

TERMINAL LOCATION AND COLLECTION AND DISTRIBUTION IN THE CITY CENTER AND SUBURBAN AREAS

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The process of urban goods movement has the following 3 basic, readily identifiable aspects: movement of goods into and out of the urban or metropolitan area, movement of goods within the metropolitan area, and movement of goods through the area. These basic functions are, of course, closely related. At times they even overlap, but they each have their own peculiar characteristics and give rise to their own set of problems.

In most major cities, the movement of goods into, out of, and through the city areas is achieved by utilizing a combination of truck, rail, air, water, and pipeline modes. Movement within the city, however, is largely accomplished by truck. Accordingly, from the standpoint of metropolitan transportation, the great majority of the problems experienced in the movement of goods are not caused by the intercity or through phases of the operation. They arise from the operation of the terminals that provide the interface between intercity and local transportation facilities, the terminals that are required to handle the distribution of goods within the city, and the actual movement of vehicles, mostly trucks, that are used in the movement of goods to their points of destination or from their points of origin within the city.

This panel was concerned with the dual subjects of terminal locations and the collection and distribution of goods within the metropolitan area and not the problems that arise primarily from the intercity and through phases. The panel recommends 11 research projects for consideration by government, industry, research agencies, and universities.

The first project has to do with the entire subject of terminal location, including facilities that handle local, intermodal, intercity and even through freight and that have major impacts on metropolitan regions. We recommend that a government research project be designed to determine the factors that should be considered in the location of terminals for single-mode as well as for multimode operations. The research project should consider the terminals in a metropolitan region as an overall distribution system for the area. Therefore, we suggest that there are 5 basic areas for research into the subject of terminal location:

1. The first area is in the general category of terminal operator requirements. The terminal operator needs convenient modal interface because this is essentially the function he provides, access to markets, and proximity to areas where employees live or can live.

2. The second area relates to the compatibility of the terminal with adjacent land use. Terminal operations often produce congestion, noise, and pollution, and may have many other effects on the adjacent region.

3. The third area is the impact of the terminal or perhaps the lack of terminals on regional development, on employment opportunities, and on regional transportation costs. This is particularly important with reference to competition with other competing regions.

4. The fourth area is the effect of government policy on terminal location. Policies on tax structures, zoning, street construction, and other public services have a great impact on terminal location.

5. The fifth area is the possible multiple use of terminal areas. There may be an opportunity in certain types of terminals for air-right development and for multimode operation of terminals adjacent to each other.

The second research project is an analysis of terminal design and efficient terminal operating methods. We recommend that industry undertake this research because this is such an important component of the whole urban freight distribution system. The study should include the following: all types of terminals for all transportation modes; different kinds of terminal operations such as local cartage, retail, wholesale, and distribution; and different transportation functions such as bulk terminals, unit load terminals, and LCL or LTL operations. The study should analyze, from the standpoint of efficiency and cost, methods of loading and unloading, sorting and arranging, scheduling, vehicle marshalling, alleviating congestion, and effecting internal controls that are designed to produce orderly operations, reduce pilferage, and so forth.

The third project is an investigation of the whole concept of consolidated or joint terminal operations. This subject should be studied jointly by government and research organizations. Consolidation is a solution that people invariably suggest as a panacea for reducing city congestion caused by the movement of goods. Yet, it is a difficult process to effectively put into operation; few if any outstandingly successful joint terminal operations are presently in existence. Accordingly, a pilot study should be contemplated that would attempt to locate examples of joint terminal operation in 5 representative cities. The project should be designed as a very careful objective study of the costs and the benefits of joint or consolidated terminal operation. It should consider separately the possibilities of joint terminal operation for common or contract carriers and the possibility of consolidating the operations of private carriers as well. The project should investigate whether there are certain types of goods or certain types of operations that are particularly suitable for consolidated operation. It should look into the subject of who should own and operate such terminals and how they should be operated. Should they be partially operated by a governmental agency or by private industry? What should be the location criteria for a consolidated terminal operation? If this is a desirable solution, must there be some kind of compulsion from government, such as tax incentives, or some other type of nudging of private carriers to involve themselves in this type of operation?

The fourth project relates to shipping and receiving problems. We think that this should be a government research project that should be undertaken in representative cities to study congestion, time lost, and increased costs caused by shipping and receiving problems. Severe problems are encountered by carriers in shipping and receiving of the goods. The problem seems to be particularly severe in city centers, and the study should examine the possibility of zoning or building regulations for new buildings in cities that will result in more efficient pickup and delivery. In areas that are already built up, there may be a possibility for some types of mini or block terminals, perhaps in the form of exclusive space on the roads or some partial use of sidewalks in order to provide better opportunity for pickup and delivery. (This could be a possible TOPICS project.) The study should set standards for the amount of dock space required in buildings of different sizes and types in downtown metropolitan areas. It should investigate the feasibility of off-peak delivery schedules. Congestion pricing or some other means might possibly be used to reduce peak-hour congestion caused by both trucks and automobiles in city centers. Local cartage companies have problems with circuitous or poorly conceived suburban street designs, and the study should examine this and any other feature of the metropolitan area that creates pickup and delivery problems.

The fifth project is a study of paper work procedures for handling freight movements in urban areas. Government and industry should cooperate in a study of possible improvements in paper work that could simplify procedures and eliminate delays. In the New York area, for instance, one of the most important causes of delay in the handling of foreign trade is paper work. There are similar problems with intermodal movement of freight and with local pickup and delivery. Improving these procedures could solve some of the delays and cost problems related to the movement of goods in urban areas.

The sixth project is a study of truck operating costs as they are affected by operating conditions encountered in local goods movement. Industry, perhaps through a trucking association or a similar research group connected with industry, should conduct this research. The study should identify costs of fuel consumption, crews, oil, tires, and maintenance and repair for different types and sizes of vehicles. It should then attempt to determine how these costs are affected by number of stops, congestion, road conditions, load size, speeds, grades, and so forth. It should develop criteria that could better match vehicle types and sizes to specific conditions encountered on different routes and different tasks of freight movement in urban areas.

The seventh project is a study of the social cost of urban goods movement and could be done by a university or research agency. Public action may be called for if the location and operation of terminals or vehicle operations are associated with social or other costs that are not fully compensated for by these operations. Therefore, it is important to try to measure the social costs associated with them. Noise, air pollution, visual intrusion, safety hazards, impact on land values or land character, delays to traffic and pedestrians, increments in pavement construction and maintenance costs, and community disruption are examples of the kinds of costs that should be considered. If these costs are large enough to warrant public action, is it desirable to find ways to shift some of these costs to the operators, or must we take these costs into consideration in our whole study and theory of the problem of distribution of goods in urban areas?

The eighth project is to develop new and improved study methods and analytical techniques for the analysis of urban goods movement. The project should be undertaken jointly by government and by research agencies at the universities. The growing awareness of the magnitude and complexity of urban goods movement clearly indicates that the focus of planning must be widened to include an examination of the social, regional, and environmental impacts of transportation facilities and operations. Both region-wide planning and project planning approaches and methods must be aimed at understanding qualitatively and, wherever possible, quantitatively the full range of consequences of the various alternative plans that may be available. Decision-makers should have both nontransportation and transportation inputs on which to base decisions and determine courses of action in the metropolitan areas. The present methods of study, which have been developed over the years in passenger transportation planning for metropolitan areas, need to be examined to determine whether the whole focus should perhaps be shifted in order to provide a much broader spectrum of inputs and outputs concerning the impact of plans on the region.

The ninth project is an evaluation of the influence of regulation and legislation on terminal location and goods collection and distribution. This project is suited for a university or research institute. The study should determine the beneficial or harmful effects of municipal, state or provincial, or federal regulatory or tax legislation. Examples are the disparity of local urban regulations concerning vehicle sizes and weights and the various U. S. regulations on commercial zone sizes and geographic areas of permissible delivery of air cargo. The latter have an impact on terminal location and can be deleterious for the region that the terminals attempt to serve.

The tenth project concerns data requirements. Undoubtedly, new requirements will arise out of the studies and projects proposed here as well as others that will be undertaken as we begin to focus more and more on the subject of the movement of goods in urban areas. These data in many cases are expensive to acquire. Consequently, careful cost and benefit studies must be made of data requirements before a large-scale data collection program begins. Because members of the panel strongly disagreed regarding data collection programs, the panel decided, with one exception, not to specify data requirements but to let them emerge from specific research projects. The one exception is origin and destination information of freight and goods by all modes of transportation. Three data bases—national, regional, and state or provincial—are needed for this. The regional requirements are for detailed data that may have to be collected from non-national sources. National data can be much less detailed geographically, and state or provincial data are perhaps halfway in between the national and regional. Therefore, data gathering is bound to be an expensive operation, but it is something that has been lacking for a long time. We will very severely feel this lack as we concentrate efforts in the area of goods movement.

Finally, the eleventh project recommended is demonstration grants. No specific demonstration grants are proposed because these would more appropriately emerge from the research projects suggested. Government departments of transportation should be organized to administer and consider the whole subject of demonstration grants or research projects for freight movement. Although it may be presumptuous to suggest this kind of reorganization, it is necessary and there should be a focus in government that can be used in processing the demonstration grants and in approving governmental financial support that many of these research projects will need.