TSM, (b) zoning controls, and (c) joint development. The first two are simple and inexpensive to apply. The joint-development alternative is both expensive and complex, and joint funding of projects appears to be a necessary means of making this alternative possible. Participants in a joint funding venture could include private industry, the

relevant federal agencies, and state and local governments.

On the federal level, preliminary analysis suggests that a joint effort to mitigate blight could be possible because of the variety of already-existing programs: the urban development action program, the urban initiatives program, the special impact program, and the public works program. Were money available from all of these programs and the programs of FHWA focused on the same project area, revitalization of the central cities could be enhanced.

The conclusions drawn in this paper are preliminary. To determine specific and definitive actions for revitalizing the central cities, it will be necessary to undertake a major field study that would (a) consider the elements of urban environmental design and intergovernmental relations and (b) detail efforts in blight mitigation and their cost-effectiveness. Finally, the study would have to consider policy options and mechanisms for reducing urban blight.

The U. S. Department of Transportation is currently undertaking such a study, called simply the Urban Blight Study. It is expected to be completed in November 1980.

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