From: Loreley folder labeled "Planning Division Studies - World Trade Center" containing "Journey-to-work" surveys, etc.

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(WTC archives)

WORLD TRADE CENTER - INTRODUCTION
PLANNING DIVISION STUDIES

Following the recommendation of the Downtown Lower Manhattan Association that the Port Authority undertake detailed studies of the World Trade Center and the placement of primary responsibility for carrying out the study in the Port Development Department, the Planning Division was assigned certain basic responsibilities in connection with the project. Fundamentally, the Planning Division's responsibilities lie in the area of the transportation requirements which will be necessary for the successful development and operation of the World Trade Center complex. Beyond this, the Planning Division was assigned a responsibility for analyzing all other possible sites other than that recommended by the Downtown Lower Manhattan Association in which a World Trade Center might conceivably be located.

This report dealing with these transportation and site location aspects of the total study, is necessarily quite preliminary in nature since the staff is not yet in a position to identify precisely the various component parts which will make up the World Trade Center. It is assumed that the preliminary findings discussed herein will be refined and modified as necessary during the course of the next few months as additional detailed factual data becomes available.

The Planning Division's studies to date are presented basically in four parts. These include the following general areas of investigation:

1. An analysis of the adequacy of the site proposed by the Downtown Lower Manhattan Association from the standpoint of the basic criteria which must be considered in a World Trade Center. This analysis includes an examination of other possible areas both within and outside of New York City within the framework of these basic criteria which must be met by an international trade center.

2. Preliminary estimates of the traffic which will be generated by a World Trade Center in terms of total numbers of employees and visitors and the modes of transportation which they are likely to use. Since the major mode of travel to and from the site will be by subway, this section of the report deals at some length with the estimated distributions of subway patrons among the several subway stations in the area.

3. A preliminary analysis of several alternate functional plans for providing direct subway access to the World Trade Center site including the possibilities of new subway tradage, new subway stations, pedestrian arcades or passage-ways, and other related factors.

4. A preliminary analysis of the parking requirements for the World Trade Center including an inventory of existing parking facilities and an examination of the ability of the City streets and the South Street elevated highway to absorb traffic which can be expected to utilize parking facilities within the World Trade Center.

In addition to the refinement of these preliminary findings which will be undertaken over the next few months, it is expected that the Planning Division will undertake additional studies in connection with the projeet. These will include an investigation of the relationship of the New York City Department of Marine and Aviation's proposal for the redevelopment of the East River piers to the World Trade Center project, primarily from the standpoint of traffic congestion which may result if both major projects are constructed. In addition, it is expected that the Division will undertake studies to determine what the impact of the World Trade Center on the development of the immediate surrounding area of lower Manhattan is likely to be in the future.

SELECTION OF A SITE FOR THE PROPOSED WORLD TRADE CENTER

The idea of a World Trade Center located on the east side of Lower Manhattan as proposed by the Downtown-Lower Manhattan Association early in 1960, has been received with enthusiasm by all levels of government and business. Nevertheless, questions are bound to arise as to why other locations are not suitable for the project. Certainly it can be expected that there will be those who would advocate a site where undeveloped and less expensive land was available. If it is conceded that such a project should properly be located within the City of New York, suggestions for other locations in Queens or Brooklyn or other areas of Manhattan will most certainly be advanced It is the purpose of this section of the report to answer these potential questions by describing briefly the character of foreign trade and pointing out the site requirements that must be satisfied in choosing a location.

In planning a site location for the proposed World trade Center the functional requirements of the project are of primary importance. As projected, the Proposed World Trade Center would consolidate many of the governmental and private elements which are functional parts of the flow of foreign trade. Some of the features which are characteristic of foreign trade are a need for rapid communication, fast execution of financial and customs contracts and documents, and frequent face to face contacts. Foreign trade also generates largemnumbers of foreign and domestic visitors, who may have many business calls to make to complete a single transaction. On the basis of these common characteristics a set of basic criteria can be established to measure the relative advantages of alternate locations.

The site should have:

1. Close proximity to the existing functional center of international trade and management including customs, freight forwarders, foreign banking, marine insurance, shipping companies and companies in foreign trade such as coffee, sugar, cocoa, etc.

2. Close proximity to an area of intense business activity where the many ancillary services including printing, advertising, and professional services are immediately available.

3. An area accessible to several alternate transportation facilities serving a wide distribution.

4. A location affording the possibility of assembling a large land area, preferably with urban renewal potential.

5. A location so that the project will receive acceptance and enthusiasm from the trade that it is intended to serve.

Lower Manhattan - East Side

Lower Manhattan appears to be the one location that satisfies all of the criteria. Practically all elements of foreign trade are presently located in Lower Manhattan: Foreign bank agencies, insurance companies, freight forwarders, customs brokers and steamship line offices as well as various trade exchanges such as the maritime exchange, the cotton and wool exchange, the produce exchange, the commodity exchange, the cocoa exchange and the coffee and sugar exchange. Lower Manhattan is the center of the coffee, cocoa and sugar industries. The United States Customs House is also located in the area. The only important element that is not located in this foreign trade complex are the foreign consular offices, which are located uptown along Fifth and Park Avenues in the Fifties and Sixties. The necessity of obtaining

visas from these offices for some shipments sometimes results in costly delays because of the time required to travel from downtown to uptown and back again. Since it would be practically impossible to include every one of the functions involved in foreign trade under one roof, the only practical alternative is to locate the World Trade Center near the functional center of foreign trade activity.

The functional center of international trade has evolved as the Port of New York continued to gain world recognition. Wholesale and financial establishments, chambers of commerce, security exchanges, and other indirect services vital to the conduct of international trade have also evolved in and around lower Manhattan during the past 300 years. The complexity of foreign trade and the number of activities involved in it is so great that close communication is of extreme importance. As an extreme example, with banks closing at 3 P.M., a delay in completing the necessary endorsements for an export shipment may result in missing the banking hours and the possible default of a credit contact.

Transportation is another element to be considered. It is estimated that the World Trade Center may generate as many as 17,500 persons seeking transportation during the peak hour. The area of Lower Manhattan which has been chosen for study for the World Trade Center is served by six subways lines in addition to the H&M Railroad, two railroad ferries and the Staten Island Ferry. These mass transportation facilities plus the Brooklyn-Battery Tunnel, the Brooklyn Bridge and the Westside and East River Elevated Highways provide a concentration of transportation facilities that would be difficult to match.

Fortunately, the fourth criteria of large land area combined with urban renewal potential is also satisfied in the proposed site in Lower Manhattan which also satisfies the first three criteria. The area is composed typically of old and obsolete buildings, many of which are vacant on the upper floors. It is also made up of an old and inefficient grid system of small

blocks and narrow streets. The area was indicated for redevelopment after an intensive study by the Downtown-Lower Manhattan Association. The renewal of this area together with the west side from Barclay to Hubert Street which is being studied for redevelopment potential by the New York City Planning Commission would do much to restore this old area as an asset to the City.

Lower Manhattan - West Side

The area of the present fresh fruit and vegetable wholesale market from Barclay to Hubert Streets between Greenwich Street and West Street mentioned above might also be considered as an alternate location for the World Trade Center. The City has plans to relocate this market to the Bronx and redevelop the area for commercial and light industrial uses. Basically there is little difference between this area and the one being considered on the east side, in that both are old, with the deficiencies of small, blocks, inefficient street patterns and obsolescent buildings. The west side area, however, is further removed from the establsihed center of international trade business and finance as described above, and more importantly, the redevelopment as proposed by the City fits in with the established pattern of waterfront warehousing and light industry characteristic of the west side. This is further indicated by the zoning for the area which would be for light manufacturing as proposed in the planning commission's rezoning proposal, calling for a maximum floor area ratio on structures of only 5, far less than the requirements for structures within a World Trade Center development.

Other Manhattan Locations

Other locations on Manhattan have the disadvantage of being separated in time to a significant degree from the established concentration of international activity. The United Nations neighborhood, for example, which might be considered a logical area for an international trade center, is being developed rapidly

with commercial and residential buildings. This area, therefore, is undergoing renewal and redevelopment under its own impetus. It is also highly doubtful that land area in the magnitude contemplated for the World Trade Center development could be assembled in this area. In addition to being far away from the center of international trade on Lower Manhattan, the lack of adequate transportation facilities is a serious handicap in the United Nations area.

In summary, therefore, it must be concluded that the east side of Lower Manhattan represents the optimum location for the World Trade Center. It is the only area that satisfies all of the basic locational criteria for such a project and, therefore, the one most likely to appeal to and be accepted by the foreign trade community.

Development of Transportation Demand

Transportation requirements for the World Trade Center will, of course, depend primarily upon the level of employment within the Center. Both the magnitude and the extreme peaking characteristics of the journey to work movement are critical factors in determining the traffic loads which will be placed on the various existing and proposed transportation facilities serving the Center. Early in the studies of the World Trade Center project, several basic assumptions were developed by the World Trade Center study group to be used for the preliminary analysis of the various components making up the World Trade Center. In this connection, it was assumed that there will be 30,000 persons employed in the World Trade Center and approximately 25,000 daily visitors. These figures have been used as the base for determining the various modes of transportation which will be used to and from the Center.

It is recognized that these overall employment and visitor figures could change rather substantially when a more precise determination has been made as to what tenants will occupy the World Trade Center site and what facilities within the World Trade Center will be available to attract visitors and people doing business there. Accordingly, in the Planning Division studies we have developed transportation demand figures by mode of transportation on two assumptions.

Assumption 1

Assumption 1 uses the above employment level of 30,000 persons and 25,000 visitors daily which is based primarily on the number of employees which could be expected if the development reaches a size of six million square feet of office space as presently contemplated.

Insofar as the transportation demand is concerned, Assumption 1 also assumes that all of the employees and visitors would be new people not now entering this area of lower Manhattan which appears to be a somewhat unrealistic assumption.

Assumption 2

Assumption 2 is based on the same employment and daily visitor level but assumes that approximately one-half of the visitors, businessmen and employees will be people that already travel into and out of the area. From the standpoint of transportation requirements Assumption 2 may be a more realistic picture of the total number of new people, not presently entering this area of lower Manhattan, which would come into the area as a result of the World Trade Center. Thus, insofar as the transportation requirements are concerned, these figures may come closer to the actual number of people which would be superimposed on the present transportation system in the area. In any event, Assumptions 1 and 2 are felt to be the extremes which will be encountered in arriving at a final figure.

T A B L E I

WORLD TRADE CENTER
TRANSPORTATION REQUIREMENTS

	No. of Passengers	
	Assumption 1	Assumption 2
Average Weekday	52 500	26 300
Peak Period (4-7 PM)	30 700	15 400
Peak Hour (5-6PM)	17 500	8 750

Distribution by Mode of Transportation

In order to estimate what modes of transportation World Trade Center employees and visitors will be likely to use, a study was made of the present usage of the various modes of transportation by passengers travelling to and from the area of Manhattan south of Chambers Street on a typical weekday. This study was based on figures which were either made available or developed from a number of sources. Turnstile counts were furnished by the Transit Authority which enabled us to estimate fairly accurately the total number of people entering and leaving the area by subway on a typical weekday. In addition, we obtained traffic figures from the Jersey Central Railroad and the Lackawanna Railroad on the numbers of ferry passengers entering the area. Similarly, figures were developed on the numbers of H&M passengers and Staten Island ferry passengers entering this area of Manhattan. The Downtown Lower Manhattan Association had furnished estimates of bus and taxi passengers entering and leaving the area south of Chamber Street. Automobile passengers were estimated by undertaking a field survey of the capacity and usage of all parking lots and garages located within the area. From all of this data, absolute figures and percentages by modes of transportation were calculated to arrive at the present estimated modes of travel into and out of the area on an average weekday, 3-hour peak period, and the peak hour. These figures are shown in Table II below:

(Continues on w/ subway analysis, underground passage proposals, etc.)