

ABSTRACT

Title of Thesis: RECONSTRUCTION OF A DOWNTOWN:
THE AFTERMATH OF THE
GREAT BALTIMORE FIRE OF 1904

Name of degree candidate: Amanda Jean Wingo

Degree and Year: Master of Arts, 1993

Thesis directed by: Associate Professor Paul Groves
Department of Geography

Reconstruction following a major disaster has far-reaching impacts which can alter the functioning of a city. Understanding this process is therefore vital. The results of such a study add to the small body of literature on reconstruction following disaster and thus provides additional testing of the findings of Bowden(1967), the critical piece of literature on reconstruction to date.

Specifically, this thesis considers the process of reconstruction by looking at the structural and spatial changes predicted by one catastrophic event. Using both Sanborn Atlases and Baltimore Business Directories between 1902 and 1914, the Central Business District (CBD) is examined through the analysis of concentration, sequencing, and persistence processes. More important, however, is the extent to which these processes impact the spatial characteristics of establishments within the Burnt District over a specific period of time (1902-

1914).

A significant finding indicates that in the pre- and post-fire period Baltimore maintains a high degree of consistency within the Burnt District. However, the vertical dimension of Baltimore changes drastically from 1902 to 1914 allowing an increase in the availability of space explained by the vertical growth of buildings. The sequence of return of the "building block" establishments occurred within a surprising two years following the fire. Several defining situations fix or anchor establishments to their locations, which act to mitigate the variations in land-use patterns over time.

The findings of this study provide a spatial view of the functional districts which play an important role in the life of the CBD of Baltimore.

RECONSTRUCTION OF A DOWNTOWN:
THE AFTERMATH OF THE
GREAT BALTIMORE FIRE OF 1904

by
Amanda Jean Wingo

Thesis submitted to the Faculty of the Graduate School
of The University of Maryland in partial fulfillment
of the requirements for the degree of
Master of Arts

1993

CI

MD

Department of Geography

Advisory Committee:

Associate Professor Paul Groves, Chairman/Advisor
Associate Professor Charles Christian
Associate Professor Robert Mitchell

Maryland
LD
3231
.M70m
Wingo,
A. J.

ACKNOWLEDGEMENTS

I wish to thank most especially, Dr. Paul Groves, for his advice, gracious amount of time, and comments. His insights always gave me the push to continue. Special thanks are also extended to Dr. Charles Christian, whose time, encouragement, and focus on "the big picture" allowed for this thesis to be much more comprehensive. I thank Dr. Robert Mitchell for his editing and comments.

I would like to gratefully acknowledge the advice and assistance given by Jeff Korman of the Enoch Pratt Free Library in Baltimore, and Anne Turkos, Assistant Curator of Archives and Manuscripts, at the Maryland Room of the McKeldin Library, UMCP, who helped me acquire copies of the essential Sanborn Maps for this research.

I thank Dr. Ian Ackroyd-Kelly for the "spark" for geography. And finally, I extend unending thanks to my Mom and Dad, Tess and Bret whose moral support, encouragement, love, and patience gave me all the extra strength necessary for success in graduate school. I could not have done it without you all.

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
List of Figures	iv
List of Tables	vi
Chapter 1	Introduction: The Process of Reconstruction	1
Chapter 2	The Historical Development of Downtown Baltimore	26
Chapter 3	Data and Methodology	51
Chapter 4	Spatial Patterns of Establishments in the Pre- and Post-Fire Period	80
Chapter 5	The Sequence of Return and Persistence of Selected Establishments in Post-Fire Baltimore	115
Chapter 6	Conclusions	139
Bibliography	152

LIST OF FIGURES

<u>Number</u>		<u>Page</u>
1.	View 1: Baltimore Ruins - Union Trust Building on Left.....	2
2.	Map of Baltimore and Surrounding Region.....	5
3.	Model of Recovery Activity.....	9
4.	Commercial Segregation.....	18
5.	Base Map of Burnt District.....	21
6.	View 1: Continental and Maryland Trust Buildings.....	31
7.	View 2: Continental and Maryland Trust Buildings.....	32
8.	Buildings Map.....	33
9.	View 2: Baltimore Ruins - International Trust Company in Foreground.....	34
10.	View of Process of Rebuilding.....	45
11.	View of Pratt Street Ruins and Pratt Street Rebuilt.....	46
12.	Sanborn Block.....	57
13.	Sanborn Map Legend.....	58
14.	Enlarged Corner Buildings.....	60
15.	Grid Size for Floor Area Measurements.....	61
16.	Schematic of Collected Data.....	70
17.	Column Bar for Sanborn Atlas Data Spreadsheet.	71
18.	Address Map.....	74
19.	Traditional CBD Functions/Financial.....	95
20.	Retailing.....	98
21.	Social and Professional Services.....	101

LIST OF FIGURES (continued)

<u>Number</u>		<u>Page</u>
22.	Commercial/Industrial.....	104
23.	Governmental/Institutional.....	110
24.	Map of General Districts: Baltimore 1902.....	112
25.	Map of General Districts: Baltimore 1914.....	113
26.	Sequence of Return.....	117
27.	Directory Example Page.....	118
28.	Financial Sequencing.....	120
29.	Hotel Sequencing.....	124
30.	Theater Sequencing.....	127
31.	Printing Sequencing.....	129
32.	Department Store District.....	136

LIST OF TABLES

<u>Number</u>		<u>Page</u>
1.	Classification Scheme.....	55
2.	Establishment Frequency.....	81
3.	Average Floor Area.....	82
4.	Core CBD.....	90
5.	Framework of CBD Functions.....	91
6.	Persistence Results.....	133

Chapter 1

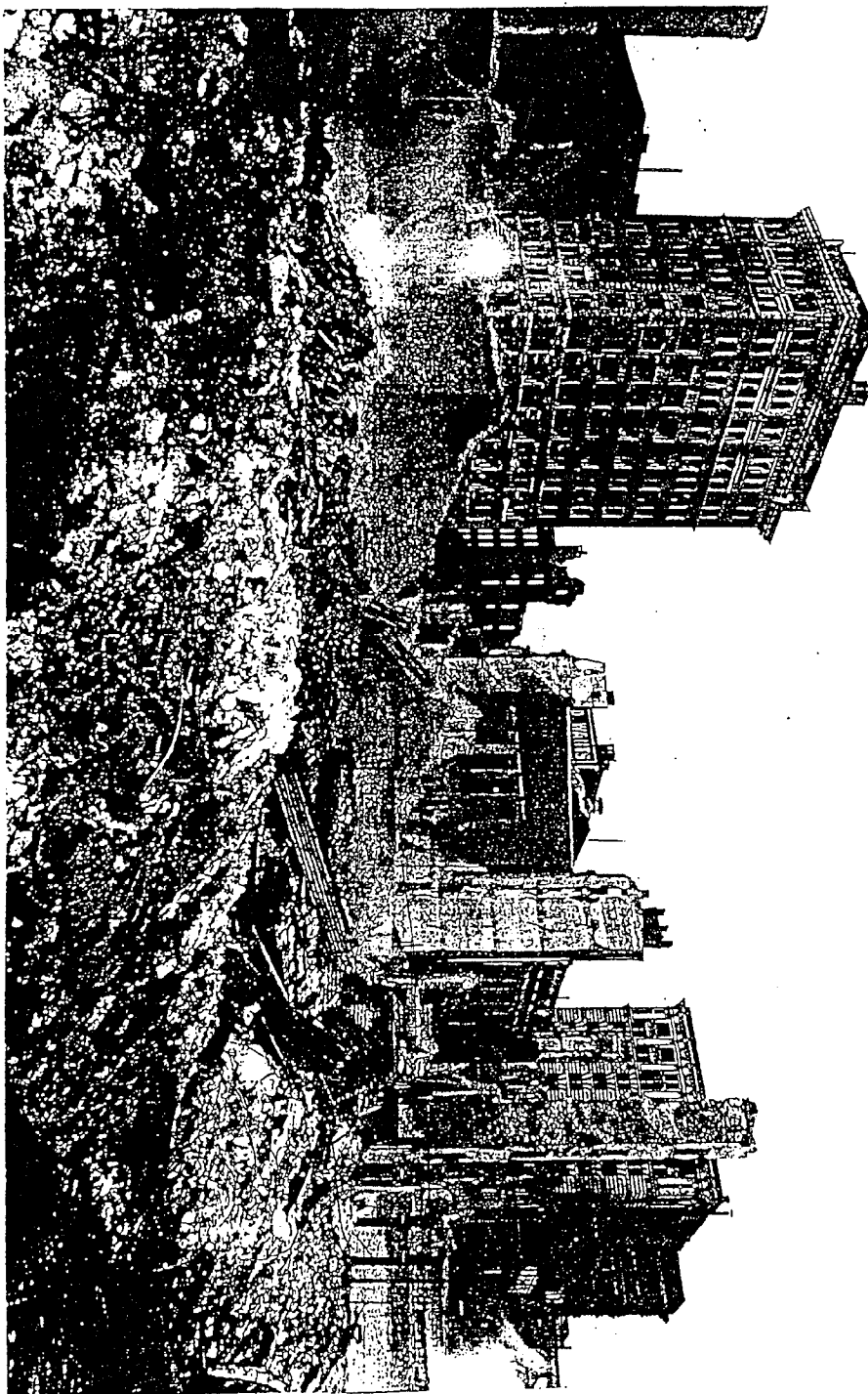
Introduction: The Process of Reconstruction

Not since the Chicago fire of 1871 had the American people been faced with so great a sense of material loss to any one community as they were when hearing the news of the great conflagration in the old Maryland city of Baltimore. Historic Baltimore added a shocking page to the history of the world's greatest disasters. (Northrop, 1904)

The fire started in the six-story brick building occupied by the dry-goods firm of John E. Hurst & Company, that stood between Hopkins Place and Liberty on the south side of German Street. The first alarm sounded at 10:48 a.m. It was an automatic alarm --- one set off by heat. (Williams, 1954)

In some respects the Baltimore fire was the most remarkable in history. The "Great Baltimore Fire" on Sunday, February 7th and 8th, 1904, consumed the very heart of a great commercial city without the loss of a single life or the destruction of a single home. And yet, so disastrous was this catastrophe that in an area of 150 acres, 2,500 business establishments, including a number of modern "skyscraper" buildings, were levelled or gutted in a brief period of thirty hours. A view looking toward the northeast, **Figure 1**, shows the skeleton of the Union Trust Building on the left and the Herald Building

Figure 1 - View 1: Baltimore Ruins
Union Trust Building on Left



Source: Hughes Company, Pratt Free Library - Photograph Collection

just peeking out in the ruins beyond it, as an example of the devastation. Some 1,500 buildings on seventy blocks of real estate were devastated causing damage estimates ranging from \$125 to \$150 million. The fires' wrath left almost 35,000 (15% of the population) at least temporarily jobless. (Ross, 1964) This fire destroyed essentially the entire downtown section and buildings which had developed over the entire span of the nineteenth century.

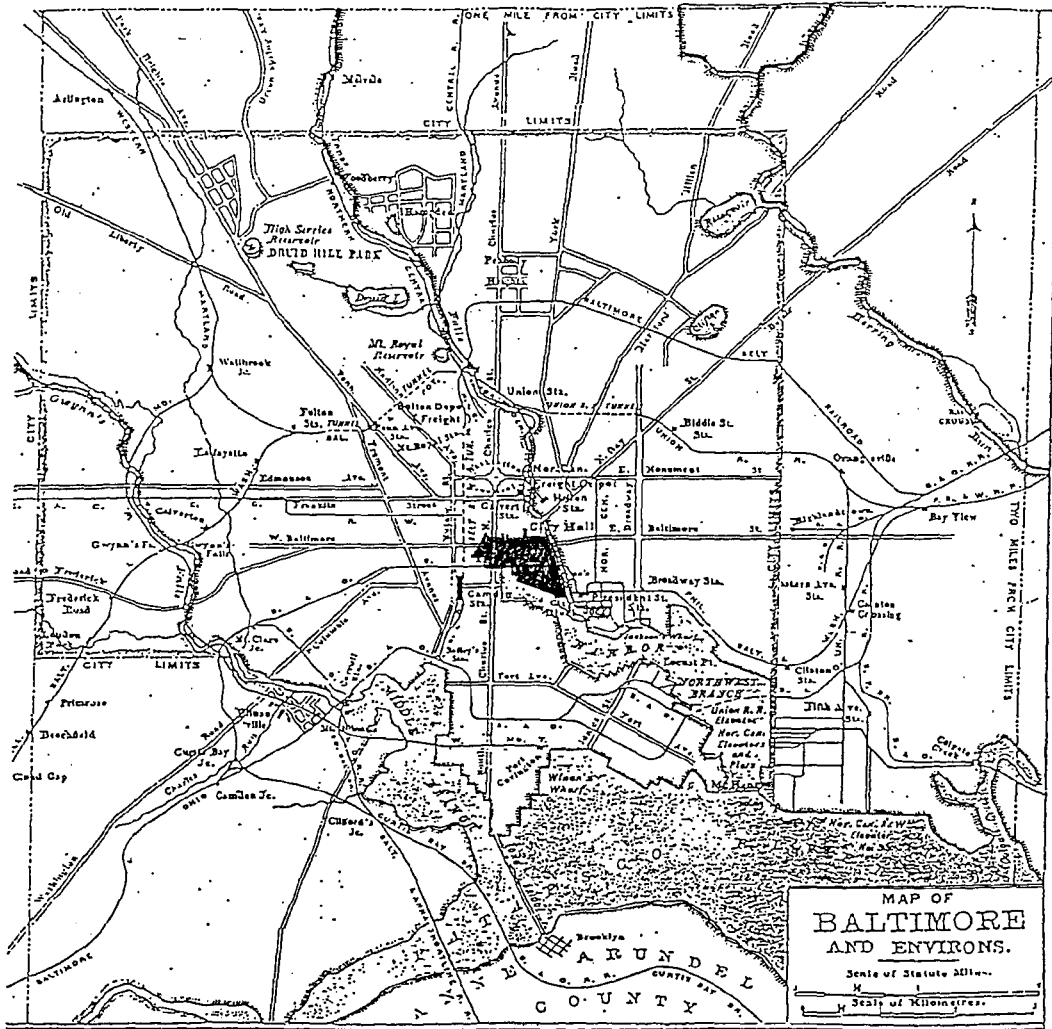
In the track of the fierce flames were many banks and banking institutions, hundreds of large office buildings built in stone and granite upon structures of steel, modern "power houses," and great mechanical plants challenging the ingenuity of future architects and builders. All these were swept away, leaving nothing in the business center of Baltimore but wreckage. The twisted pipes and wires in piles of brick and stone and iron were grim reminders of the towering structures once present. (Northrop, 1904)

Great fires took place with high frequency in cities in the nineteenth and early twentieth centuries. In the space of thirty-five years (1871-1906), four downtowns in the nation's eleven largest cities were destroyed by fire. The most impressive aspect of these fires was their large scale (i.e. Chicago 1871, Boston 1872, Baltimore 1904, and San Francisco 1906). Property losses

from such fires were massive. There were long-standing needs for improvements in the burnt district areas. These improvements included redevelopment of the district's streets, harbor, electrical utility system, water system, and buildings. Destruction provides a chance to examine a city undergoing the process of reconstruction and redeveloping its functional patterning in a different, possibly more efficient, manner than before the disaster. Traditionally, downtowns tend to remain in approximately the same location even after the widespread destruction and disruption following a disaster although individual establishments may not. (Haas, Kates and Bowden, 1977) In a spatial context, the reconstruction process determines "when" and "where" places of business and services may return to the disaster-stricken area.

By 1900, cities in America had confirmed Central Business Districts (CBDs). This downtown area was the commercial core of the entire city. Baltimore's core is represented by the shaded region of **Figure 2 - Map of Baltimore and Surrounding Region**. Yet, during this period, large cities like Chicago, Boston, and Baltimore experienced remarkable economic and population growth. The CBD was a product of planning decisions by a substantial number of different actors (i.e. public, private, individual, corporate). The decisions which follow a major disaster are not made independently of

Figure 2 - Map of Baltimore and Surrounding Region



Source: The Rand-McNally & Co., New Commercial Atlas Map of Baltimore, 1914.

those decisions which initially molded the (city) district. Property ownership, leasing arrangements, and fire insurance claims, for example, play a role in the decisions that shape the process of reconstruction. The sequence of relocation and the resulting land use patterns in the Central Business District are important consequences of the reconstruction process following a disaster. The city of Baltimore provides an appropriate case study for examining this process of reconstruction.

General Objectives

The purpose of this study is to examine the process of reconstruction within the Burnt District of Baltimore, Maryland. The research problems, however, lie in the understanding of both the structural and spatial changes predicated by one catastrophic event. The patterns that develop through the reconstruction process as well as the influences that help shape the Burnt District provide a focus for this study. The results of such a study add to the small body of literature on reconstruction following disaster and thus provides additional testing of the findings of Bowden (1967), the critical piece of literature on reconstruction to date.

An attempt will be made to identify parallels as well as contrasts between the work of Bowden and this research. With the conceptual framework of each of these works guided by the work of Rannells, the potential for

comparison is evident even with the varying temporal and methodological dimensions. The findings of this study provide a spatial view of the functional districts which play an important role in the life of the Central Business District of Baltimore.

Literature Review

Reconstruction

Following a disaster, public officials declare rebuilding as a way to "make the city better than ever." However, there are few comparative studies of reconstruction. (Rosen, 1986) Besides descriptive surveys following WWII, only the work of Rosenthal (1974), Dacy and Kunreuther (1969), and an unpublished consultant's report (Harbridge House, 1972) have compared reconstruction processes in a number of cities and have reflected on the major issues and developments. According to Haas, Kates, and Bowden who cite Haas and Ayre, 1970; Bates, et al., 1963; Drabek and Key, 1976 even studies dealing with just limited aspects of reconstruction for one city or area are rare.

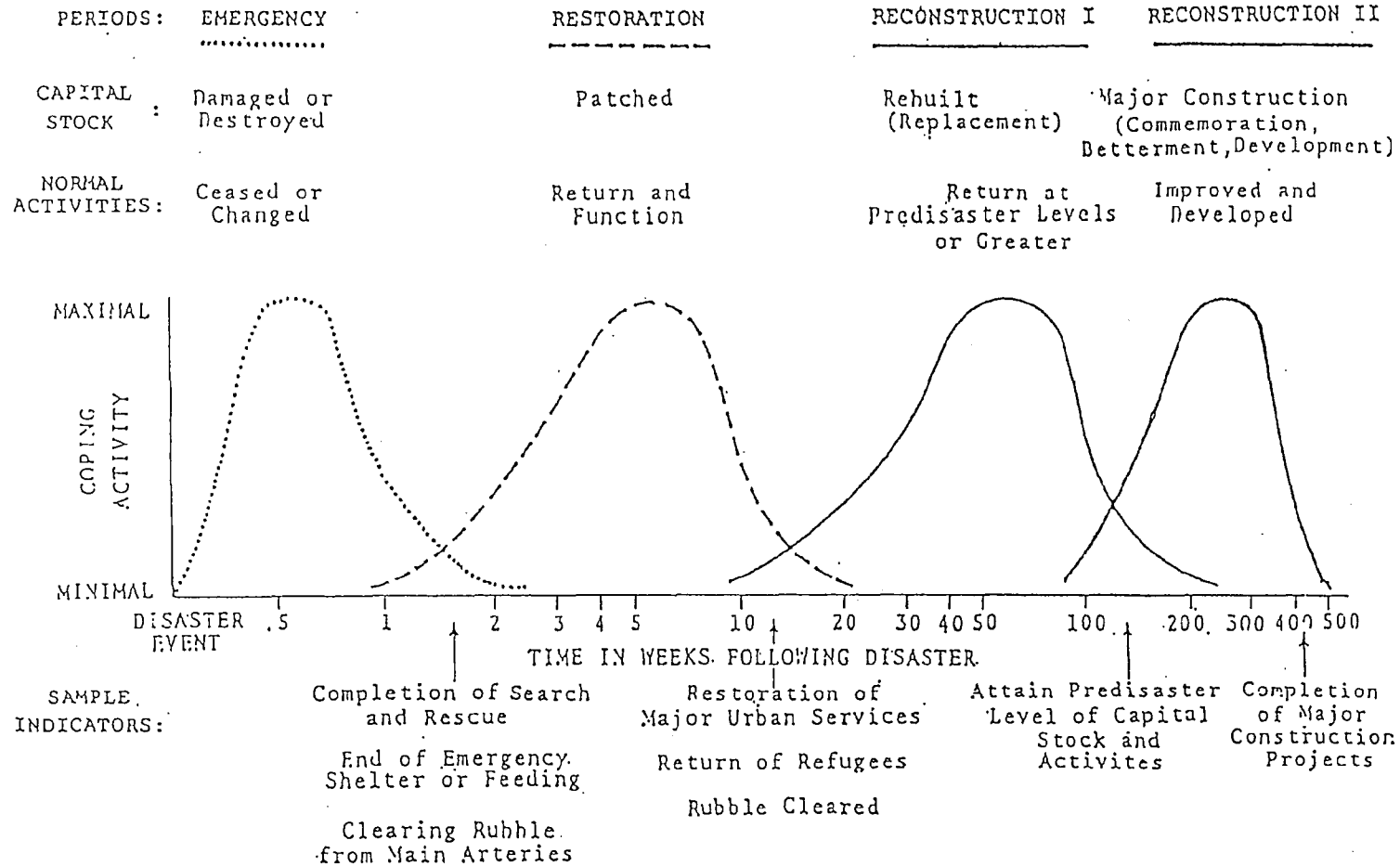
Little research emphasis is placed on the problems, issues, and alternative solutions during reconstruction following disasters (Mileti, Drabek, and Haas, 1975 cited by Haas, Kates, and Bowden 1977). Most often research concentrates on the time periods from the 1) *pre-impact period* when efforts to prevent or minimize the hazard

could take place, through the 2) *emergency period* and the 3) *restoration period*. The emergency period is defined by the completion of search and rescue, end of emergency shelter or feeding, and the clearing of rubble from main arteries. Whereas, the restoration period brings the return of major urban services and rubble is cleared. The literature review on disaster research, therefore, leads to the conclusion that it is analysis of the *reconstruction period* that may answer the important questions centering on reconstruction matters (Haas, Kates and Bowden 1977). The reconstruction period is identified by the attainment of predisaster levels of capital stock and activities and completion of major construction projects (**Figure 3 - Model of Recovery Activity**).

Central Business District

The modern Central Business District is the morphological and functional expression of two major processes occurring simultaneously with the rise of the metropolis: concentration in the area of high accessibility of establishments linked by competition and complementarity, and the separation of place of work from place of residence (Bowden, 1975). These criteria hold true at the time before the Baltimore fire, as well as providing the focal point for Bowden's research on the San Francisco Central District. His main objective was

Figure 3 - Model of Recovery Activity



Source: Haas, Kates, and Bowden, Reconstruction Following Disaster, 1977.

to yield a deeper understanding of the inner workings of the Central Business District, by describing and analyzing the dynamic aspects of the structure of the San Francisco Central District between 1850 and 1931. (Bowden, 1967)

"Downtown" was the hallmark of the industrial metropolis in America. Its scale, grandeur, density, and diversity showed the city's power and vitality. Not only had separate specialized districts of retailing, wholesaling, office, and entertainment activities developed, but also smaller clusters of specific activities had formed within these broader functional areas, such as theater or restaurant districts within the broader functional grouping of entertainment. This internal differentiation epitomized the organizational, technological, and demographic changes relating to industrialization and urbanization (Bowden 1971). Most urban historians place the origins of the modern Central Business District in the mid-nineteenth century when industrialization, initial developments of mass transportation, and rapid city growth occurred. The central district boundary is a sensitive indicator of central district growth, and of growth in the city region (Bowden, 1971). American cities even before 1900 are identified by researchers as having the beginnings of a downtown (Muller, 1981). The fact that the Burnt

District of Baltimore approximates that of its "Central Business District" is supported by the work of Muller (1981), and, in a less rigorous manner, by Mencken who identifies the burnt area as the very "heart of Baltimore" (Mencken, 1941).

Although somewhat arbitrarily, Friedrichs and Goodman *et al.* (1987) identified three dimensions that distinguished the Central Business District. The economic dimension referred to the classic functions attributed to the CBD as the city's marketplace. It was the focal point of economic activity, because of agglomeration economies for commercial and financial facilities. The social dimension referred to the population that made use of the central region. And the last dimension was the cultural, which referred to the concentration of cultural or leisure facilities in the downtown area, such as theaters, cinemas, museums, bars, and restaurants. In addition to these dimensions, the downtown also contains the highest concentration of government offices. (Friedrichs and Goodman *et al.*, 1987)

Theories of Growth

No attempt has been made, using the primary evidence of city directories and a consistent method of delimitation of the historical CBD, to show how central districts, large and small, have grown and shifted their location through time (Ward, 1966). There is a clear

need for research on the historical geography of the central business district. Bowden's critical work (1967) on the San Francisco Central Business District stimulates this area of research within the field of reconstruction analysis. "The CBD of the American city is not static," wrote Murphy and Vance in 1955. "Not only are its outlines changing and difficult to define, its land use patterns vague and hard to describe, but also the CBD, itself, is highly mobile...The picture of the CBD, however sharp and accurate it may be, is no more than a glimpse of the moment" (Murphy, Vance, and Epstein, 1955). Dickinson has also suggested a lack of historical analysis of the central business district; "understanding of the structure of the central business district can only be reached by the historical interpretation of precisely how its functions have segregated and shifted their locations, and how its buildings have been located in terms of site needs and land values" (Dickinson, 1964). Similar conclusions can be reached by Griffin and Preston's in this characterization of the Transition Zone and the edges of the Central District since the early 1900's (Griffin and Preston, 1966). Such efforts contributed little toward a much-needed theory of central-district growth (Bowden, 1967 and 1975).

There remains no definitive theory of central-

district growth. Burgess, Hoyt, and Harris and Ullman, well-known contributors to the various models of CBD growth, made only general characterizations about the direction of CBD expansion and its causes. Harris and Ullman placed particular emphasis on the CBD. They, however, went no further than Burgess and Hoyt in recognizing a generalized internal differentiation within a large CBD (Bowden, 1975). Since Murphy and Vance's studies focusing on central business districts, numerous studies have applied the methods of delineation and analysis which they had presented (Bowden, 1967).

Sequence of Return

Regularities are observable in the process and pattern of reconstruction. The dominant temporal process of reconstruction is the return of economic activities in a regular sequence; a dominant spatial process is segregation. Although these processes occurred before the catastrophe, they accelerate rapidly following it (Bowden, 1982).

Some dislocation after a large disaster is inevitable. A chain reaction of relocation, displacement and further relocation is initiated in the central city by commercial activities. This evolutionary pattern is accelerated both by the need to return to normal, and by the removal of the inertia endemic in the built city. Many businesses fail, land becomes available, and new

capital is injected in the form of insurance settlements and, more recently, by government financing (not yet occurring in the Baltimore of 1904) (Bowden, 1982).

In the central zone, the sequence of return is measured in the chronology of decisions and acts of rebuilding. Districts have priority according to the ability of activities to bid for land and pay rent. Rents result from different demands for proximity, both to the area of maximum accessibility in the central area, and to similar activities within a particular district. According to Bowden, the top ranked district is that of financial, followed by apparel retailing. The critical reconstruction decisions in this latter district were made by the department stores following the decisions of the larger banks and other financial institutions which identified the financial district (Bowden, 1982).

Synchronous with the return of commercial-industrial districts is a more efficient and accelerated segregation. The process results generally from the tendency for related or linked activities to force out incompatible and non-complementary activities. The larger the proportion of the city destroyed and inertia removed, the more effective the segregation. Bowden proposed that commercial districts that overlapped each other in the pre-disaster central area become discrete (San Francisco, 1906-15) (Bowden, 1982).

In major urban disasters, the sequences of return and the process of segregation ensure that each district expands and returns at a lower density than before the disaster, and this produces cumulative waves of areal expansion at the residential edges of the city. Indecision in the area just beyond the central district forces low-priority activities (there before the disaster) to move toward the edge of the city. The result is an expansion of the city's building area that often doubles and sometimes triples the area originally destroyed. These concepts are not specifically tested for Baltimore, although the areas of expansion potential become evident.

As with Baltimore in 1904, the destruction of San Francisco in 1906, was almost total in certain areas of the city. In Baltimore the fire destroyed the Central Business District, whereas, in San Francisco the destruction was in an area that had been virtually discarded by the Central District in the previous twenty years and in the fill lands to the east of the Central Districts. Baltimore's reconstruction efforts only had limited space on the western edge of the Burnt District, whereas San Francisco had land (space) to move or grow into during the reconstruction process.

Degree of Concentration/Segregation

Hurd and Haig, during the early twentieth century,

approached the problem of defining the CBD in a different way. They saw the Central District as a collection of districts, each made up of competitive, complementary, and auxiliary activities (Hurd, 1903 and Haig, 1927). Rannells' (1956) conceptual framework for the study of change in the city and its core is a major contribution to this study. Rannells conceived the city as made up of *establishments* which are located where they are largely as a consequence of the "net balance of pulls exerted on each establishment by its *linkages* with others" (Rannells, 1956). *Establishments* are defined as, "individuals or groups occupying recognizable places of business, residence, government, or assembly within or upon units of land. Establishments are also considered to be units of land use which may be classified according to their major activities" (Mitchell and Rapkin, 1956). *Linkage* is defined as a relationship between establishments characterized by recurrent interactions which require movement of persons or of goods or exchange of information (Rannells, 1956).

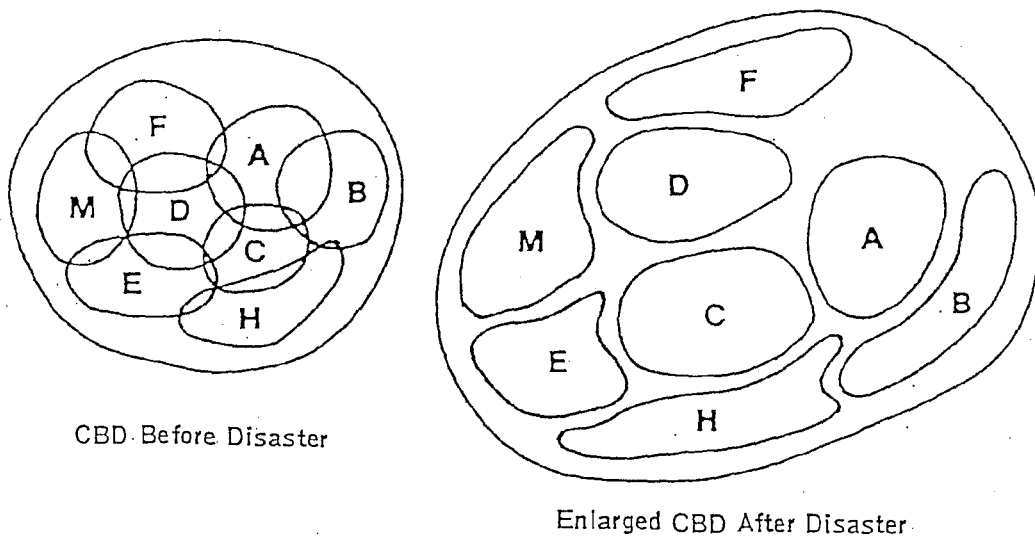
Linkage is a key element in the conception of the city as having concentrations of establishments. There exists the tendency for the linked establishments to seek proximate locations. Three forms of linkage which are most important are: competitive, complementary, and ancillary. In a competitive linkage "each establishment

strives to hold or increase its own share of the same market, for goods or services, dealing either with a generalized public, with groups of establishments, or with a single establishment" (Rannells, 1956) In a complementary linkage two "establishments supply the same market or a single customer-establishment with goods or services which are interrelated. The products of both establishments may be mutually interdependent; or the product of one establishment may supplement the product of another" (Rannells, 1956). In ancillary linkage services are "supplied by one establishment to the members of another" (Rannells, 1956). These three linkages fundamentally provide for the spatial arrangement and clustering of land use in the city (Bowden, 1967).

When commercial districts return in sequence after the disaster, there is an acceleration of segregation of "like" activities. The segregation of different types of work operates at most times in the growing clusters and districts of any city, resulting from a process of exclusion. This exclusion process is the tendency for related or linked activities to force out incompatible and non-complementary activities (Haas, Kates and Bowden, 1977).

This general process is shown in **Figure 4 --- Commercial Segregation** (Haas, Kates and Bowden, 1977,

Figure 4 - Commercial Segregation



Source: Haas, Kates, and Bowden, Reconstruction Following Disaster, 1977.

88). The formerly overlapping and mixed districts of the circled area have become distinctive and separate in a newly enlarged post-disaster central area (a process extensively documented by Bowden, for 1967 and 1974). However, studies by Bowden regarding the location of economic activities in commercial cities (1800-1860) show a greater order in central land use than the literature previously indicated.

Activities with a strong tendency to segregate are found in purer, more specialized concentrations following a disaster (Haas, Kates and Bowden, 1977). This theory remains a central hypothesis of the research endeavor. Particularly, as the growing number of attempts to gain insight into the urban past have fallen short in allowing for the growth of cities to be viewed as a process (Pred, 1966).

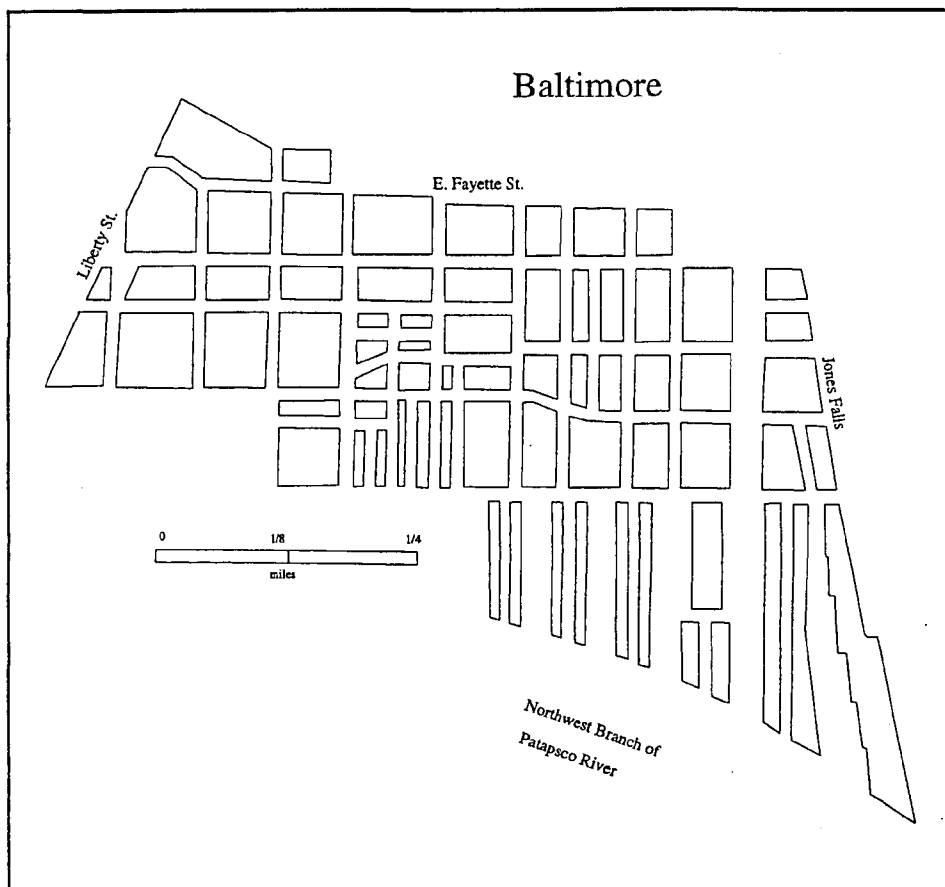
Reconstruction in the downtown area of Baltimore following the great fire of 1904 took place in a short period of time but also accelerated the growth and development of that part of the city. This research is designed to provide answers to the following two questions:

- What was the degree of a) *concentration* and b) *segregation* of establishments in the post-fire (1914-1915) period and in the pre-fire (1901-1902) period?
- What was the a) *sequence* and b) *persistence* of relocation of selected establishments in the Baltimore CBD in the post-fire period (1905-1914)?

Because of the need to identify an area which is static, an area within central Baltimore was outlined and consistently defined throughout the study as the Central Business District (**Figure 5 - Base Map of Burnt District**). The set of blocks along the lower edge of the map are piers for loading and unloading with the shaded areas representing water. Dynamic aspects of the structure of the Baltimore Central Business District between 1902 and 1914 are examined through the analysis of segregation, concentration, and sequencing processes. More important, however, is the extent to which these processes impact the spatial characteristics of the district over a specific period of time (1902-1914).

Considering the paucity of studies on the process of reconstruction in a large city in response to a catastrophic event, this research sets out to identify and evaluate this process in the Burnt District of Baltimore. First, tied closely to the research questions of Bowden (1967), structurally and spatially, the changes in the CBD in the pre-(1902) and post-(1914) fire periods provide the basic "footprint" of the area (i.e. what types of establishments are located in the CBD). Structurally, analysis of the average square footage per establishment type, using the total square footage for each establishment within the Burnt District allow for

Figure 5– Base Map of Burnt District



Source: Digitized from Kirk, 1905.

the identification of the relative role of various functions in the CBD. Spatially, the degree to which agglomerations form or, conversely, the degree to which "scattering" occurs speak to the general efficiency of the city. The level of concentration and the degree of segregation among functions also play a key role in determining the "make-up" of the city.

The concern about "how" and "when" the process of reconstruction became a dominant force in the rebuilding of destroyed buildings, raised several questions. These questions highlight the many factors in the reconstruction process and suggest the focus of the first part of the analysis. First, through looking at the initial analysis "footprints", it is evident that there are certain establishments or functions which set the tone of the reconstruction process. By investigating this set of functions: Traditional CBD Functions/Financial, Retailing, Social and Professional Services, Commercial/Industrial, and Governmental/Institutional, the building blocks of the reconstructed central area can be identified. Secondly, in asking the questions concerning which establishments were built in the reconstructed burnt district and the order in which they were built, those functions that act as "leading sectors" in the growth and formation of the new CBD are identified. When asking which establishments

returned, in what location, and at what pace, there is identification of not only which industries are logically tied to this "space" but also of those industries which can no longer compete for that "space." Linkages between the functional integration and the functional exclusion of the establishments in the Central Business District form the basis for the structuring of a more purposeful and efficient city.

Considering the differences with the present model of reconstruction analysis and the Bowden model (1967), there are several discerning characteristics of the development which must be identified. Bowden in his eighty year analysis of the San Francisco Central District, presents a "sequence of return" analysis which encompasses the constituent elements of six districts within the San Francisco area. The original data for the analysis comes from a collection of city directories for San Francisco, and relies on the conceptual framework of Rannells' (1956) for the study of change in the city and its core. The overwhelming concentration of the analysis rests on two districts --- the Apparel-Shopping District and the Financial District, both divided into even more specific sub-areas. Bowden's description of these districts assessed the functional structure of the core. The remaining districts that Bowden analyzes although similar to the "building block" functions chosen in the

Baltimore analysis focus on the process of peripheral accretion. Because this process occurs outside the actual Burnt District, comparisons with his study cannot be made for his other four districts (i.e. hotel, theater, household furnishing, and Upper Market Street - civic center to movie district).

However, the similarities between these two decisive pieces of research in the field of reconstruction analysis present evidence that although temporal dimensions and statistical measurements are different, some themes are common throughout. Just as **Figure 24 and 25** show for Baltimore, "in the core districts the changes that took place as a result of the earthquake and fire of 1906 were not spectacular." (Bowden, 1967, 524)

However, it is posited that the functions within the CBD will become more concentrated and segregated with reconstruction and, hence, that reorganization takes place within the context of contemporary (i.e. early twentieth-century) decision making. Given these processes of increased concentration and segregation after disaster, this research seeks to understand how establishments return to the destroyed area in the post-fire period. Overall, a spatial-temporal model is intended to provide some "image" of the reconstructed area allowing for improved understanding of the impact

disaster has on the functions of a city district.¹

¹ For the purpose of this study, the following definitions are used:

Concentration is the degree to which establishments are found in a specific spatial area.

Segregation is the extent to which establishments are found in a specific spatial area to the exclusion of other establishments.

Chapter 2

The Historical Development of Downtown Baltimore

Because this research explores the process of reconstruction by focusing on one district --- the Central Business District of Baltimore, Maryland --- a discussion of the historical development and influential institutions of the area as well as the "climate" of the time are crucial in providing context for understanding this research.

Structure of Cities

The rapid development of new regions of the country after 1860 created great opportunities in building new cities, but by 1890 this possibility was no longer open because the urban network had been substantially completed. Most of the American cities destined to achieve even moderate size had been founded by 1890. As New York became one of the great cities of the world, second ranked Philadelphia though dropping to third among American cities, its population trebled during the fifty years from 1860 to 1910. Baltimore, Philadelphia's great ante-bellum trade rival, grew more slowly, falling from third place in 1860 to seventh in 1910. (Glaab and Brown, 1976)

To understand the complexity of the modern American city, one must examine contemporary patterns of land rent and the economic requirements of industry and commerce.

But, even more importantly, examine the processes by which location decisions were made when the industrial and commercial structure of the city was being established in the late nineteenth and early part of the twentieth century.

According to Rannells, every establishment is engaged in several systems of activity and is connected with other establishments in each of these systems. The totality of urban activities may be described by tracing these linkages between establishments, both for relationships of different kinds of activities and for like-activities. The total balance of pulls put on each establishment by its linkages with others is a major factor in the spatial arrangement of land uses. Given the processes following the Baltimore fire, each new establishment or returning establishment tends to locate where the forces of its expected linkages will be in equilibrium. (Rannells, 1956)

In looking at the changing functional relationships among establishments, groups of establishments may become fixed or anchored to their locations, whether these activities have a strong nucleus, such as a major government building and stock exchange, or whether an entire cluster of establishments functions as an entity. [This may in fact represent the "staying power" of the establishments which survived the reconstruction

process.] "The physical pattern of land uses in any urban area is strongly shaped by its prior development; further changes in that pattern will take place around more firmly fixed positions of the dominant activities." Although patterns of land use changing combinations of pulls exerted by linkages which bring about changes in organization of activities, variations in land-use patterns are constrained by anchored activities. (Rannells, 1956, 20)

Rannells identified other factors besides linkages, which further restrict the free adjustment of land-use patterns. Some of these include: availability and cost (or rent) of suitable space; inertia of long-term commitments of present accommodations; difficulty and cost of moving existing installations; legal, such as zoning, restrictions; or simply lack of understanding as to the relative merits of alternative locations. (Rannells, 1956)

For example, it would be easy to understand why industrial districts are where they are if there had been city planning or zoning regulations dating to the mid-nineteenth century. Since zoning regulations are largely a product of the twentieth century, and planning rarely affected the major location decisions of giant enterprises until the latter half of the twentieth century, one must look for another explanation for how

the industrial and commercial structure of the nineteenth-century American city evolved. There is evidence to suggest that local government should be considered more extensively in the search for those making the more noteworthy decisions. (Palm, 1981)

Background of Fire

Extensive urban fires were fairly common occurrences during the eighteenth, nineteenth, and early twentieth centuries, particularly before building codes and zoning ordinances appeared. Some cities even experienced a second disastrous fire in the wake of amenable fire conditions. Several significant city conflagrations in the history of the United States would include: Chicago, 1871; Boston, 1872; Baltimore, 1904; Salem, 1914. (Donnell, 1977)

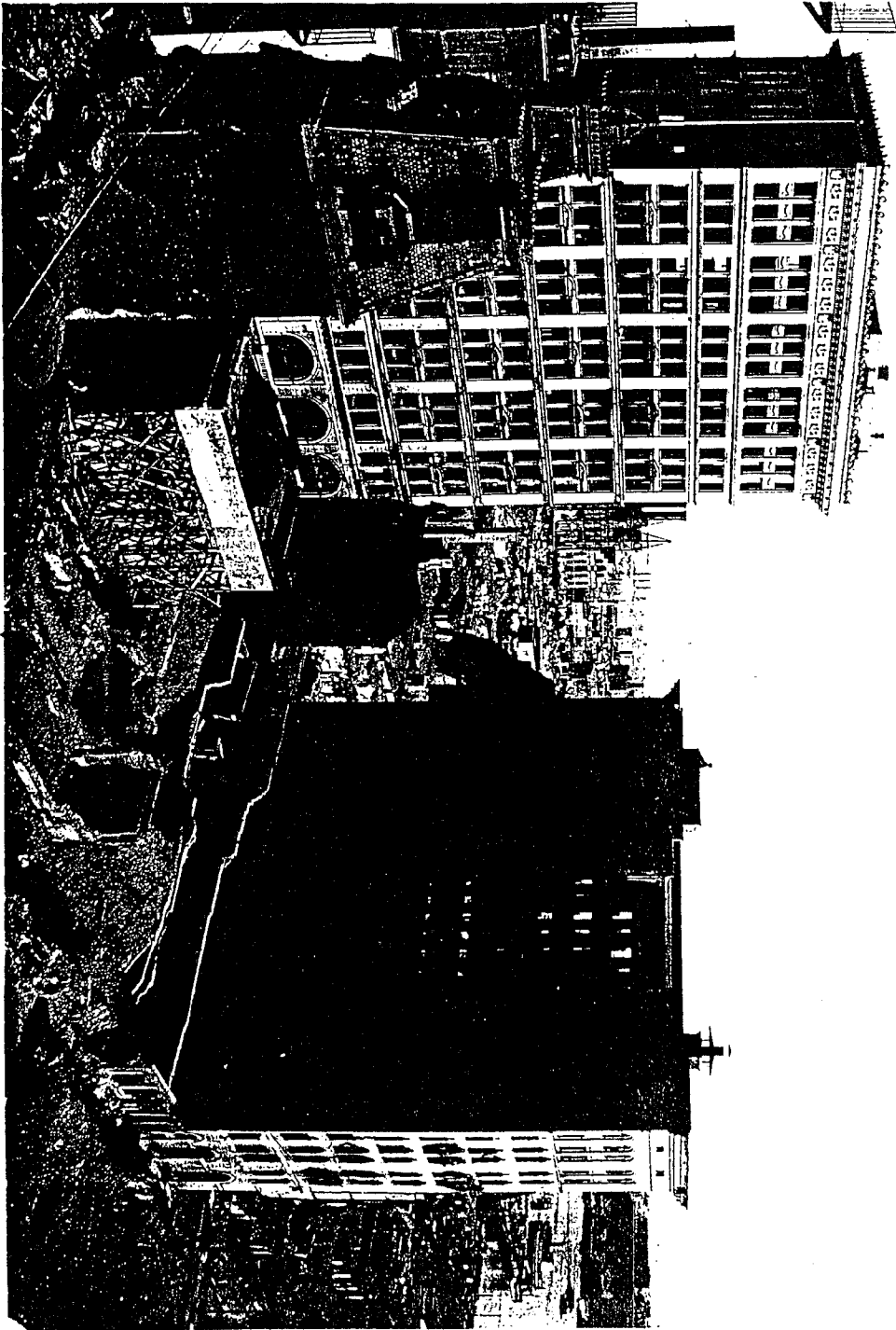
The causes of such fires although much debated can not always be determined in any reasonable detail. In the case of the Baltimore fire what was decisive in defining its size was the weather. A weekend of high winds and freezing temperatures, combined with poor fire equipment and a disorganized fire department added to the extent of the fire.

On Sunday morning, February 7th, 1904, detachments of fire departments from Washington, Philadelphia, Wilmington, Anne Arundel County, and York were called to help only to find that many companies could not attach

their hoses to Baltimore plugs because of differences in coupling sizes, though the fire fighters' efforts were long and valiant. The Maryland Trust building, the Continental Trust, the Union Trust, the Atlantic Trust and Guardian Trust, the Calvert Building, the Equitable, were "fireproof symbols of finance and power" yet burned like torches as evidenced by photographs. (Olson, 1980) **Figure 6** and **Figure 7** (two views of the Continental and Maryland Trust Buildings, among the crumbling ruins) affirm the destruction caused by the disaster in the so-called "New Baltimore District" (See **Figure 8 - Building Map**). Clearly, Baltimore would require substantial reconstruction efforts to regain its functions. A final illustration of the city's rubble shows the International Trust Company on Baltimore Street in the foreground of a view looking southwest (**Figure 9**). These photographs remove any doubts as to the severity of the Baltimore Fire of 1904.

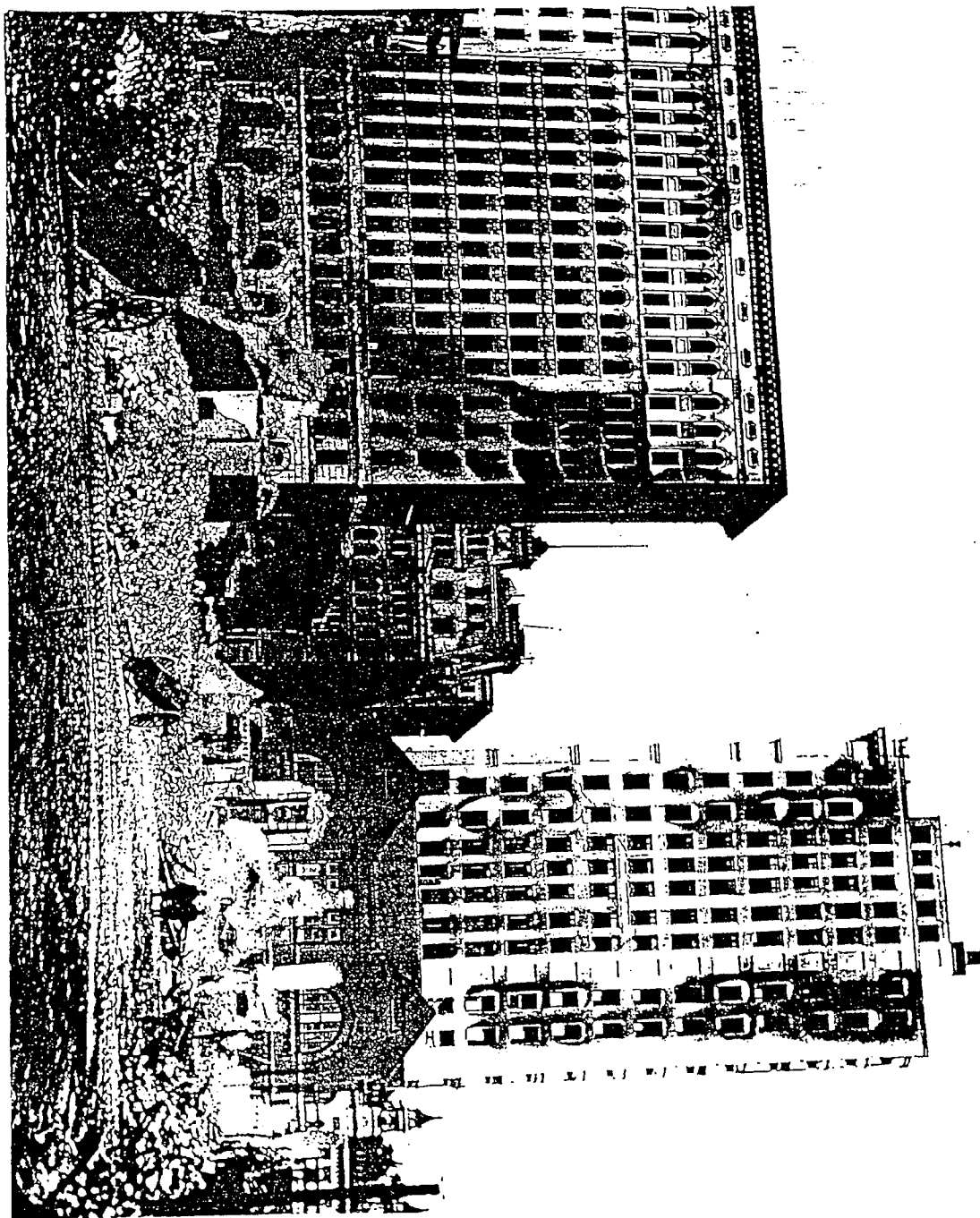
The Burnt District had become so fully commercial that problems of recovery were largely those of business owners, as virtually no residential building existed in the area. The reconstruction problem highlights the fundamental importance to the actual city of a legal and financial substructure. The problem of municipal government was to "find" property lines, to "locate" the street levels, to reconstruct and mark on the landscape

Figure 6 - View 1: Continental and Maryland Trust Buildings



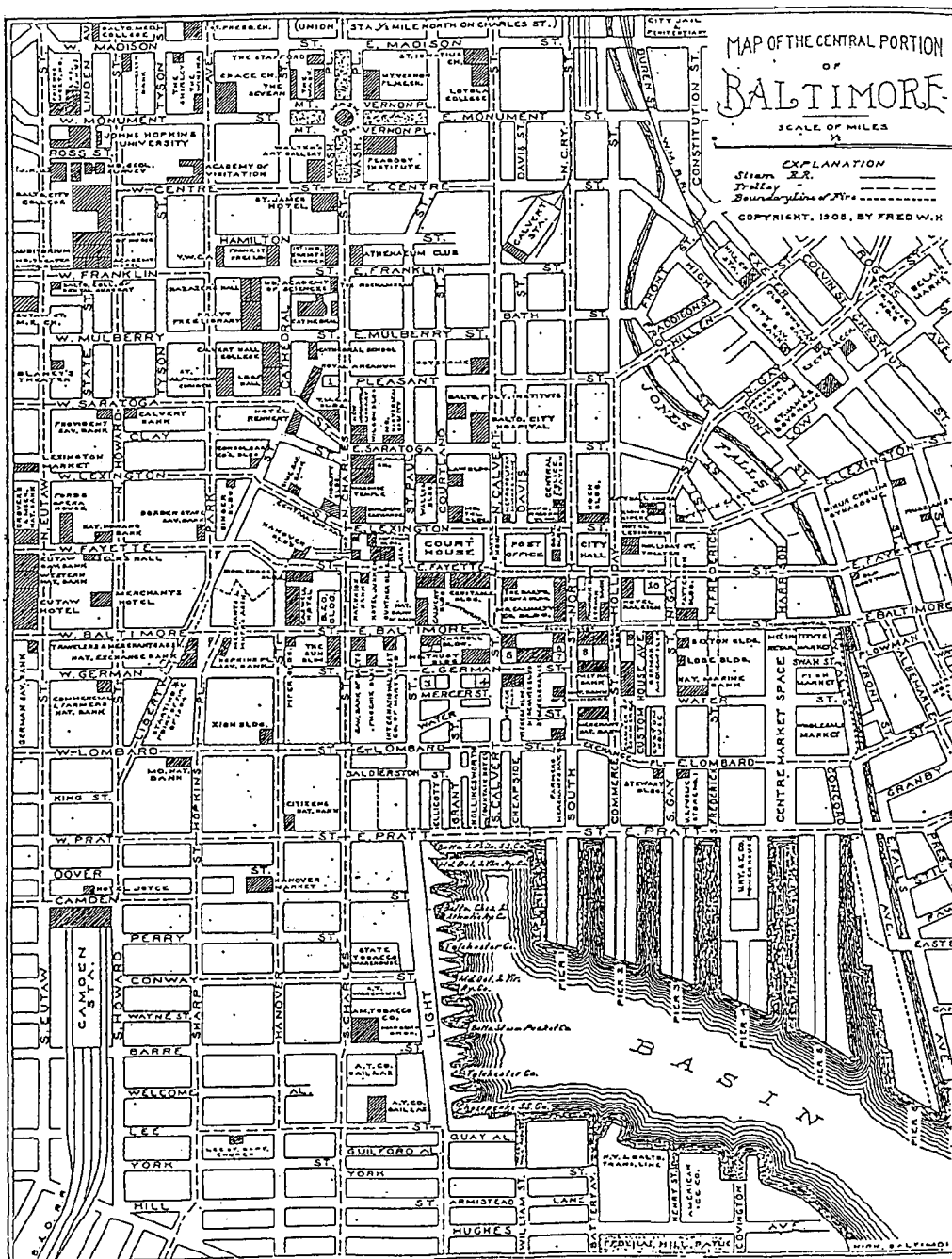
Source: Hughes Company, Pratt Free Library - Photograph Collection

Figure 7 - View 2: Continental and Maryland Trust Buildings



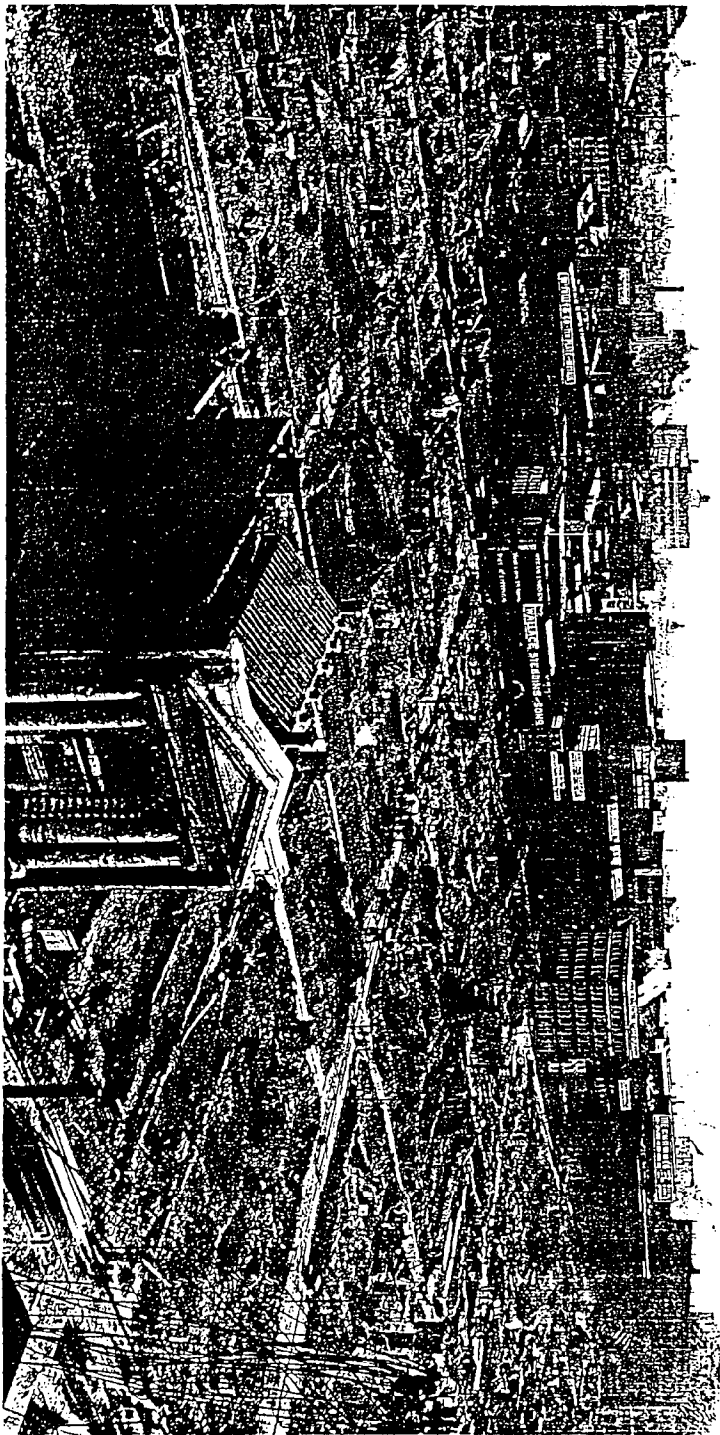
Source: Pratt Free Library - Photograph Collection

Figure 8 - Buildings Map



Source: Fred W. Kirk, 1905

Figure 9 - View 2: Baltimore Ruins
International Trust Company in Foreground



Source: Hughes Company, Pratt Free Library - Photograph Collection

those visible tokens of ownership. (Olson, 1980)

Private individuals and corporations went after insurance claims and mortgage money to finance the rebuilding of the private spaces. It is estimated that some twenty-nine million dollars in insurance claims was paid. (Olson, 1980) The integration of Baltimore into the national economy was a saving grace as it meant that the risk had been spread nationwide and claims would not all be paid locally. However, the level of insurance and manner in which schedules were arranged had to do with the strength of the establishment within the district. One could infer that more prestigious establishments would receive larger payments more quickly than those not labelled "prestigious". Unfortunately, assessments are generally an underestimate, but an updating process accounted for a part of the difference. The city government acquired ten acres of additional street space and twenty-eight acres of docks and markets, and spent over \$7 million on public improvements, rebuilding streets and docks. It collected \$1.1 million from 2200 fronting property owners for the benefits of these improvements. Land values were believed to have increased by 50 percent. (Olson, 1980)

Baltimore

Through examination of the historical development of the city in general and the political influence which

manifest themselves in the form and function of the Central Business District, it is evident that the factors and players involved are almost limitless. Therefore, it is necessary to address the specific components and historic facts which focus on this case study of the Burnt District of Baltimore, Maryland.

Baltimore was a city that could boast of an exceptional harmony of planning through its investments in port and rail facilities. Mayor Hayes of the City of Baltimore with his "Greater Baltimore" strategy in 1903, reflected the thinking of the reform movement. At the top of the list of reforms was a new sewer system for the city. The strategy also reflected the idea of government as go-between, brokering investments in the city, ordering and synchronizing a city-building process that had many centers of action and many sources of initiative. It was the fire that interfered with his grand plan. The great Baltimore fire of 1904 destroyed the whole of the town laid out in 1730. Funds allocated for reforms were, however, diverted to the efforts for a swift reconstruction. (Olson, 1980)

Within the context of reconstruction, governmental intervention played a key role in the activities of reconstruction. Mayor Hayes was authorized to appoint a Special Commission (March 1904), known as "The Burnt District Commission," who would continue in office until

the work of the Commission was completed. The Commission was given certain powers and charged with the following duties:

- (1) To lay out, open, extend, widen, straighten or close any street, lane or alley, or any part thereof, in burnt district.
- (2) To establish and fix the building line and the width of the sidewalks on any street, lane or alley now existing or to be laid out, opened, extended, widened or straightened in burnt district.
- (3) To open public squares and market spaces in said burnt district;
- (4) to lay out additions and extensions to be made to the public wharves and docks of Baltimore city, and to be made to the basin or harbor of the city of Baltimore, and to acquire for and in the name of the Mayor and City Council of Baltimore the lands and property within said Burnt District which may be necessary to make such additions and extensions, and to define the extent to which said harbor or basin is to be filled in said burnt district. (Baltimore City Code, Appendix A, 1236-1237)

These powers suggest that institutional factors played themselves out in the urban landscape throughout the reconstruction process. Appropriations were made for a part or the whole of the expense to be incurred in carrying out the preceding duties. The Commission, in order to accomplish this work would "promptly proceed to acquire in the name of the Mayor and City Council of Baltimore, and by the methods in this Act provided, such lands, interests, rights, franchises, privileges or easements as may be required to open, extend, widen or straighten any of the affected streets, lanes or alleys;

and to establish and fix building line and the width of sidewalks, and to establish and open public squares and market spaces and to make such additions and extensions to the public wharves and docks and to the basin or harbor of Baltimore." (Baltimore City Code, Appendix A, 1239)

The Commission shall determine whether any and what amount in value of damage caused to the owner and determine any right or interest in any ground or improvement within the burnt district. Having determined the whole amount of damages and taking into consideration of all these advantages and disadvantages, the Commission shall assess and pay one-third of the total amount of damages on all the ground and improvements. In addition, no street, lane or alley was to be opened until damages were paid or money paid into court. (Baltimore City Code, Appendix A, 1243 and 1252)

The Mayor and City Council of Baltimore were empowered for the purposes of providing the money for defraying the expenses of the Commission. Additionally, they were responsible for expenses in the acquisition by the city, by purchase, condemnation or any other method, of the property, interests, rights, franchises, privileges and easements required to execute the powers and to carry out the work of said Commission. (Baltimore City Code, Appendix A, 1257)

Through the Burnt District Commission, the government imposed fireproof mandates and fireproof regulations. Among the building ordinances, specific fireproof materials were required in certain buildings, such as hotels, office buildings, and workshops. Floors, partitions, and stairways would require fireproof construction. Fire escapes and alarms were required in buildings over two stories in height when occupied for certain uses (eg. dry goods or industrial). These fire-escapes were to be kept in good repair and free from obstructions.

Baltimore was a city which could distinguish itself economically from other cities by the strength of several of its building booms. This somewhat reflects the success of the geopolitical strategies of each generation of Baltimore entrepreneurs. The locational advantages of Baltimore in the world system of cities can be appraised largely in terms of supply and demand for coal, iron, wheat, and oil. Yet, these peak years (1905-1914) of construction required not only large public investments but also the mobilization of private capital. "Each investment applied a new technology, created a new cost structure of transport; and resituated Baltimore in the circuits of world trade." In each generation a growth in the city's exchange with the outside world was matched by changes in its metabolism, and followed by variations in

its morphology. (Olson, 1979)

Yet, the development strategies differed between the Piedmont and Tidewater. The Piedmont absorbed the city annexation of 1888 with its rolling country, steep valleys, and graveled plateaus and created municipal parks and parkways. The Tidewater with its low-relief and malleable conditions often meant dredging and filling. Instead of conforming the streets to the landscape, as in the Piedmont hills and valleys, the engineers rearranged the landscape, creating the typical cogged edge of the harbor, with its fans of rail spurs, its long pier warehouses, and its slips angled into the river. (Olson, 1980)

Investments were also made in port development for deepening ship channels, lengthening piers, and extending perimeter. Just as each building boom was characterized by a large increase in the height of the tallest buildings (approximately 12 stories), depths of navigable channel, and lengths and tonnages of the largest ships and locomotives, the rebuilding following the Baltimore Fire had similar effects. (Olson, 1979)

Baltimoreans took hold of the idea of improvements even before the ashes were cold. There were high hopes that city officials would take advantage of the fire's destruction to improve the quality of life in the burnt district. In effect, they were recommending an almost

overnight resolution of environmental problems that had been accumulating in the area for over half a century. (Rosen, 1986) Both business and civic leaders called for environmental changes, including stricter building standards, the elimination of above-ground electric utility poles and wires, and the constructing of public parks in the business district. Extensive redevelopment of the dock and wharf facilities of the burnt-out Inner Harbor were made. Less than two weeks after the fire, a sixty-three-member Citizens' Emergency Committee was appointed by Mayor McLane (Mayor following the death of Mayor Hayes) of Baltimore, and charged with development of a comprehensive plan of environmental redevelopment. The Committee responded quickly with a program of improvements that included a dozen street widenings and extensions, several park proposals, a plan for stricter building codes, a far-reaching dock and wharf improvement project, and a sewerage improvement plan. (Rosen, 1986)

Baltimore's political agenda as of 1895, when Progressive reformers took control of Baltimore's city government was beginning to change after almost twenty years of sustained crusading against the political machine that had ruled Baltimore since 1871. Opposed at every turn by utility companies and the state Republican and Democratic political machines, the fire had finally given them the great opportunity for change. The fire

had literally cleared away many of the most important physical barriers to redevelopment. There developed a sense that city government would no longer permit private interests to stand in the way of public improvements. No matter what the opposition, it became evident that the long hoped for improvements would be made. (Rosen, 1986)

Nearly every infrastructure in Baltimore in the aftermath of the fire, became marked for renovations and additions even outside the burnt district. Baltimore was plagued with problems that burdened the entire city. Both business and community needs caused pressure for improved streets. Characterized by crooked and narrow thoroughfares, dead ends and cumbersome jogs, steep grades and heavy congestion, the streets exacerbated the difficulties within the city, especially the Central Business District. The wharf facilities in the Inner Harbor were even more atrocious than the streets. Many were too narrow and shallow for modern ships, let alone able to accommodate the coastal and international steamship business. To add to these concerns, the burnt district's sewerage system (or rather lack of sewerage system) meant a plethora of problems, from flooding to contamination of water to an unbearable stench. Finally, the Burnt District suffered from a lack of open space which caused a suffocating sensation which was only increased by many of the other problems, such as smell

and street congestion. (Rosen, 1986)

These changes of scale and three-dimensional form are correlated with recognized trends in land-value changes over the city's two-dimensional area. The changes in the outer segments of the city implied the transformation of interior segments. The central district can be identified consistently as it was rebuilt in each boom of building. Each boom addressed the problem of congestion through a series of street widenings, regulations, or faster transportation. (Olson, 1979)

Investment provides the connecting link between the city and everything else. Outside investments provide both the pulse of the world economy and the flow of capital accumulation inside the city. Investment also allows us to look at the past as a succession of "futures". (Olson, 1979) The reconstruction of downtown Baltimore after the great fire of 1904 represents an outstanding case of this investment "synergism", although it would become obsolete and then "renewed" sixty years later. A final reason for identifying investment as linking agent is that it structures the social redistribution in the city. Investments provide city space and organize a regional geographic space. Yet, because the physical life of such investments is much longer than the investment horizon, the sunk capital in

buildings, streets, docks, and reservoirs becomes part of an environment system whose capacities can be underutilized or overloaded in subsequent waves of construction. (Olson, 1979)

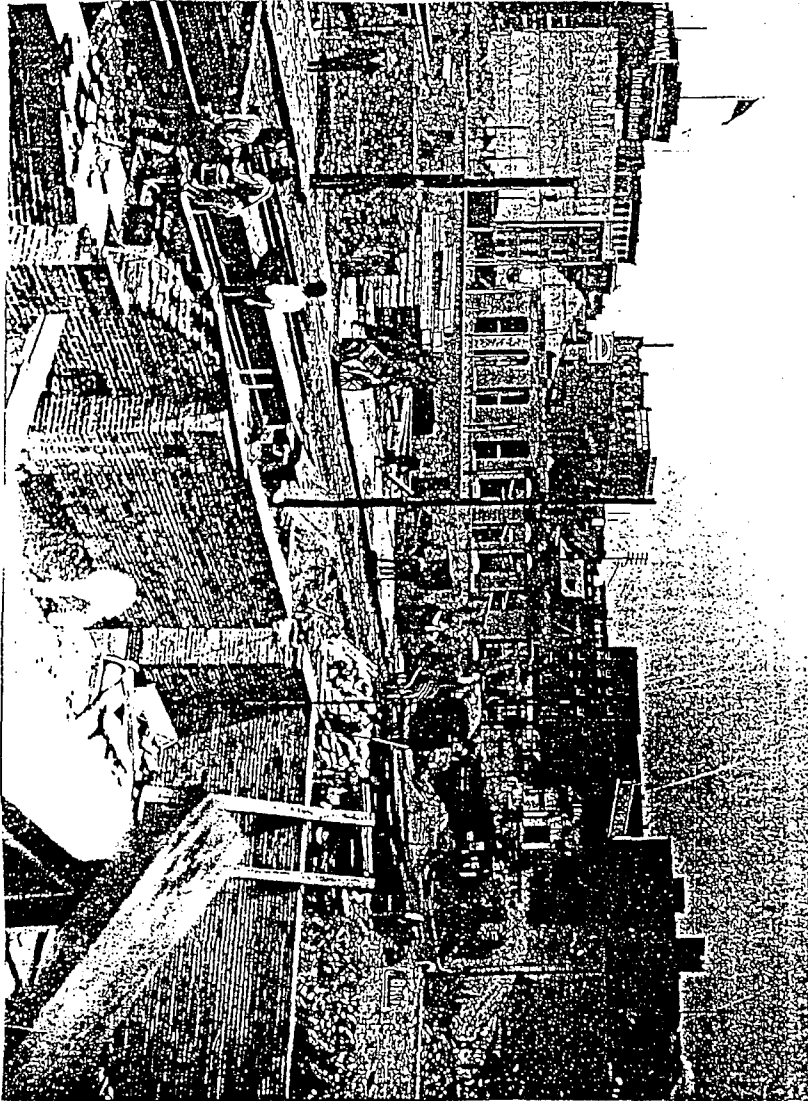
Response to Fire

To no one's surprise, a prompt response to the great fire was a good deal of fire prevention. The numbers of fire fighters and horses was increased by 50 percent. Alarm boxes and hydrants were installed to cover the larger urban territory being developed. A high-pressure water service was brought into operation covering seventy acres. The fire insurance business also increased dramatically, as the risk of fire provided the "spark" to the development of a building code. (Olson, 1980)

Physically, the city was rebuilt much as it was before (**Figure 10**). Changes were fairly discreet. (Olson, 1980) The steel-frame skyscrapers were rebuilt, as were the low-rise buildings lining streets, such as Pratt and Gay (**Figure 11**)². The upper photograph shows the smoking ruins left by the fire, whereas the lower photograph provides approximately the same view taken in March of 1906. The major changes in plat were the widening of Pratt and Light streets bordering the inner harbor. The important resculptoring was the shortening

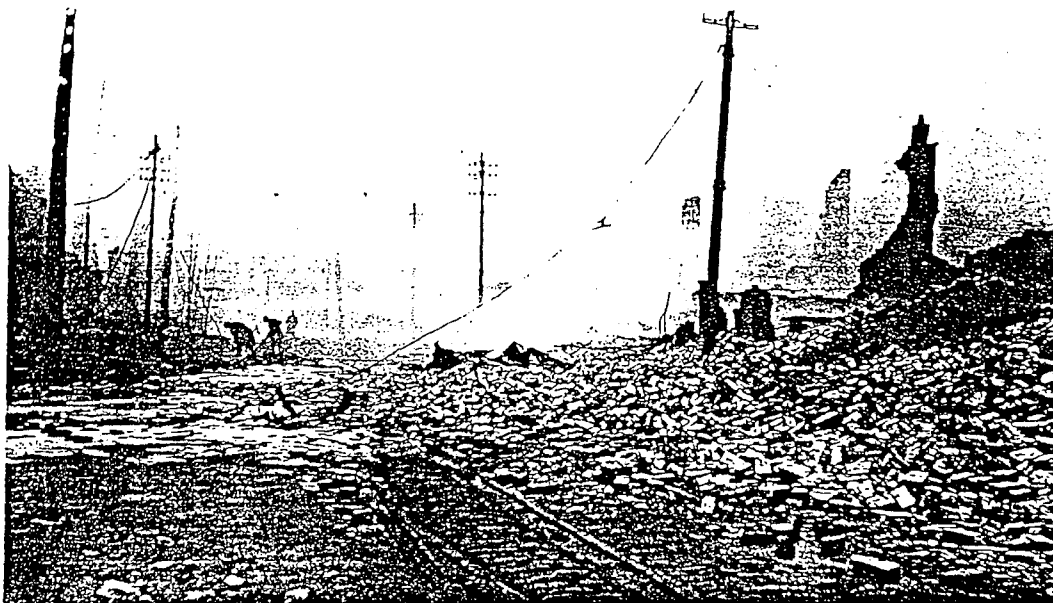
² Refer to Address Map - Figure 18.

Figure 10 - View of Process of Rebuilding



Source: Pratt Free Library - Photograph Collection

Figure 11 - View of Pratt Street Ruins and Pratt Street Rebuilt



Source: Washington Derine, Pratt Free Library - Photograph Collection

of St. Paul Street between Baltimore and Lexington and shrinking of Fayette Street by five feet to correspond. Private firms tended to rebuild their business buildings on the same sites or to enlarge their sites by tying together two or three lots. The majority of the new buildings were three or four stories high. Enormous legal obstacles were encountered by both private and public programs which attempted to clear land titles. (Olson, 1980)

Previous research regarding reconstruction does not address the questions put forth here. With the exception of the work of Bowden, previous literature has documented only poorly, non-spatial research. The work of Donnell (1977) and Rosen (1986) is most relevant yet is characterized by description rather than analysis. It follows that no real research questions are posed or answered.

Several sources of information, such as old newspaper accounts, government and insurance reports, and relevant historical literature provide the geographer with a rare opportunity to study the effect of a catastrophe on a city. (Donnell, 1977) As a result of Baltimore's great fire, a large portion if not all of the establishments in the Central Business district found themselves displaced and forced to make locational changes quickly.

It is argued that a localized conflagration in a particular city tends to accelerate certain processes of locational change already in motion at the regional level. The "incident" (i.e. fire) acts as a shock mechanism that can hasten the decentralization of firms and promote their migration to more advantageous locations within the larger industrial region. The fire in Baltimore after 1900 should have provided an "opportunity" for certain firms or establishments in the central city to migrate either to neighboring towns or to more distant areas. (Donnell, 1977) The Baltimore fire, therefore, might have stimulated certain migrational tendencies and industrial trends that had been underway since 1900. The trends could have been responding to any number of locational determinants, such as, labor costs, and unionization, mechanical inventions and innovations in some industries, transportation and marketing improvements, and rent and tax cost differentials plus other economic inducements brought about by other places. (Donnell, 1977)

Donnell argues that the short-distance relocations of the majority of the city's establishments were because of the sudden physical nature of the shock. Many firms moved only a short distance so that they could get back into business as quickly as possible. This was critically important for those firms specializing in the

production of women's clothes and apparel, newspapers, and banks, which often required both a skilled labor force and a complex system of linkages and market contacts. For such a specialized sector of the city, the availability of these facilities more than offset the local area's potential disadvantages. (Donnell, 1977)

The dominant effect of the fire was to accelerate for a particular district at a particular time and place the more gradual economic-locational processes of the period just before the fire at both local and, to a lesser extent, at regional levels. Displacement of establishments did cause changes in some establishments in the spatial pattern after 1904. Few establishments rebuilt in exactly the same location with the same building dimensions. Regardless of the exigencies of time and such factors as new building code regulations and planned changes in urban design, most owners of large buildings in Baltimore remained within the core area. The fire opened up the formerly congested central city area, and afterwards much of the central district could be effectively rezoned or rebuilt with both industrial and commercial expansion in mind. As the competition for space increased, finding suitable space available within the city itself was difficult. Some establishments simply had no feasible choice but to compete for the space, as the advantages of linkages and close proximity,

were the only real chance for survival. Yet, there is little doubt that geographical inertia had a locational impact in Baltimore. The fire did provide an opportunity to migrate, freeing the burned establishments from the geographical inertia which may have by 1904 been working against them and thereby affording them a better location within the greater Baltimore region (**Figure 1**). (Donnell, 1977)

Within the context of these defined research questions, the analysis of the spatial dimensions of reconstruction and the return and "staying power" of establishments following a disaster is developed. The Central Business District is examined spatially to identify the patterns of reconstruction, which, in turn, will be analyzed and compared to the findings of Bowden (1967).

Chapter 3

Data and Methodology

This chapter describes data collection and classification, the choice of methodology, and limitations of the research process.

Data

Sanborn Real Estate Atlases and Baltimore City Business Directories are the two critical data sources for this research. From the Sanborn Real Estate Atlases in 1901-02 and 1914-15 specifically, and R.L. Polk & Company's City Business Directories of Baltimore from every other directory between these dates starting in 1904 and including 1906-07, 1910-11, 1913-14. This latter source provides the identification of business by type and location identifying the specific address and/or building name. These Directories were used in conjunction with the Sanborn Atlases, which provided the architectural information on size of the buildings (both "footprint" and number of stories), building name for larger structures, and address listings for each building. The Sanborn maps of 1901-02 were chosen to establish both temporal context and trends preceding the fire to address the persistence and concentration/segregation question. The maps and directories for 1914-15 provided data to determine the spatial impact of the fire through the reconstruction

process.³ However, Bowden's research on San Francisco relies solely on the basis of directories. The Crocker-Langley San Francisco Directories (1905, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, and 1915) and the San Francisco Office Building and Business Directory (1905) were used in the reconstruction of the functional structure of the Central District between 1905 and 1915. (Bowden, 1967)

Using both Sanborn Real Estate Atlases and Baltimore Business Directories, this study attempts to identify districts and patterns in the process of reconstruction. Other factors such as the political environment as well as the social and property components that dually affect the changes within the reconstruction era were beyond the concerns of this study although recognition of their importance is made.

Sanborn Atlases

The most comprehensive data incorporating the exact address information, the floor area, and the type of establishment (rarely the specific name) are from the Sanborn Atlases. Other relevant information can also be found on the atlases. However, since this research is not concerned with evaluating insurance themes the fire

³ The years of the Sanborn Atlases from this point in the research on will be referred to as 1902 and 1914 instead of 1901-02 and 1914-15.

insurance information (i.e. location of fire escapes, fire hydrants, or building materials) is not used. These maps provide a high level of precise detail. Thus, some of the imprecision associated with other sources, such as building code and tax records, was eliminated.

The decision to use the Sanborn Atlases automatically guides the research. Incomplete listings as well as extra information were dealt with while compiling the data from the Sanborn Atlases. In addition the time frame was dictated by the years that the Sanborn Company collected the source material. All discussion was oriented around the twelve year interval (1902-1914), as these were the closest years falling before and after the fire. The first Sanborn in 1902 was just shortly before the fire of 1904 and the second Sanborn in 1914 allowed for the analysis of the restructuring of downtown ten years after the fire.

Another consideration in utilizing this particular set of Sanborns was that access to buildings by map compilers was much more frequently refused in the pre-fire period (1902) than in the post-fire period. The Baltimore fire (1904), no doubt, had an impact on the cooperation yielded to the Sanborn company and one can assume, therefore, that the 1914 Sanborns are more detailed and accurate than those of 1902.

Once the classification scheme was developed, the

data collection process began using the Sanborn maps (Table 1). "The late-nineteenth-century collaboration of surveyor and cartographer produced surprising artistry encoded with the dimensions, materials, uses, and occupancy of the built environment." (Keister, 1993) The Sanborn Company declared in the introduction of its 1905 Surveyor's Manual for the Exclusive Use and Guidance of Employees, "Our maps are made for the purpose of showing at a glance the character of the fire-insurance risks of all buildings. [Fire-insurance functionaries] depend on the accuracy of our publications... incurring large financial risks without making personal examinations of the properties." (Keister, 1993) When examined cumulatively, the maps reveal a building's physical evolution in addition to changes in its use over the years. The Sanborn maps survive as "a guide to American urbanization". The company instructed its surveyors to investigate every built-up part of a community. (Keister, 1993)

As stated, the Sanborn maps were an essential tool of the fire-insurance industry. Underwriters weighed the decision to accept all or part of a risk on the basis of identification of a building's materials, its fire-resistive characteristics, its use, and its proximity to fire-fighting mechanisms. It was common for insurance companies to employ a map clerk who notated sets of

Table 1 --- Classification Scheme

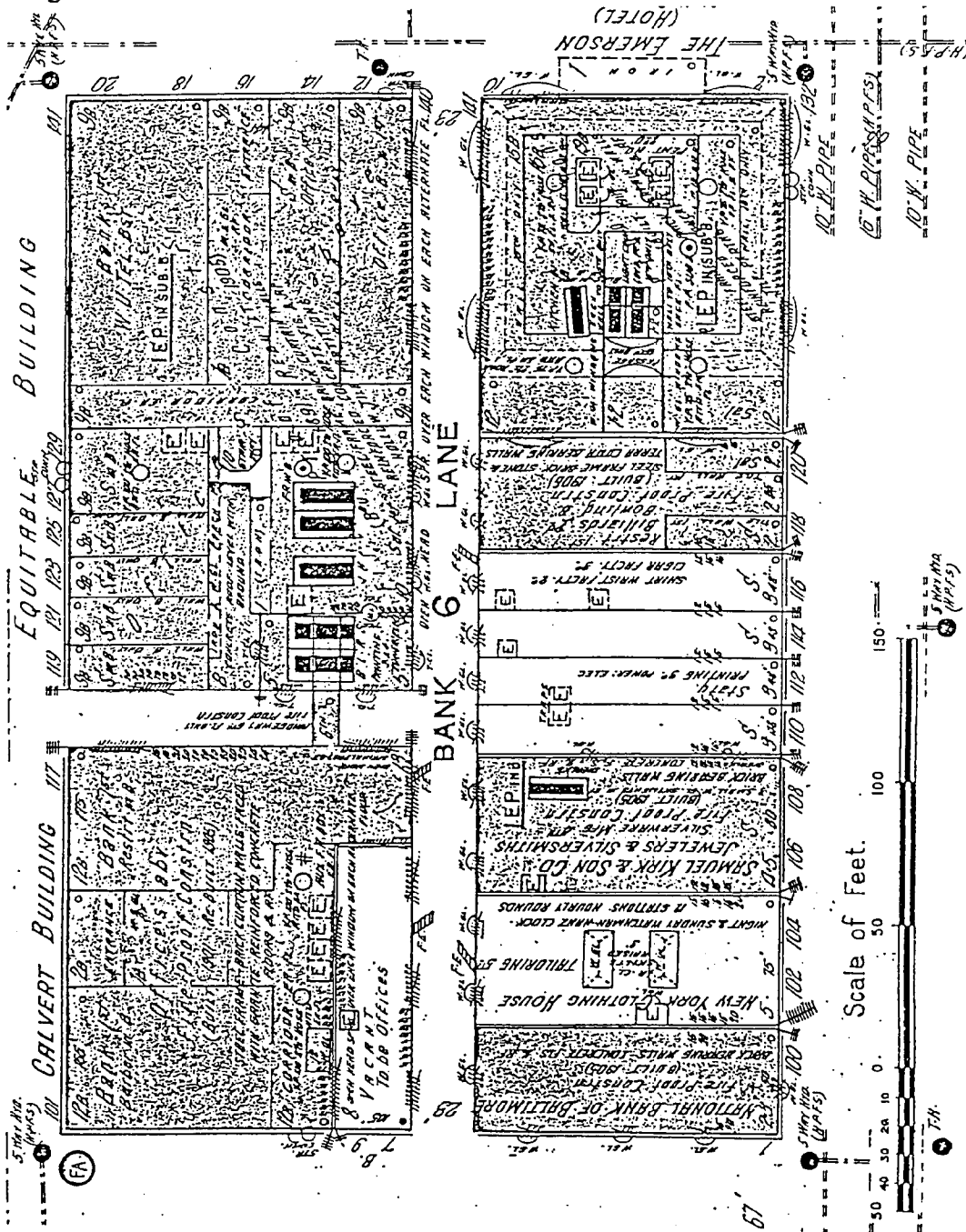
Code	Establishment Type	Code	Establishment Type
10	Banking	70	Government- St., Local
11	Stockbroking	75	Institutions- Schools
14	Other Financial	80	Restaurants &/or Bars
20	Department Store	85	Gamerrooms
21	Variety/Specialty Store	90	Manf. Large-Scale
22	Retail/Other Store	91	Manf. Small-Scale
25	Retail Clothing Store	100	Services
26	Apparel Store	101	Printing/Publishing
30	Hotel	105	Newspapers/Magazine
35	Theater	110	Offices
40	Medical Services	140	Large-Market Whol.
50	Legal Services	150	Misc. (NEC)
60	Whol/Manf Clothing & Apparel	160	Storage
65	Wholesale	199	Vacant

Sanborn maps identifying those properties the company covered by penciling in policy number, expiration date and the amount and type of insurance. Insurers also exercised caution against becoming so heavily involved in a single area that a single fire might ruin the firm. (Keister, 1993)

Today, Sanborn Maps are used for many reasons and by many people. For example, urban geographers trying to re-create the growth and evolution of cities, planners deciphering the intended and accidental layouts of urban living, and environmentalists looking for indications of natural features erased long ago and of businesses that might have produced toxic waste might use the Sanborn Maps. (Keister, 1993)

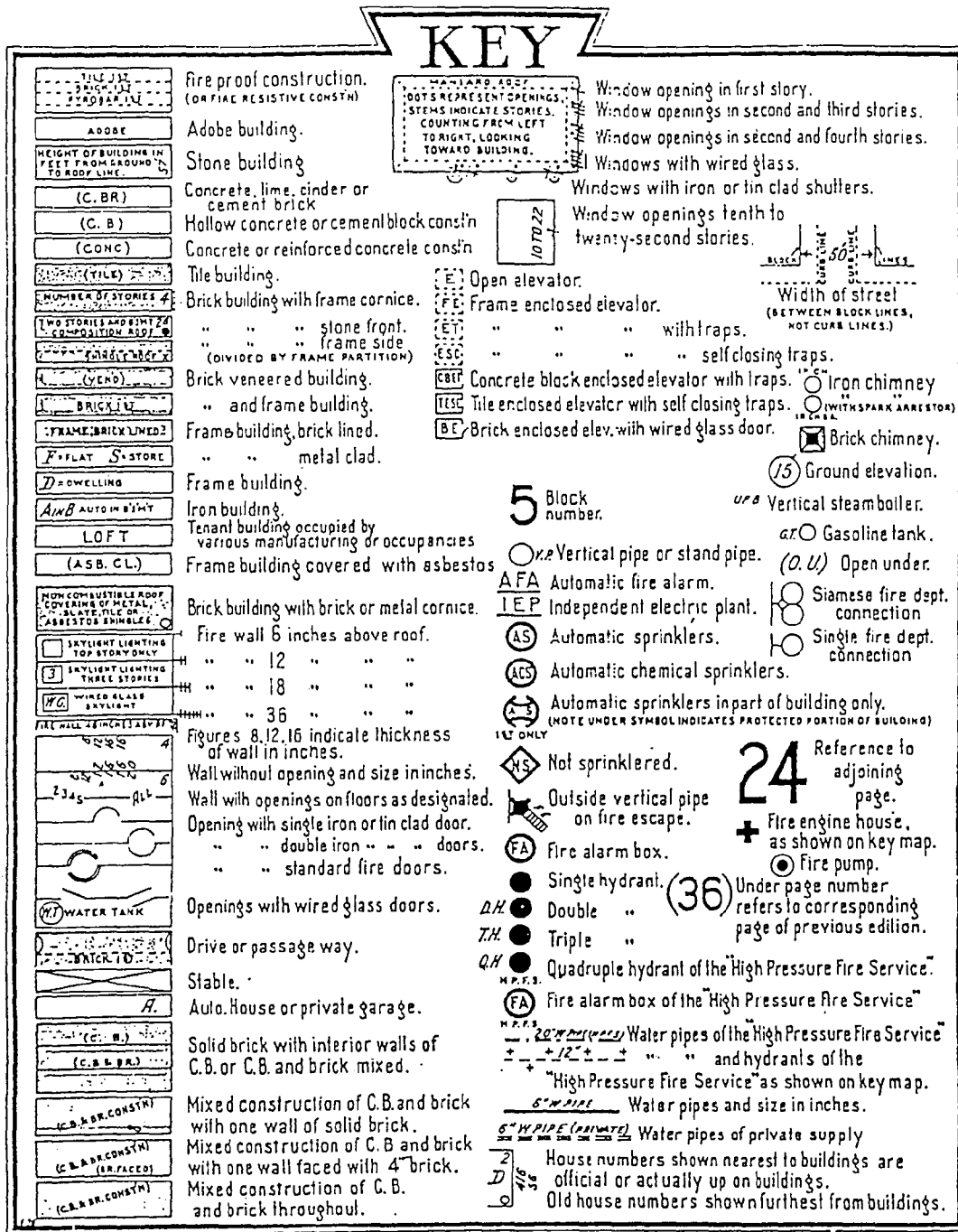
A block of the Sanborn maps (**Figure 12**) contains a high level of detail, far more than was necessary for this study. Daniel Alfred Sanborn(1827-83), the company's founder, copyrighted the system, although the format and symbolism remained largely uncodified from those devised in 1850 by the Jefferson Insurance Company of New York to map New York City. The Company adopted the "Sanborn Map Company" name around 1904 though a variety of other names reflected takeovers or mergers in the years since its establishment. When translated with the aid of the key (**Figure 13**), the codes provide property sizes, shapes, heights, construction materials,

Figure 12 - Sanborn Block



Source: Sanborn Map Company, 1914.

Figure 13 - Sanborn Map Legend



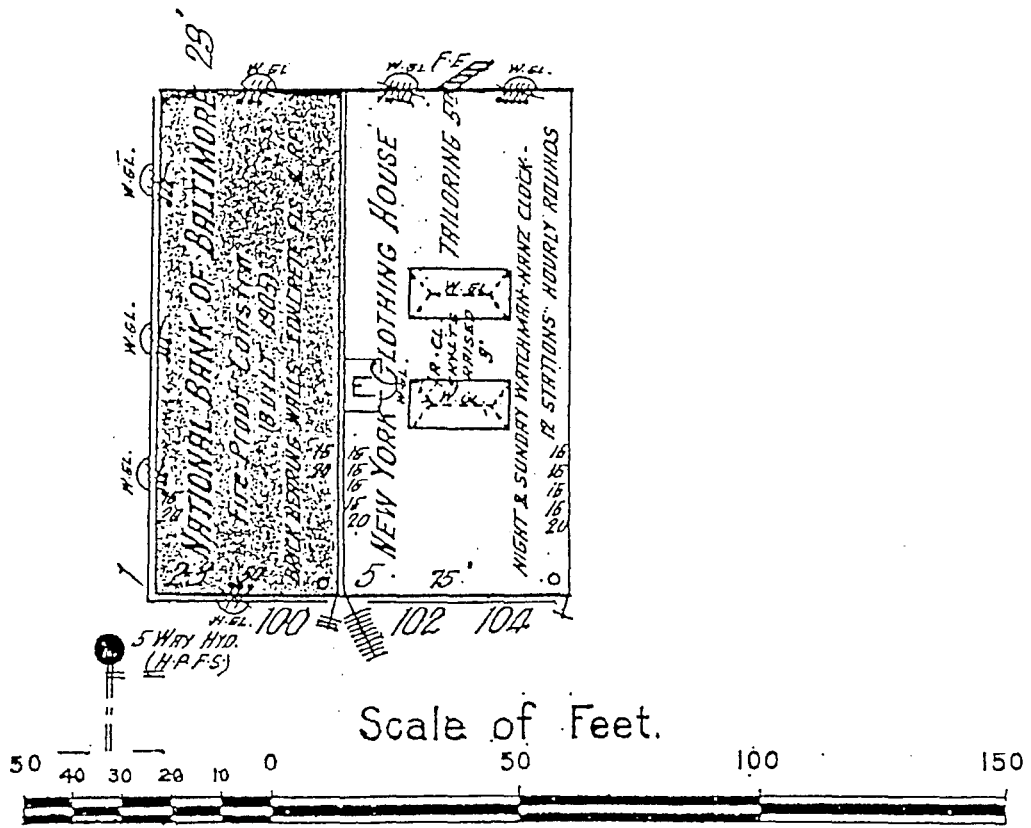
Source: Keister, "Charts of Change", 1993.

uses, and occupants; locations of windows, doors, porches, and additions; and types and materials of roofs. The maps also indicate the widths and names of streets as well as house and block numbers. The locations of fire walls and sprinkler systems, water mains, including their dimensions, fire-alarm boxes, and hydrants remind the reader of the maps' intended use by the fire-insurance industry. In the enlarged corner buildings of the example block (**Figure 14**), the building at 100 and 102 to 104 translates to the location of East Baltimore Street between St. Paul Street and Calvert Street. The National Bank of Baltimore occupies number 100 (or 1 St. Paul Street) and the New York Clothing House occupies number 102 to 104 as indicated by the outside-block lower numbers. The main parts of the building contain two to three stories or five as indicated by the figures in the southwest corners of each section. Other pertinent information collected was the year of building construction, upper floor activities and "footprint" or floor area measurement calculated using a grid (**Figure 15**).

Directories

The Baltimore Business Directories represented the second primary data source containing an alphabetical list of both business firms and private citizens. In addition to these listings, the directory identified

Figure 14 - Enlarged Corner Buildings

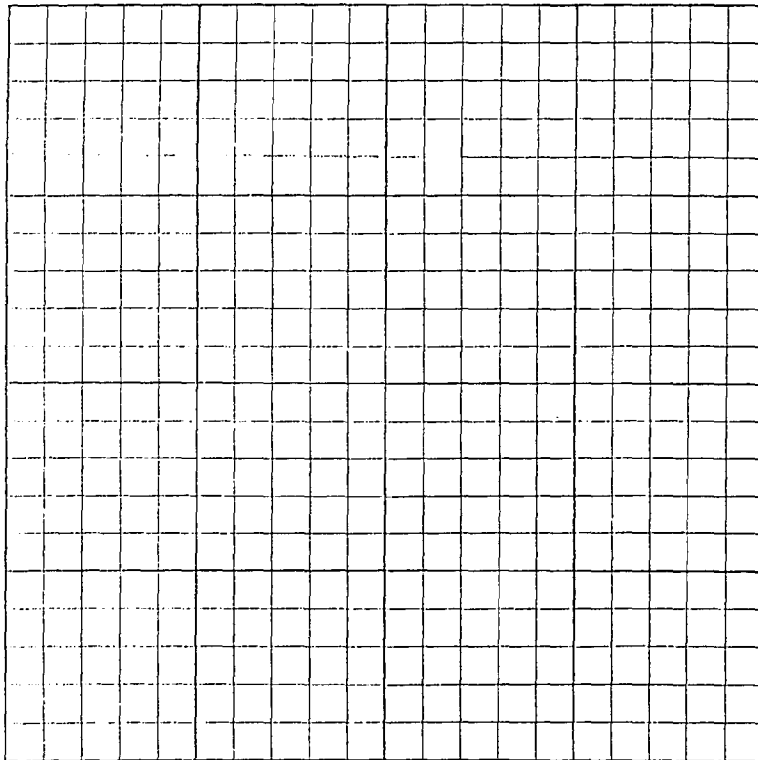


Source: Sanborn Map Company, 1914.

Figure 15 - Grid Size for Floor Area Measurements

1 grid cell = 1 unit in Floor Area

1 unit = 8 square feet



under separate headings such institutions as: Churches, Public and Private Schools, Benevolent, Literary, and Other Associations, Banks, and Incorporated Institutions. A revised Street Directory, as well as a prominent buildings directory provided for the easy location of most establishment addresses. The Directories also list the complete Classified Business Directory which contains a full list of all Trades, Professions, and Pursuits. As a data source, the Business Directories provide a formative collection of those establishments within the Burnt District of Baltimore.

Limitations with Sanborn Atlases and Business Directories

However, no data source exists without certain inherent limitations. In using the Sanborn maps it must be acknowledged that the data do not, indeed cannot, include every establishment located in the area. For example, not every owner may have been present when the Sanborn Insurance Company collected their data or as previously discussed allowed their business to be evaluated. Yet, these data in conjunction with the business directories, are the best available primary sources for this research.

A fundamental weakness when going from the Sanborn analyses to the sequencing/persistence analyses was the fact that only those categories which were function-

specific (besides those that were listed by name) were in the directories (i.e. banks not simply financial). Those categories, such as offices, wholesale, wholesale and manufacturing of clothing and apparel, and retail stores, listed as such on the Sanborn maps, could not be identified in the directories since in almost all cases these were not listed with specific names on the Sanborns. Since the directories are not in address order, it was not feasible without names to identify those establishments using the directories. These restrictions were so great that it was necessary to divide the analysis into two sections --- one dealing with the Sanborn maps and encompassing thirty different establishment types, identified on the Sanborn maps (**Table 1**), and the other dealing with the directories and focusing on seven types of establishments. This would ensure continuity and enable the identification of any changes in magnitude (frequency counts) and spatial extent (floor area). This breakdown also allowed for a significant reduction in data --- from approximately 2000 data items to 200 per directory.

Another problem, perhaps even more difficult to identify and track, is the change in the way categories of data are listed or named in the directories. For example, when an establishment changes name, or changes its primary function without changing its name, there is

a certain amount of doubt surrounding its actual function. In 1902 and other early years the directories provided an index, which in alphabetical order listed those establishments in the Baltimore area. Yet, in the later years following the fire this index was not provided. This made it more difficult to find the appropriate establishments.

Additional Data

Apart from the Sanborn maps and the business directories, additional information documenting changes in building codes and improvements to the district, was incorporated. For example, The Burnt District Commission, created by an Act of the Maryland General Assembly in 1904, produced a Semi-Annual Report containing detailed financial information, designation of properties surrendered to the city, properties paid for by the city, records of legal actions taken regarding the fire (i.e. appeals, cross appeals), and finally, extensive listings of improvement measures (i.e. street widening) taken by the city. These reports provide official records of local government actions in response to the Great Baltimore Fire. Extensive picture collections of the Burnt District streets served to visually affirm parts of the cross-matched data (**Figures 1,6,7,9,10, and 11**). Such sources were used to corroborate the changes or developments that took place

in the downtown burnt district.

Methodology

Attention must be given to the method of delimitation for the Central Business District before addressing the research strategy of this study. Lack of uniformly accepted definitions is most apparent in the field of urban studies when the central region of a city is considered. The term *central business district* has no commonly accepted meaning. Yet, the most universal finding is the extreme variation of land use intensity within the central region. The CBD *core-frame concept* defines the most intensive region as the highly concentrated "core" of relatively limited lateral dimensions within which most of the central activities function (Horwood and Boyce 1959). The core is distinctive for its high-rise structures, internal business linkages, pedestrian traffic, and near-complete use of building sites. The frame is typically composed of warehouses, light industry, and wholesale functions. (Horwood and Boyce, 1959) The delimitation of the CBD in Baltimore --- is based on the work of Rosen (1986), Olson (1980) and Williams (1954) that identifies the CBD to be substantially identical to the Burnt District in Baltimore.

With the Central Business District defined the research questions can be addressed. First, the degree

to which establishments are found in a specific spatial area (concentration), and the extent to which establishments are found in a specific spatial area to the exclusion of other establishments (segregation). These are measurements of the efficiency and purposefulness of the central district. These research objectives were addressed using a classification scheme developed through the selective combination of Bowden's Classification Scheme (San Francisco) and the Baltimore Business Directory listings. Thus, long before the spatial patterns could be recorded and evaluated, development of a static classification scheme was formulated (**Table 1**).

Unlike other studies (Murphy and Vance, July 1954) decisions as to what were and were not typical central business uses determined which functions to record in the classification scheme. This study provides an inclusive scheme. However, some establishments such as permanent residences (including apartment houses), public parks and schools, and organizational establishments such as churches, fraternal orders, colleges) considered by Murphy and Vance (July 1954) as non-central business in character, were also not characteristic elements of the CBD. Yet, several other establishments identified by Murphy and Vance (July 1954), such as governmental, wholesaling, vacant --- stores, buildings, or lots,

commercial storage, and industrial establishments (except newspapers), and highlighted by them as non-central in character, were identified as key components of the classification scheme and were found to comprise many of the key functional patterns (i.e. port influence). Because of the substantial influence of the harbor (docks) --- wholesaling and manufacturing, normally non-CBD types of land occupance, play a much larger role in Baltimore's central district activities (types of establishments). The exclusion of municipal and other governmental buildings and parks, churches, and public and other non-profit making schools from the list of CBD functions can be explained by the absence of the normal profit motive in their location. The inclusion of these establishments within the central district becomes dependent on whether the accessibility and necessity of the functions outweigh the overall disadvantages of those functions.

Therefore, both central and non-central business functions (as defined by Murphy and Vance) were included in this classification scheme. The scheme began at a very disaggregated level utilizing the Baltimore Business Directories and moved toward a more aggregated level within the context of the Bowden scheme. The latter was still too specific in some areas, such as the apparel/shopping category which was divided into jewelry

retail and jewelry non-retail, etc. (Haas, Kates, Bowden, 1977). Therefore, prior to the collection stage a fairly inclusive scheme provided for the aggregation of most establishments into a specific category, with those remaining falling into a "Miscellaneous" or "Not Elsewhere Classified" group (Table 1).

Since this classification may be misunderstood, explanation of certain categories may be necessary. For example, manufacturing was split into two categories, large-scale and small-scale. The division entailed the dimensions of scale of both size and verticality. Large-scale manufacturing establishments occupied the first floor as well as the upper floors of a building(s) and totalled at least 2500 square feet of floor area. Whereas, small-scale manufacturing establishments occupied generally the upper floors or non-first floor location with less than 2500 square feet of floor area per establishment. Most of the other categories are self-explanatory except for the Retail/Other Store which included all those stores which were not variety, specialty, clothing, or apparel stores.

In general, the remaining categories and those already discussed were developed after reviewing Bowden's and the Baltimore Directory's classification schemes, and identifying those types of establishments which were relevant to Baltimore. Baltimore's scheme had different

considerations than Bowden's scheme of San Francisco, for they were, both historically and functionally, at different stages of development. Baltimore incorporated in the year 1797 and San Francisco was not incorporated as a city until 1850. (Straub and Dupuis, 1988) Through examination of spatial and numerical patterns each category in the classification scheme will be elaborated on in the next chapter.

Data Collection Process

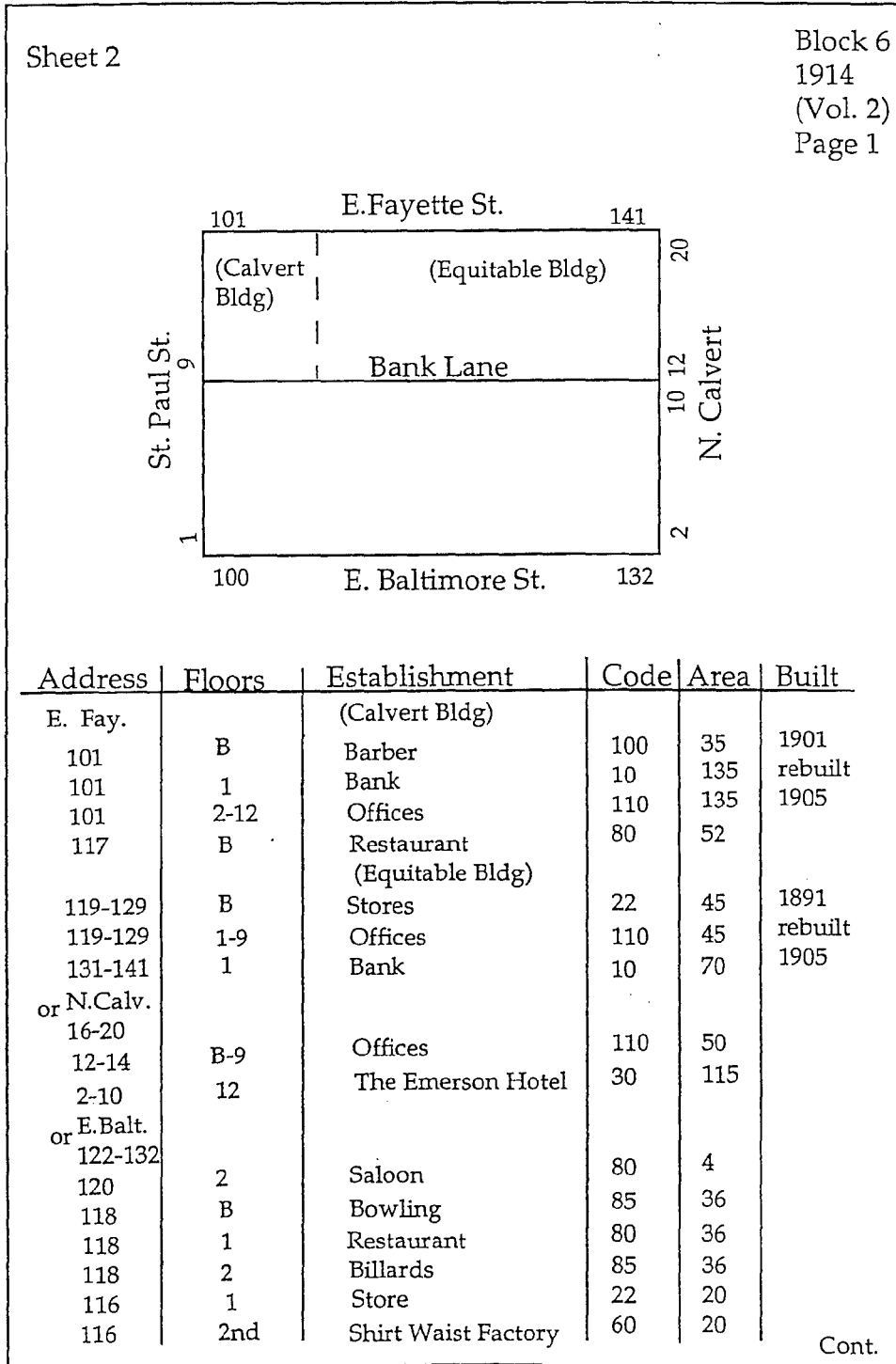
For each block of the Sanborn Atlas located in the Burnt District, a very precise recording procedure was followed (**Figure 16 --- Schematic collection example**). Each page was labelled at the top with the sheet number (from 1 to 13), then the block number (from 1 to 67)⁴, the year (1902 to 1914), the atlas volume number (1 to 4), and finally, the page number for that block (usually either 1,2 or 3). Following this was a schematic diagram of the block (not to scale) with street names, interior alley names, address ranges on each side, and special notations for open spaces or vacant blocks, or large buildings. Most of this information was used for accurate identification and to allow for accessibility and easier mapping once the pertinent data was collected.

⁴ Both sheet numbers and block numbers represent only this researcher's data and do not correspond to the Sanborn Company numbers of these types.

Figure 16

Schematic of Collected Data

Sanborn Atlases: 1902 and 1914



Cont.

Next, the actual data was recorded in six columns --- address, floors, establishment-type and/or name, code (classification), area (floor area -number of grid boxes), and built (year an establishment was constructed if available). Each block was documented from the top left corner around the block in a clockwise fashion following that addresses listed on the Sanborn Maps. (This block also used for Sanborn block example on **Figure 12.**)

All of these columns plus others were then entered into the Quattro Pro 4.0 spreadsheet program. As shown by the **Column Bar (Figure 17)**, several columns were added to allow for additional statistical computations. Specifically, those added to facilitate calculations were street number and number of floors. The "block" number column provided more of an organizational tool and contributed to the identification of spatial patterns to be mapped later. One additional column "other addresses" gave any address information that could be added to the one address listed in the "address number" and "street name" column.

The address item recognized and/or compensated for several concerns in the collection process. It was necessary to establish a constant area (district) although slight changes occurred over the research interval (1902-1914). For example, one base map was used

Figure 17

Column Bar for Sanborn Atlas Data Spreadsheet

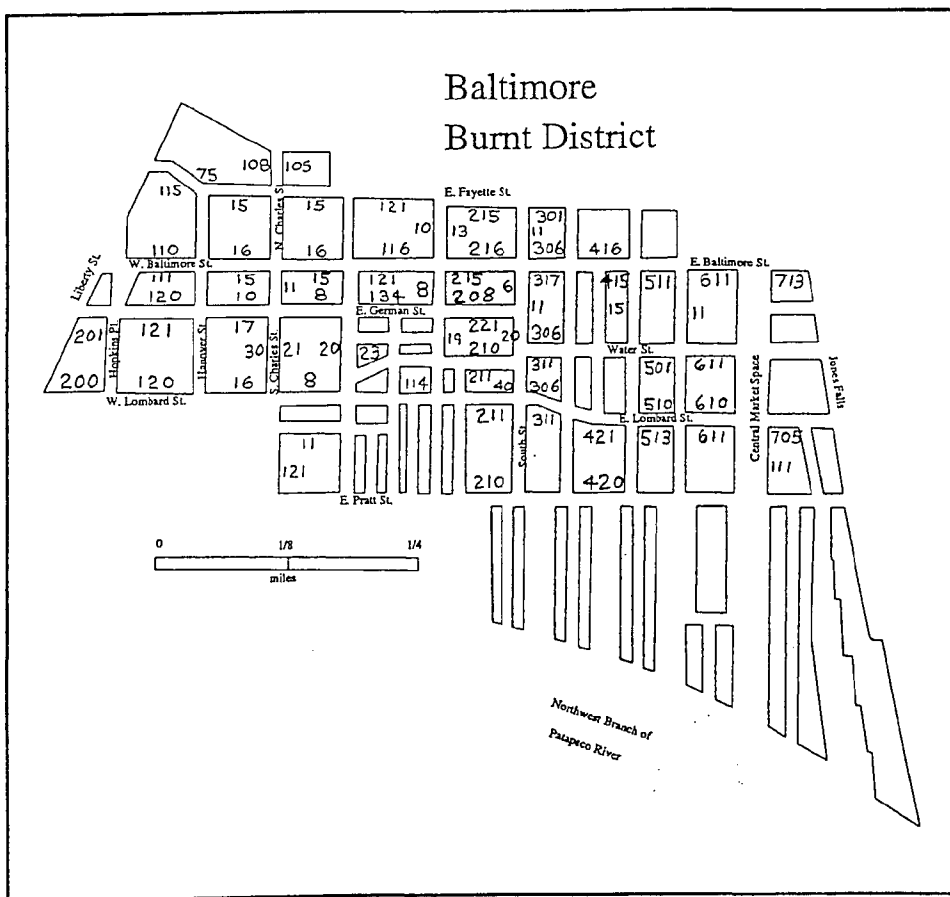
A	B	C	D
Block	Address Number	Street Name	Street Number
E	F	G	H
Other Addresses	Floor	# of Floors	Establish. Type &/or Name
I	J	K	L
Code	Area (# of Grid Sq.)	Year Built	Floor Area (GrSq*#Fl)
M	Square Footage		

Columns above "*" added to facilitate calculations within statistical program, such as multiplication, and allowed for sorting manipulations.

for the entire research interval to ensure comparability (**Figure 4**). Although there were slight changes in the physical structure of the district, and a few name changes, the district for the most part remained constant. With regard to structural changes, the most significant alterations were along the west side of Jones Falls and the piers (or blocks) along the harbor. The reconstruction after the fire, brought about fairly comprehensive changes to these areas through various block divisions and/or merging. Among some of the street name changes between 1902 and 1914, were North Avenue to Guilford Avenue, Custom House Avenue to Post Office Avenue, and Commerce Street to South Holliday Street. West Falls Avenue, in place of the old Jones Falls, extended north past Lombard Street through to East Baltimore Street (**Address Map --- Figure 18**). Most of these changes were condemned areas after the fire, which had to be completely rebuilt. The actual street names were also numbered in the spreadsheet columns (**Figure 17**), to allow for sorting but also to ensure that those street names that changed were still recorded with the same number for establishments located in the same location.

The "floors" column stored which floor(s) each establishment occupied, which was also incorporated into a second column in the spreadsheet floor number, to allow

Figure 18 – Address Map



Source: Compiled by author from street addresses.

for sorting by just recording the number of floors per establishment (not which floors). This number could then be multiplied by the floor area to give the total square footage, in the spreadsheet column labelled --- floor area. This "floor area" differed from the area column of the collection stage, in that, it provided total floor area for all floors of the establishment not just one floor's square footage.

The "establishment type and/or name" column of the spreadsheet and collection data was fairly self-explanatory and appropriately corresponded to the "code" column which identified by number the category in which the establishment was a member in the classification scheme. The code numbers did not have any special significance, in terms of representing the categories, they only were used to identify the various categories.

The final column in the collection data was called "built." In most cases this column remained empty, but sometimes the Sanborn Atlases listed the year an establishment was built which in turn allowed for that year to be recorded in this column. This information was helpful later when determining persistence results for a selected number of establishment types.

Upon completion of both automated databases (one for 1902 and one for 1914) various sorting procedures were performed. Sorting allowed for the weighing of collected

data by several series. For example, one sort could have the primary series (or first sort) being the classification code. Yet, on the same data in the same procedure the rows would also be sorted according to their street name, block number, and specific address or rather the second, third, and fourth series. These provided in depth frequency counts and allowed for further analyses as to the significance of one establishment type versus another. With the help of the spreadsheet/statistical program --- Quattro Pro 4.0, calculations on the floor area and frequency measures of establishment types were made.

From these two databases, one map per type of establishment was plotted for each year (1902 and 1914), approximately, thirty establishment types (maps) per year. These maps provide the focus for the first or primary research question --- they determined where the spatial patterns of clusters, concentrations, and segregations were found.

The second major research question concerns the sequencing and persistence of establishments in the post-fire period. Only those functions considered in the existing literature as being the most influential in the shaping of a downtown area were considered. (Bowden, 1967; and Murphy and Vance, 1954)

To begin the directory data analysis seven types of

establishments were selected --- chosen on the basis of information derived from research discussed earlier. (Bowden, 1967; Murphy and Vance, October, 1954) These establishment types provided the structure for identifying the sequencing of the reconstruction of the downtown district. The functions are:

- 1) Banking, Stockbroking, Other
Financial
- 2) Department Stores
- 3) Hotels/Lodging Houses
- 4) Theaters
- 5) Government - State, Local
- 6) Manufacturing - Large Scale
- 7) Newspapers

The above categories provide information that addresses the characteristics of the financial, business, public, retail, entertainment and manufacturing segments of the central business district. These were banking/stockbroking/other financial, department stores, hotels/lodging houses, theaters, government-state and local, manufacturing: large-scale, and newspapers.

The notion of sequencing identifies how many and where the specified establishments were after the fire. This was achieved through examination of the establishment types listed in the business directories. The set of maps that showed the individual function

through time by using a different symbol for the different years of the directory. This map would reflect the sequence of return for the selected key function. The directory years coincide with every other two-year directory following the fire up to 1914 (1906-07, 1910-11, 1913-14). Essentially, sequencing illustrates in what order, in terms of function, establishments were built in the district. Therefore, through the identification of the dates of return of establishments within a functional type much can be learned about a function's importance within the entire district and its role in the recovery from the disaster.

In addressing the concept of sequencing it cannot be assumed that the selected functions were in the same place or even in the Burnt District before the fire. Therefore, the process of persistence will be addressed by determining which establishments in the burnt district and on the Sanborn maps were in operation in 1902 and then returned to the area following the fire determined through identification in the directories. This process links the two primary forms of data, the Sanborn atlases and the Baltimore Business Directories. The establishments which are listed as returning were identified in the 1902 Sanborn databases, which was compiled for analysis on the "footprint" of the district. Those establishments which persisted can then be plotted

by showing the individual function through time with different symbols representing the pace of return or year of return. This mapping technique reveals different dimensions of the central district and its functions, and enabled the determination of the persistence results.

This comprehensive look at the data sources provided the necessary evidence to examine the patterns and changes within the district. The methodology suggested "how" the analysis will proceed, and, therefore, allows for the actual research questions to be answered.

As a comparison to Bowden's model of reconstruction analysis, there are several critical elements necessary in testing his model. The rate of return, process of concentration, and functional makeup of the establishment types are those themes which will be tested for and compared to the work of Bowden in his San Francisco study.

Chapter 4

Spatial Patterns of Establishments in the Pre- and Post-Fire Period

The initial research question concerns the degree of a) concentration and b) segregation of establishments in the pre-fire (1902) and post-fire (1914) periods. This deals with the footprint of the Burnt District at two specific moments in time, and thus requires data that can effectively be compared. This question follows closely the context of Bowden's second research question --- "to compare the Central District destroyed with the one that was re-built" (Bowden, 1967, 463).

The Sanborn Maps provided both the data for numerical as well as spatial analysis. First, the computer generated graphic displays of the statistical results were documented on two graphs. Examination of the "Establishment Frequency" (Table 2) and the "Average Floor Area" (Table 3) graphs provide the accumulated results for the extensive data collected. The spatial outcome was shown through the identification and description of spatial patterns; such as concentrations and segregations, linear and random patterns shown on the five different sub-heading maps representing 1902 and 1914.

Interpretation of these graphs can be made only through an interactive comparison of the Frequency and

Table 2

Establishment Frequency
Sanborn Maps: 1902 vs. 1914

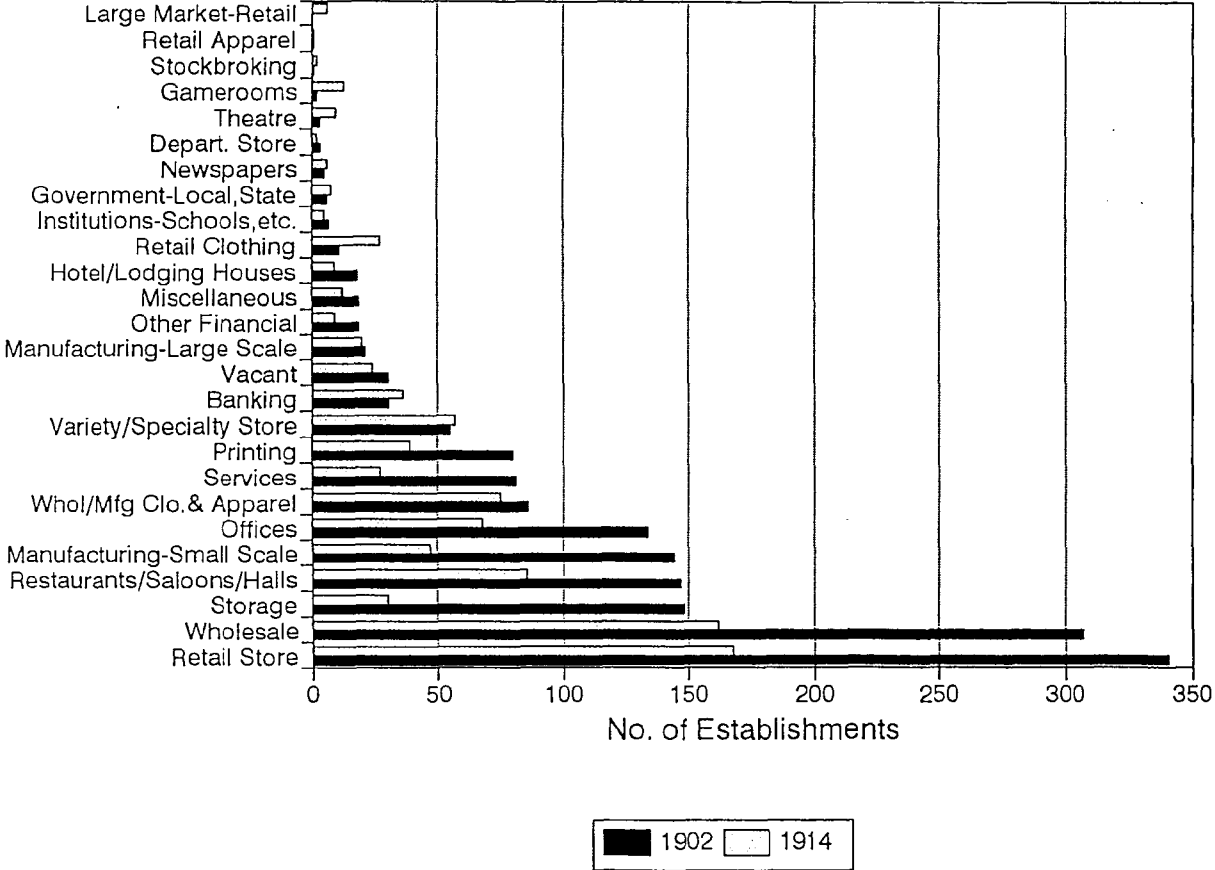
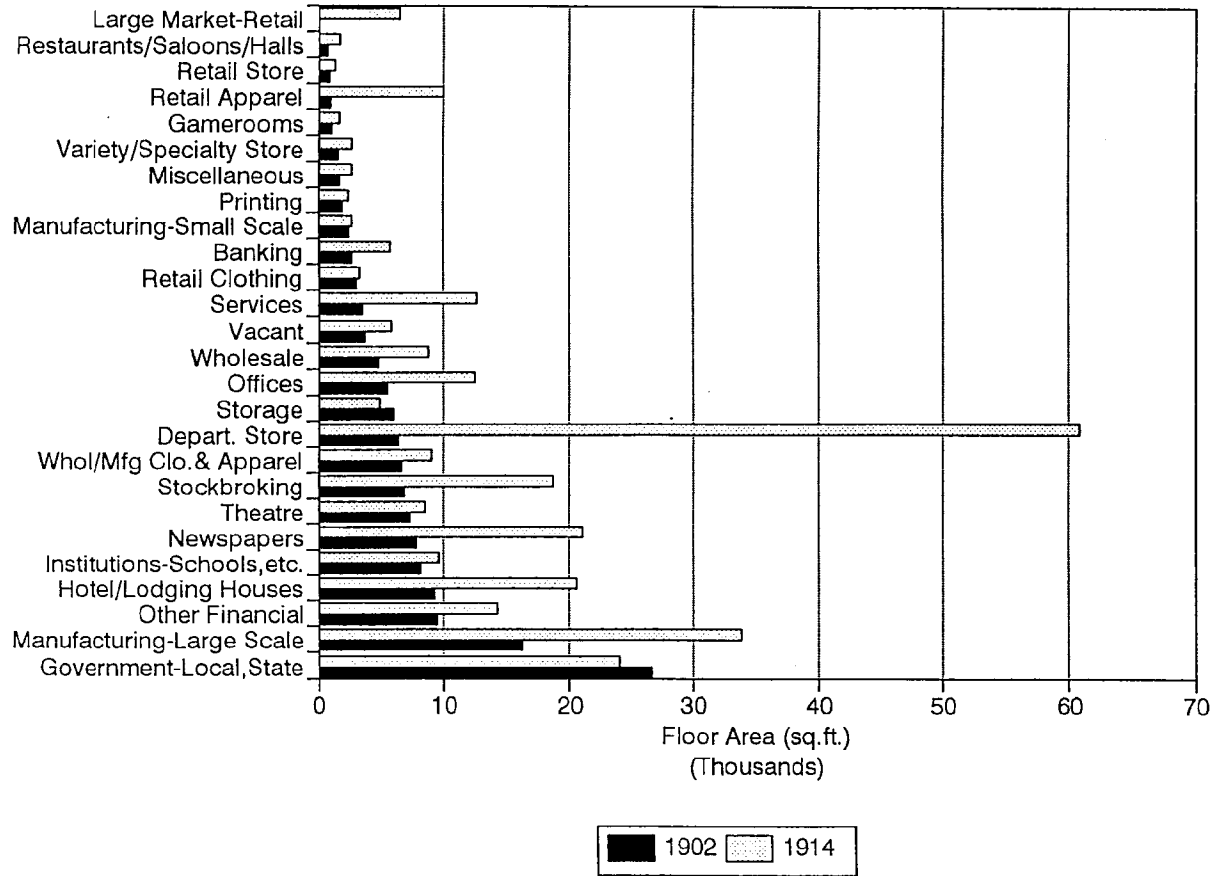


Table 3

Average Floor Area Sanborn Maps: 1902 vs. 1914



Floor Area Graphs. Although each individual function could be evaluated on a separate basis, this research groups functions according to frequency and size which serves as more than simply a descriptive approach. The Establishment Frequency Graph (Table 2) and the Average Floor Area Graph (Table 3) allow for a graphic display of the discussed results. There were several categories where changing frequencies, largely decreasing from 1902 to 1914, could be explained by increases in the floor area. Those categories such as Vacant, Miscellaneous, Offices, Printing, Services, Restaurants/Saloons/Halls, Institutions, Wholesale, Wholesale/Manufacturing of Clothing & Apparel, Hotel/Lodging Houses, and Other Financial showed a pattern of decreasing frequency and increasing floor area between 1902 and 1914. Whereas these types of establishments can be grouped together because of a similar pattern of change, some categories illustrate this trend more forcefully (i.e. Offices, Services, Wholesale, and Hotel/Lodging Houses) or less (i.e. Printing, Institutions and Wholesale/Manufacturing of Clothing and Apparel) than others. Although Retail Stores also displayed the general pattern of declining frequency and increasing floor area, it could not be grouped with the other categories because one (the frequency) could not be explained by the other (the floor area). The very large decline in frequency and the

slight increase in floor area of retail stores could well be explained by one type of store --- the department store. The large floor area increase in department stores was unfortunately based on analysis of a small number of stores because of the poor identification of such stores on the Sanborn Maps. Since the Sanborn Company classified none of its stores as "department stores", there was an attempt to capture these establishments as distinct entities in the classification scheme by incorporating both location and scale. Using the criteria of at least four stories and at least 3200 square feet per floor, only partial identification of these establishments was possible.

Unfortunately, there were a few categories in the classification scheme that did not fit into the establishment types found on the Sanborn Maps. These were not labelled independent of other establishments and therefore the numbers were largely undercounted for certain establishments. In addition the respective floor area counts were skewed and, therefore, did not represent a statistically significant number of establishments. Categories such as Retail Apparel, Large-Market Retail, Stockbroking, and Department Stores (discussed previously) represent the "Not Labelled Properly" group of establishment types. The role these functions played in the life of this district could not be adequately

determined from the analysis of the available data. However, it would not be appropriate to dismiss such functions as they clearly play some part in the linkages and activities of this part of the city. For example, there was a substantial increase in the floor area for stockbroking firms and department stores, as well as Large-Market Retail taking on a role with Baltimore becoming "the chief distributing point for the North and West of all tropical and semi-tropical fruits, berries, and roots, among other produce from Southern states (Baltimore Business Directory, 1906).

Changes in frequency counts of Manufacturing establishments (both Large- and Small-Scale) examined together can be explained by the substantial drop in the number of Small-Scale Manufacturing plants being more than compensated for by the prominent increase in Large-Scale floor area. This suggests a shift towards larger manufacturing in the scale of manufacturing, as a result of the change in the types of goods being produced.

Several categories form the group of establishment types which show an increase in both the frequency and the floor area in the Burnt District from 1902 to 1914. Retail Clothing, Gamerooms, Theaters, Banking, and Variety/Specialty Stores exhibit an overall expansion in the structure of the district as both measurements demonstrate increases. Whereas Banking showed

substantial increases, Variety/Specialty Stores offer a more modest increase. Different emphases of growth were illustrated as Theaters, Gamerooms, and Retail Clothing jumped in frequency from 3 to 10, 2 to 13 and 11 to 27, respectively, and where Banking and Variety/Specialty Stores jumped from 2690 to 5760 and 1600 to 2750 square feet in floor area. The growth in these categories was most pervasive in the Burnt District compared to all other types of establishments in the classification scheme. This growth in response to an acceleration of the financial investment explained the Banking increase but the stronger tourist/entertainment industry provided the push to theaters and gamerooms. Retail Clothing increased in capacity as "fashion" became more than just being clothed. The international influence on clothing and fashion gave rise to the greatly expanded clothing industry.

In addition to these categories, the Newspapers category also documented an increase in its presence in the district largely because of a significant increase in the floor area from 7,800 to 21,120 square feet. Because of this great increase, even though Newspaper frequency stayed relatively constant, there was considerable growth in this activity. Shifts to larger scale operations suggest that given the high-rent district there exists a push to increase the size of newspaper plants so that

economies of scale offset rent increases.

Growth in the district in such activities as newspaper plants, however, did not overshadow the declines during this time frame. The Storage category represented the largest decline as both frequency counts and floor area measures took falls in the years between 1902 and 1914. This phenomenon speaks directly to the notion that the space within the CBD has increased in value during the intervening years. High-rent space could no longer be used for low income producing storage space. Although Government establishments also experienced a small decrease in floor area, they showed a slight increase in frequency between 1902 and 1914. The types of establishment discussed in terms of the "Establishment Frequency" (Table 2) and "Average Floor Area" (Table 3) provide comparisons, linkages and explanations that can be made regarding the importance of results in the observation of graphic representations.

Spatial displays provide a clearer understanding of patterns, trends and developments. Seldom does a written description or analysis provide the same impact that a picture and map would provide. Therefore, the following five maps representing various functional groupings in the CBD core produced distinctive patterns within the central district of Baltimore.

The main purpose of the present study was to

establish a factual basis for analyzing growth and change in the city center, in order to understand the reconstruction process. This approach may be applied to the study of many kinds of urban areas, but it was developed primarily with one type of center in mind: that major concentration of activities which is loosely referred to as "downtown" or "the business district". (Rannells, 1956) While Murphy and Vance (1954) conclude that the "central business district" has no standard meaning, they call attention to the CBD as a region, including a core area in which the CBD qualities reach their greatest intensities. Although Murphy and Vance have done perhaps the most extensive work in this field, they have not specifically defined the CBD other than as an area whose "really essential functions appeared to be the retailing of goods and services for a profit, and the performing of various office functions." (Murphy and Vance, October 1954, 203) Rannells concludes that the central business district of any city is found its greatest concentration of buildings and of commerce, its most congested area of pedestrian and vehicular traffic, its major source of tax revenue. "It is, in sum, that chief nucleus of an entire region's activities which makes the city what it is." (Rannells, 1956)

Therefore, it is realistic to divide those functions within the central district according to categories of

who they are serving within the framework of this "region". Based on the functional classification approach to CBD analysis, one seeks to isolate and examine CBD activities according to their functional role and the spatial relationship each has to the other. Its origin is generally ascribed to Haig, who conducted the first major study (*New York Regional Survey, 1927*). The focus of Haig's study was the locational analysis of various types of establishments over a time span, which is referred to as a "directory type" functional study. (Horwood and Boyce, 1959)

In comparing the groupings of the central activities by both establishments and occupied space for 1902 and 1914, this research indicates a substantial degree of linkage between activities. However, five underlying sub-headings can capture the set of functions in the CBD: a) traditional CBD functions/financial, b) retailing, c) social and professional services, d) commercial/industrial, and e) governmental/institutional (**Table 4 - CBD Core**). In general there is a high degree of concentration of these activities in the central district. In reviewing **Table 5, Framework of CBD Functions**, an understanding of who is served and how heavily linked certain activities are to others is displayed as an organizing tool for the five sub-headings. It is important to highlight a few types of

Table 4

Five Sets of Functions: CBD Core

1. Traditional CBD Functions/Financial
Newspapers Printing Banking Stockbroking Other Financial
2. Retailing
Department Store Variety/Specialty Store Retail Clothing Retail Apparel Retail/Other Store
3. Social & Professional Services
Gamerrooms Services Hotels/Lodging Houses Theaters Offices Restaurants/Bars
4. Commercial/Industrial
Manf: Large-Scale Manf: Small-Scale Whol/Manf Clothing & Apparel Wholesale Large-Market Wholesale Storage
5. Government/Institution
Government - State, Local Institutions

Table 5 Framework of CBD Functions
 1914 Establishments F.A.¹ CBD City Region Serving:

	F.A. ¹	CBD	City	Region
Department Store	60800	x	x ²	
Manf: Large-Scale	33860		x	
Government (State, Local)	24130			x
Newspapers	21120	x	x	x
Hotels/Lodging Houses	20610	x	x	
Stockbroking	18690	x	x	x
Other Financial	14340	x	x	
Services	12610	x		
Offices	12540			x
Retail Apparel	9980	x		
Institutions	9600		x	x
Whol/Manf Clo. & Appar.	9090	x		
Wholesale	8830	x		
Theater	8580	x	x	
Large-Market Wholesale	6460	x		x
Banking	5760	x	x	x
Storage	4990	x		
Retail Clothing	3330	x		
Variety/Specialty Store	2750	x		
Manf: Small-Scale	2690	x		
Printing	2500		x	
Gamerooms	1790	x		
Restaurants/Bars	1730	x		

¹ Floor Area count represents the square footage per establishment. (See Table 3)

² A bold face "x" represents those activities heavily linked to other activities (i.e. establishment serving).

linkage together with relationship to floor area. Therefore, this figure also presents the structure of the CBD organized by ranking establishment types according to average square footage of occupied space in the district.

Traditional CBD Functions/Financial

No activity can operate without involving establishments in other categories of activity. Any one function may be analyzed separately in relation to a whole range of establishments, or may be singled out in order to study the effect on the total system of the city. This first major sub-heading, traditional CBD functions/financial, encompasses five categories within the classification scheme, they are newspapers, printing, banking, stockbroking, and other financial (i.e. stock exchanges, insurance).

Using Rannells' example of a newspaper plant, several subsystems of person movement (employees, staff, advertisers' representatives, and so on) and of goods handling (bulk newsprint and ink, supplies and equipment coming in, while going out are papers, both local and by mail, and waste) occur. (Rannells, 1956) Some unfortunately run into conflict. For employees and staff the journey to work is most important; the presence of a fair range of consumer-service establishments (such as restaurants) in the vicinity of the plant is not unimportant. For both staff and visitors the most

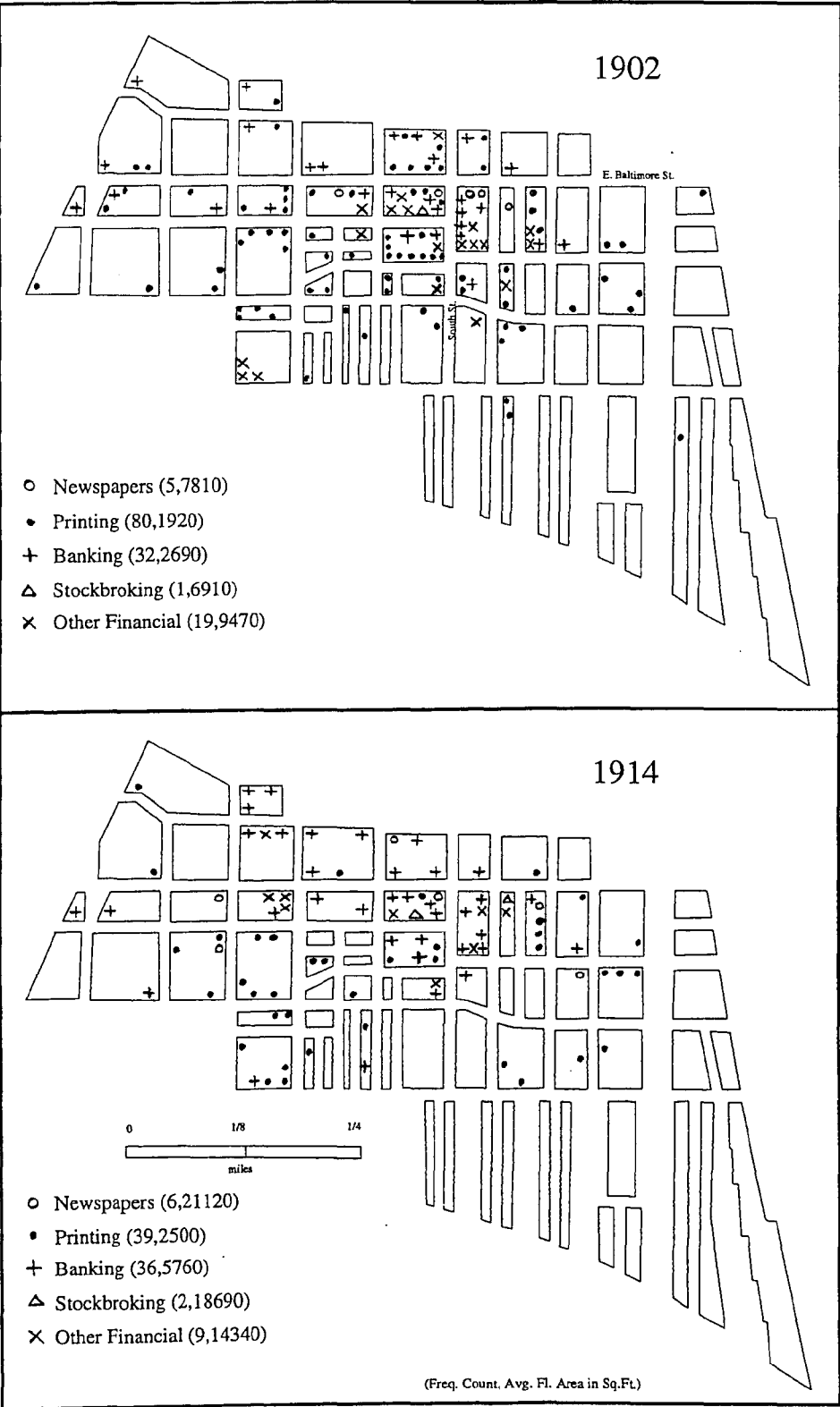
important factor is convenience of location relative to other establishments having linkage with the operation of the newspaper. Regarding the delivery of papers there are great differences between morning and afternoon editions, the former tending to follow a distribution pattern matching the distribution of residential establishments and thus reaching a out into commuter territory and the latter "hitting the street" where pedestrian movement is heaviest. This last factor probably was most significant, dictated a central location and outweighed heavy-bulk manufacturing requirements of the plant which would be better served by locating in an area of cheaper rents. (Rannells, 1956)

All establishments are connected with several movement systems, and many situations similar to that of the newspaper plant. And systems of movement comprise only one of the different types of systems relating to land use. In fact, the major activity carried on at any establishment may account for virtually no direct exchange among others in the same business. "This is especially true of rival newspapers, between which there is little intercourse, although each may use the same wire services and each may send out reporters to cover the same events. (Among the reporters themselves, of course, connections may be very close)" (Rannells, 1956, 23). Supporting this idea of independence from the

economies of other like yet separate establishments is **Traditional CBD Functions/Financial - Figure 19** which illustrates a random pattern of newspaper establishments except for the linear trend in 1902 along E. Baltimore Street. Similarly, the printing industry followed closely the newspaper industry with printing in (**Figure 19**) showing a widely dispersed pattern with a few clusters within individual blocks over the research interval but no concentrations extending to several blocks.

Possibly the most critical of all the profit-motivated financial services is the Banking category. The location of this industry for both years shows a clear focus of activity along South Street and the blocks near it on E. Baltimore Street (**Figure 19**). The almost complete absence of these establishments in other parts of the district indicates clearly that an interactive network was in place. The other Financial category (**Figure 19**) including stock exchanges, accounting and insurance firms, and real estate offices, clusters around the same blocks as did Banking establishments with an additional linear trend along Water Street in 1902 and a shift toward the western portion of E. Baltimore Street by 1914. While the Stockbroking category generally aligns itself with the "financial" trend in location (**Figure 19**), there was an insufficient number of firms to

Figure 19 – Traditional CBD Functions/Financial



identify a spatial pattern clearly.

It can be concluded from the maps of this grouping that traditional CBD functions and financial activities serve as the foundation of the central portion of this district with each of these activities displaying a distinctive spatial pattern.

Retailing

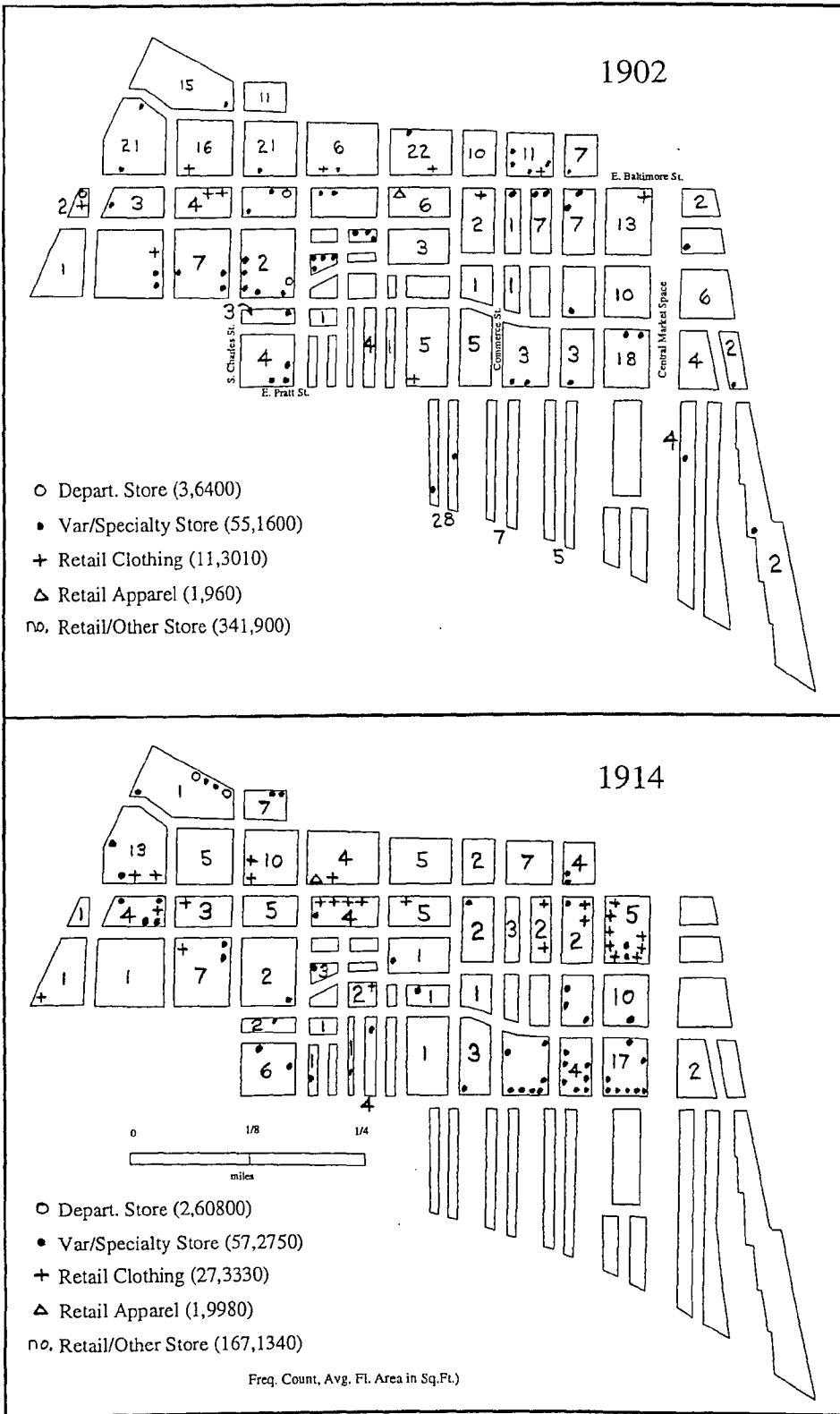
The set of functions that fall under the Retailing sub-heading, include department stores, retail apparel and retail clothing stores, variety/specialty stores, and retail/other stores. These functions rely so heavily on the competition of other "like" activities that holding its own share of the same market is often the goal rather than even attempting to increase its share. Since the market is the general public and not so much single establishments, the market share for retailing activities is largely guided within this CBD core by the size of the accessible metropolitan population.

A retail's store's most important relationship is with its customers; its location, appearance, and convenience are intended to attract and hold customers who choose it for these same qualities or leave it for another having qualities which they prefer. Location is paramount. None of these items is especially important in the store's dealings with other establishments. Even convenience to employees is minor, except as it may help

in serving the customer. (Rannells, 1956)

Retailing encompasses the decisively retail category of Department Stores. Although the actual frequency within the district remains quite small throughout the research interval there exists a formidable concentration of Department Stores just to the west-northwest of the district. This trend can be seen on **Figure 20 - Retailing**, which identifies those department stores through use of the directory listings. Retailing would also be among those establishments within the Variety/Specialty Store category or the Retail/Other Store category. Spatial patterns depicted in the pre-fire period for Variety/Specialty Stores are not entirely replicated on the post-fire map. (**Figure 20**) In 1902 there was a concentration of establishments along both S. Charles Street and E. Baltimore Street, whereas, in 1914 the greatest concentration is along E. Pratt Street between Commerce Street and Central Market Space. The Retail/Other Store category was largely dispersed as the category encompassed such a large and varied assortment of products. For example, the 1902 map showed the greatest degree of concentration of retail stores along both sides of E. and W. Baltimore Street and both sides of E. Pratt Street, yet the 1914 map identifies a shift away from the areas south of E. Pratt Street and remained along Baltimore Street and extended into the west side of

Figure 20 - Retailing



Central Market Space primarily because of accessibility for pedestrian customers. This supports the concept that retailing is guided by location in those areas most accessible (i.e. streetcar line and railroad access) to the largest number of consumers.

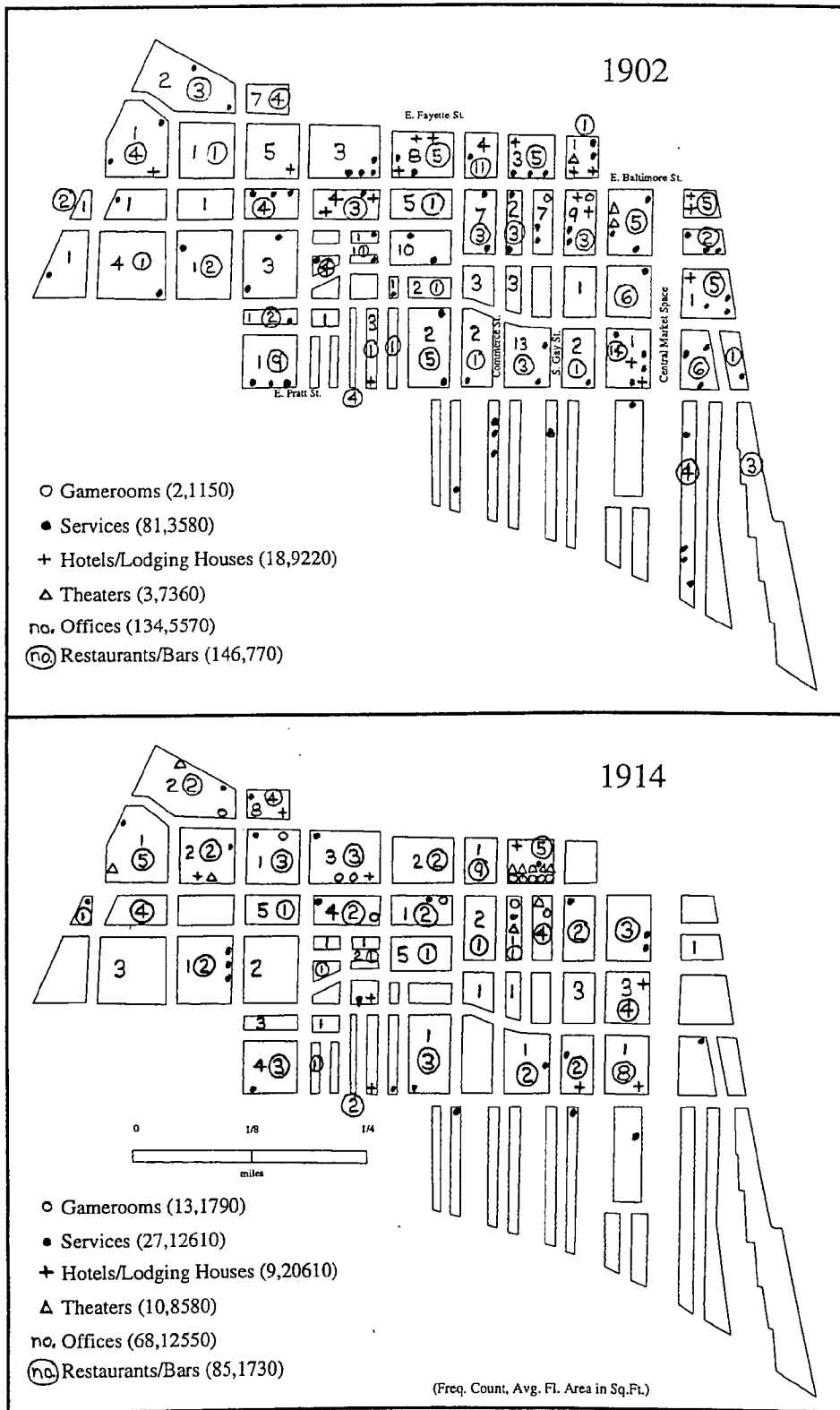
Most representative of the central business use classification are stores that retail merchandise. The Retail Clothing category (**Figure 20**) is the foremost CBD retail function and displays a prominent linear pattern along E. and W. Baltimore Street for both the pre- and post-fire period. Concentrations along this one "avenue" suggest potential advantages for access. The Retail Apparel category shows insufficient intensities for any decisive conclusions or analysis of that retail activity. Except for consumer services and retailing, no business establishments would have any direct concern with the general public, yet all their employees are customers of the same downtown retail and personal-service shops. Some of the latter, especially those in the central district, are directed toward the consumers of the entire city, but others are scattered throughout the central district wherever there is a working population to be served. The **Framework of CBD Functions (Table 5)** discussed earlier in the chapter provides an overall display of this concept. It is not simply one linkage but a whole variety of linkages that interplay.

Social and Professional Services

All kinds of stores that offer services, and the whole variety of offices so often found near the central city seem to be clearly classifiable as central business uses. For example, profit-oriented services found within the Services category include barber shops, beauty shops, and many different repair shops (i.e. from shoe repair to saddle repair), display a random spatial pattern (**Figure 21**). All groups of central district employees require accessibility to "services", which is not only a matter of concern in the handling of goods and in easy transportation for people coming into the central district from outside; it also has to do also with repeated contacts between business establishments themselves and with the public. (Rannells, 1956)

The "performing of various office functions", although vague, corresponds to the Offices category in the classification scheme. **Figure 21 (Social and Professional Services)** identifies a widely dispersed spatial pattern, although there is evidence in the pre-fire year of heavier clustering along South and Baltimore Streets mimicking the spatial pattern of "financial" establishments. In the post-fire year a linear pattern is found on the west side of St. Paul Street. Although these activities show up in other locations, their area

Figure 21 – Social and Professional Services



of maximum concentration is the CBD, where they serve the city as a whole rather than any one section or any one group of people.

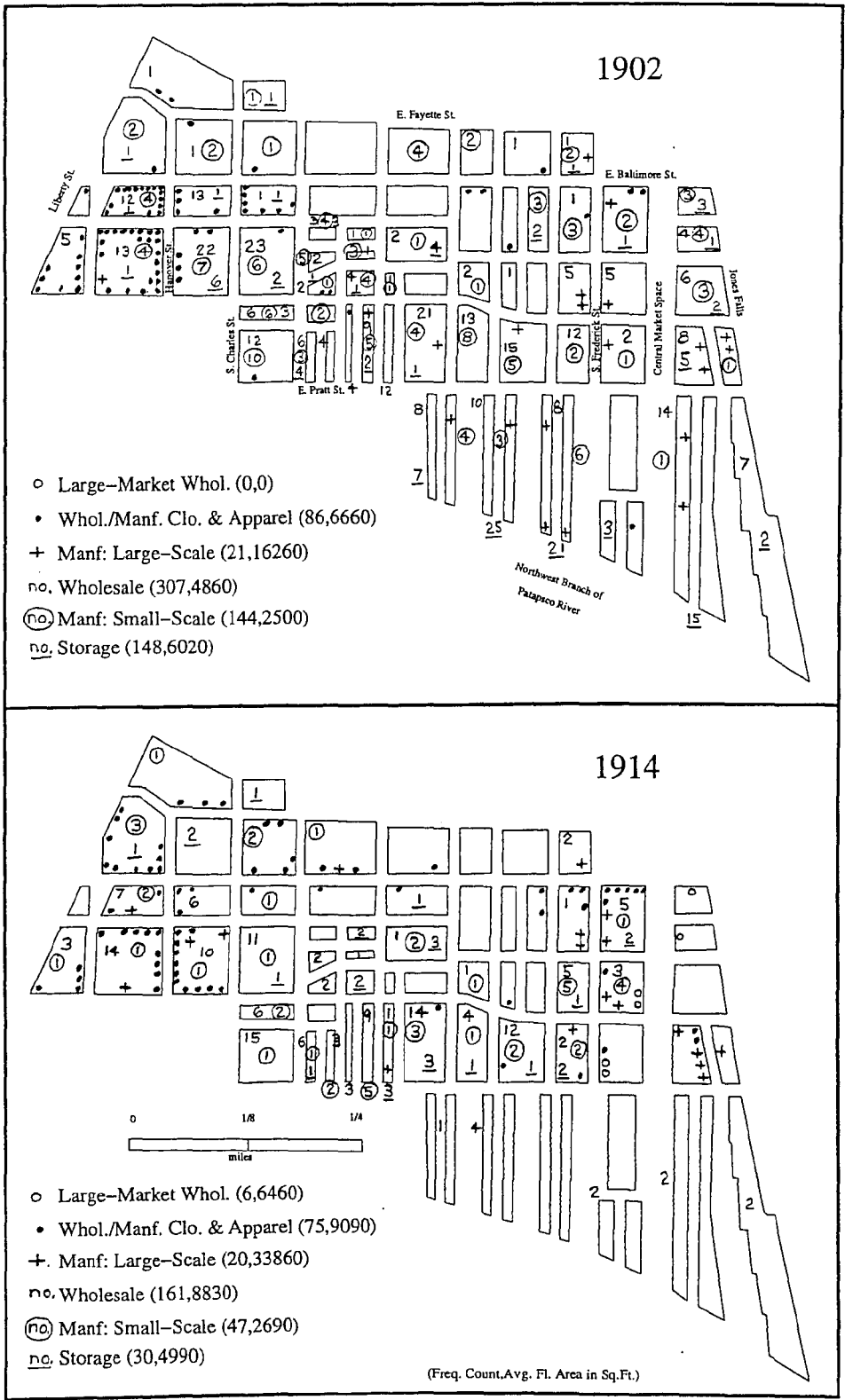
The central district in Baltimore takes on other functions deemed necessary for the functioning of a large central district which include entertainment industries such as theaters, gamerooms (i.e. pool or billiards), restaurants, bars (saloons), party or club halls, and hotels. The theater industry displayed a slight cluster in the northeast corner of the Burnt District in 1902 and a fairly dense cluster of theaters just to the west in the 1914 with a few outlying establishments in the northwest corner of the district (**Figure 21**). This pattern indicates that customers prefer an "entertainment district" as opposed to sporadic locations. The Gamerooms category, too small to identify a pattern in 1902, shows a fairly linear trend along E. Baltimore Street with a cluster between Commerce and Gay Street (**Figure 21**). The entertainment and/or service category of Restaurants as well as Bars and Halls provide a largely "blanketing" effect across most of the district. A concentration of restaurants is evident on E. Baltimore Street, especially in the blocks where the theaters located in both years. However, the concentration of Bars, although non-distinguishable from restaurants on the maps, was located along the northern portion of E.

Pratt Street in each year (mostly due to the influence of the docks). Central Market Space with its intensive pedestrian traffic also found much of the concentration of Restaurants, especially in 1902. Finally, Hotels locate around the "restaurant and theater" district along E. Fayette Street and again along Central Market Space in the pre-fire year, while becoming quite random in the post-fire year. These analyses do not, however, address the separate category of Lodging Houses, which although grouped together with Hotels serve a completely different function. Lodging Houses were found concentrated in a linear pattern along E. Pratt Street. Their function serves as more of a permanent/long-term temporary status (i.e. for sailors) whereas hotels are clearly linked in function to the "entertainment" and business sector of the central district.

Commercial/Industrial

The sets of functions within the CBD Core contain both commercial and industrial establishments. The obvious influence of the docks clearly identifies the pattern of land-use distribution immediately adjacent to the piers (**Figure 22 - Commercial/Industrial**). A comparison of the 1902 map with the 1914 map shows that wholesale, manufacturing (especially small-scale), and storage facilities are less important in 1914 in number of functions as well as total space occupied. Some of

Figure 22 – Commercial/Industrial



this change results from improved production methods. These affect mainly the internal space requirements of manufacturing establishments, which may bring about removal of some kinds of manufacturing from the central district entirely or may foreshadow further differentiation of the elements making up various finished products.

In contrast with the Traditional CBD Functions/Financial and Retailing sub-groups with their competitive linkages, the Commercial/Industrial is most strongly influenced by complementary linkages. These industries have groups of related establishments located near one another, where the activities of each of them is subject to current conditions "in the trade". (Rannells, 1956) In the case of production industries, nearness of location is of prime importance to these industries, both for flexibility of manufacture, with its frequently changing linkage patterns, and for availability of skilled labor. (Rannells, 1956)

Ubiquitous industries (Pred, 1964) are defined as those whose market area coincides with that of the whole metropolitan area, that is, if an industry is to be considered ubiquitous, it serves no particular portion of the metropolitan area more than any other. These industries are usually located near the edge of the central business district, at the terminus of

transportation routes if the raw materials for the industrial process are obtained from outside the metropolitan area. Such industries corresponding to the Commercial/Industrial type are typically found in former warehouses and multistory factory buildings, since they are linked with wholesaling and require large blocks of space for storage and handling. (Pred, 1964) Examples of supporting activities such as Storage (**Figure 22**) are found along E. Pratt Street, the port blocks, and Central Market Space in the pre-fire period and along E. Pratt Street in 1914. The categories of Large- and Small-Scale Manufacturing (**Figure 22**), however, display patterns linking establishments to transportation and storage facilities. For example, Large-Scale Manufacturing clustered along Jones Falls, S. Frederick Street slightly west of the Falls, and along the lower portion of the district just north of the docks. Yet, the Small-Scale Manufacturing firms were dispersed widely throughout the district and there were concentrations along Pratt Street again, along S. Charles Street for 1914, and along Hanover and Central Market Space, for the year 1902 only.

Those establishments heavily linked to CBD functions (**Table 5**) are communication economy industries. These industries require face-to-face contact with clients or access to information that must be obtained quickly and is best obtained through informal networks. One example

is the wholesaling and manufacturing of the women's clothing. In the women's clothing industry (not disaggregated from the category of Wholesale/Manufacturing of Clothing and Apparel) there exists perhaps the tightest spatial network (**Figure 22**), exemplified by the high degree of concentration and a clearly segregated pattern in both the pre- and post-fire period. Concentrated in the southwestern corner of the burnt district in 1902 with the only slight deviation of a linear trend along E. Baltimore Street, the Wholesale/Manufacturing of Clothing and Apparel category becomes less concentrated in 1914 in the southwestern area but extended more along the E. Baltimore Street corridor. A central location is mandatory for information from other firms in the fashion industry. These industries are chiefly composed of small plants, located in high-rent central space locations.

Yet, because some establishments found in the CBD did not aim to serve the city-wide population, various types of land use were considered outside of the scope of central business uses by Murphy and Vance. One clear example of this is wholesaling. It is localized more by the presence of railroads or other transportation media (specifically the port or water transportation component in Baltimore) than by the pull of centrality. (Murphy and Vance, July 1954) The Wholesale category in both

interval years clearly concentrates its establishments just north of the harbor and docks using these as the anchor for their locational decisions. Specifically, along both Pratt Street and Lombard Street for 1902 and 1914, linear concentrations exist for the full length of these streets in the district (**Figure 22**). In addition, in 1902, German Street and Jones Falls as well as S. Frederick Street in 1914 demonstrate linear spatial patterns within the Burnt District area. The Large-Market Wholesale category although missing from the 1902 map (because of labelling changes) shows a distinct cluster just west of Jones Falls near the Central Market Space.

The Commercial/Industrial function provides a unique view of the CBD. Both the Financial District and E. Baltimore Street stretch of blocks is largely void of commercial and industrial establishments, which had been containing most other activities until the early part of the twentieth century. This phenomenon illustrates clearly that central space is dynamically divided according to the specific functions of each establishment type.

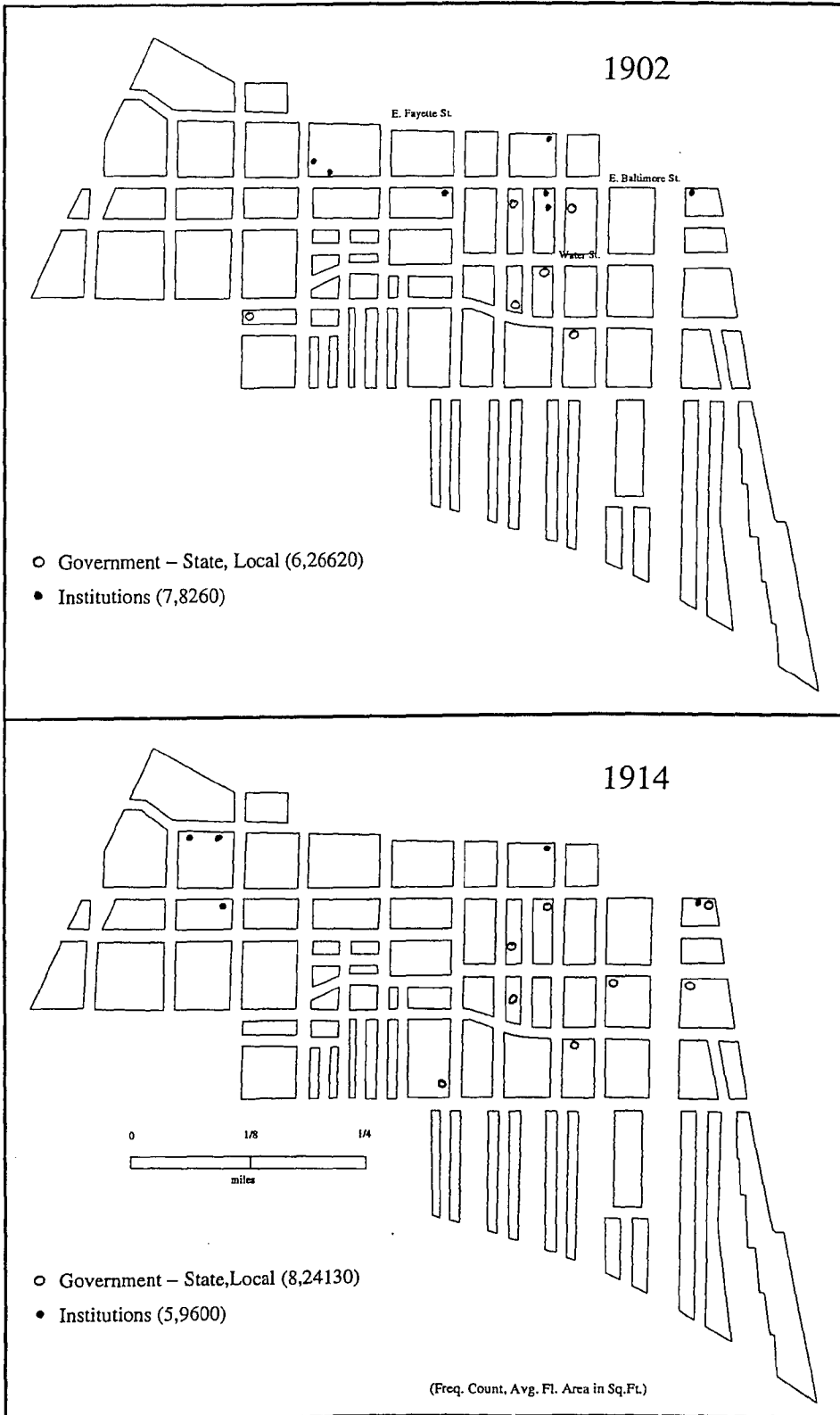
Governmental/Institutional

In addition to those types of establishments serving the entire region, the categories of Government - Local and State and Institutions - Schools, etc., offer

services for most of the city. In viewing the maps of Government **Figure 23 - Governmental/Institutional** there is a concentration, although not tight, in the blocks to the north and south of Water Street. This area corresponds to the large Custom House which acts as an anchor to that area for other governmental functions. Maps of Institutions (**Figure 23**) in 1902 suggest a linear pattern along Baltimore Street, yet in 1914 the pattern shifts slightly closer to the northern fringe of the Burnt District where just beyond the "fire-line" is the city's most prominent example of a "governmental district". Along the Northern edge of the district an institutional concentration lines the Northern border of the Burnt District. The City Court House, Central Post Office, City Hall, and Central Police Station provided an almost complete barrier to drastic movement northward. These high-capital, high-rent public buildings maintain a constant location within the city.

Although spatial patterns can be more helpful than relying on textual explanations there are occasions when the spatial pattern provides little understanding of the activity. For example, the Miscellaneous or "Not Elsewhere Classified" category does not represent establishments that were linked in any way, therefore, there is no basis for logical analysis. The last category - Vacant - showed a random or dispersed spatial

Figure 23 – Governmental/Institutional



pattern in both the pre- and post-fire years (1902 and 1914). Vacancy patterns could have partially been interpreted through examining previous establishments but as this was beyond the scope of this research explanations of this pattern can not be fully interpreted.

In **Figures 24** and **25** a number of subtle changes can be identified in both the pre- and post-fire periods in Baltimore. For example, from 1902 to 1914, the Large-Scale Manufacturing segment, the Financial segment, and the Department Store segment remain approximately the same size but make shifts in direction. The two wholesaling districts change in size with the Wholesaling/Manufacturing of Clothing increasing and the general Wholesaling segment decreasing. Both Theater and Retailing segments increase in size over the twelve years of the study. The most static segment of the Burnt District was the Government/Institution segment, which exemplifies the "staying power" of this functional grouping. The findings support the notion that the type of establishment groupings has more importance than the degree of concentration or segregation. Consideration of linkage patterns becomes an important part of understanding the spatial distributions of key functions within the CBD.

As a generalized model of the key functional

Figure 24 Map of General Districts : Baltimore 1902

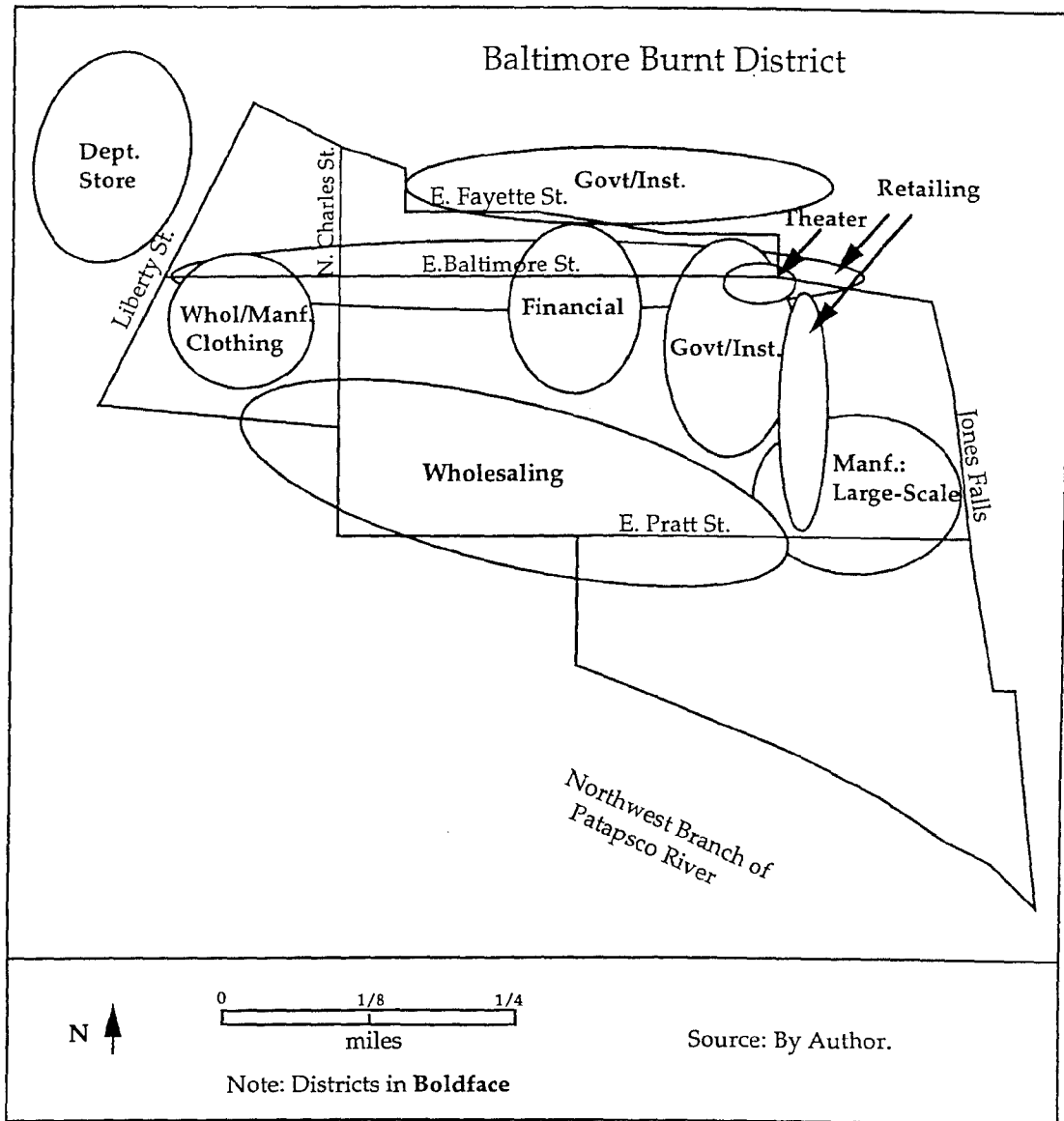
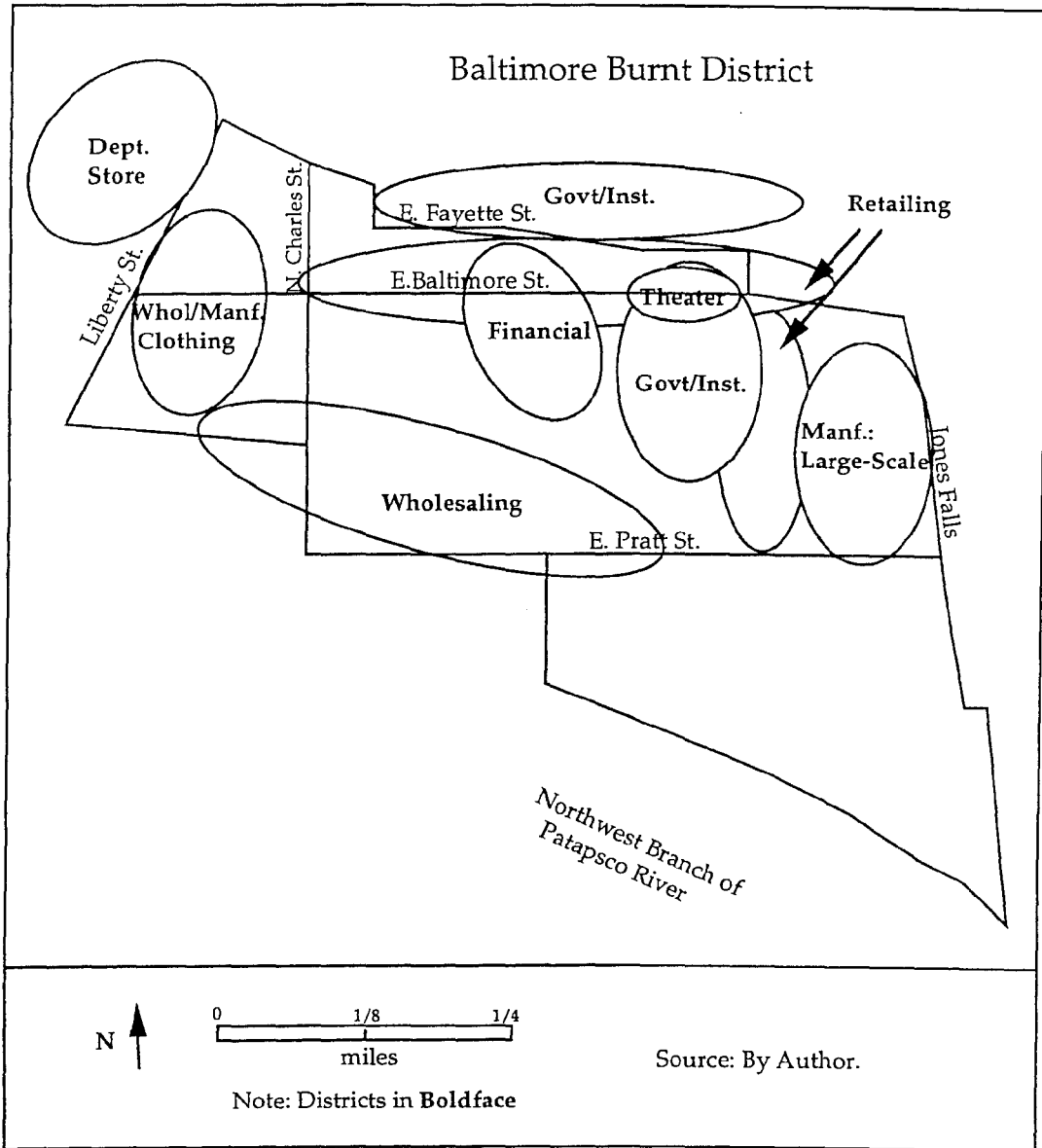


Figure 25 Map of General Districts : Baltimore 1914



distributions within the Burnt District, **Figures 24** and **25** graphically depict those activities which spatially define themselves over the reconstruction process. Each 'circle' represents a function that shows some degree of concentration within the circle, although that degree or density is not equal for each circle.⁵

Not only are there locational processes that effect the spatial patterns and decisions but the lasting morphology of the district presents unique advantages and/or disadvantages to those within the Central District. Examinations at the establishment level in the following chapter suggest reasons for the return of establishments through the measurements of sequence and persistence.

⁵ The activity groups shown in the figures correspond not only to the spatial analysis results, but also to those activities which are identified as the "tone setting" land-uses of the downtown within the sequencing and persistence portions of the analysis.

Chapter 5

The Sequence of Return and Persistence of Selected Establishments in Post-Fire Baltimore

The analysis of the processes of sequence and persistence provides supporting evidence to the spatial patterns previously identified. The selected "building block" establishments set the tone for the sequence of return of the other establishments within the District. Persistence measurements incorporate the location within the District before the fire to the location within the District after the fire.

The first part of the second research question deals with the sequence of relocation of selected establishments in the Baltimore CBD in the post-fire period (1905-1914). This question examined those establishments that were the building blocks of a downtown (i.e. financial establishments, hotels, theaters, department stores, government establishments, large-scale manufacturing establishments, and newspaper establishments). Not only did such establishments set the structure of the CBD, but they had the most substantial capital backing of any of the district's establishments. The focus on these seven categories identifies the driving force behind the most important decisions relating to the reconstruction of downtown.

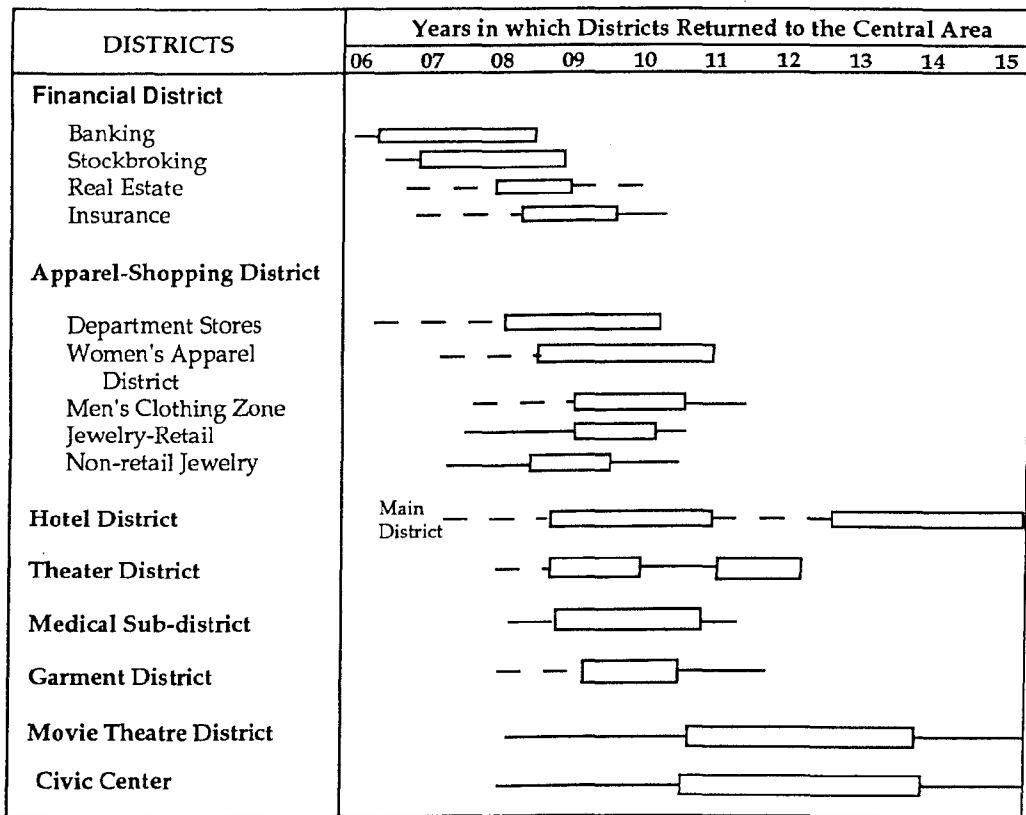
The question of sequencing was answered by

identifying those selected establishments in the Burnt District which were advertised in three two-year business directories or in a six-year time frame during the post-fire period (1906-07, 1910-11, and 1913-14). For example, in Bowden's **Sequence of Return (Figure 26)**, a simplified classification scheme portrays those establishments selected to determine the sequence of return. Through examination of the directories it was apparent that there were several unanticipated factors which would have to be considered in the sequencing analysis. Although frequency counts could suggest, to some extent, the sequenced return of establishments, they could in no way illustrate the spatial location of the returning establishments. Maps differentiating the interval years show that definite patterns were discernible during the time span. Whereas in some cases patterns may have changed over time, remained constant or even presented no obvious pattern, in other cases the distribution could not be properly identified.

The Baltimore Business Directories were organized in an alphabetical system. Like many other public listings, the unspecialized product, item, service, etc. was listed first, followed by a breakdown of specialty items into smaller subheadings (**Figure 27 - Directory Example Page**). The subheadings continued in alphabetical order and often suggested alternative headings or subheadings to check

Figure 26

The Sequence of Return in the Central Area, 1906 -15, San Francisco



(Haas, Kates, and Bowden 1977, 28)

Figure 27 - Directory Example Page

4% CERTIFICATES OF DEPOSIT INTEREST PAID QUARTERLY
WRITE FOR PARTICULARS
THE CONTINENTAL TRUST COMPANY, BALTIMORE

250 B00 1913-14 R. L. Polk & Co.'s B00

***BOOK PRINTERS.**

BALTIMORE CITY PRINTING AND BINDING COMPANY, A New and Modern Printing Plant, Latest Linotype Improvements, No Work Too Large or Too Small to Receive Our Immediate and Careful Attention, 151 to 153 and 353 to 363 Equitable Bldg and 116-118 Bank la

BOOKS—SUBSCRIPTION.

(See also Booksellers, also Stationers.)

Kummerant Wm 333 s Bond
 Netzer Karl E. 509 s Fremont av

BOOKSELLERS—OLD AND NEW.

City Book Co, 711 n Howard
LEON'S ANTIQUE BOOK STORE,
 518 n Eutaw
PIPPEN WILLIAM V, 605 n
 Eutaw

BOOKSELLERS AND STATIONERS.
 (See also Stationers.)

Alexander Thos, 869 n Howard
 Baltimore News Co, 227 n Calvert
 Banner Publishing Co, 534 n Gay
 Book Depository of M E Ch, 220 n Howard
 Book Mart The, 307 n Charles
 Caplan Hattie (Hebrew), 105 s High
CITY BOOK COMPANY (Old and new), 711 n Howard
 Cooper & Gelman, 1425 e Balto
 Dulany-Vernay Co, 339-341 n Charles
EICHELBERGER BOOK COMPANY
 The, 308 n Charles
 Episcopal Ch Book Store, 317 n Charles
 Friedman Louis (Hebrew), 1001 e Pratt
 Hanitsch Adam, 10 n Poppleton
 Harrison W E C & Sons 214 e Balto
 Henneman Milton P, 326 n Howard
 Ianahan J, 220 n Howard
 Lay Leonhardt, 554 n Gay
 Leon's Antique Book Store, 518 n Eutaw
 Levy Meyer (Hebrew), 1315 e Balto
 "Lycett," 317 n Charles
 Maryland Bible Society, 8 e Fayette
 Medical Standard Book Co, 307 n Charles
 Methodist Book Depository, 220 n Howard
 Methodist Protestant Book Concern, 318 n Charles
 Metropolitan Store, Park av c Clay
 New-Church Book Depot, 326 n Howard
 Newton L Howard & Sons, 1400 w Balto s w c Calhoun
NORMAN, REMINGTON COMPANY
 The, 303 n Charles
 Oshry Hyman Rev (Hebrew), 129 n Exeter
 Ottenheimer I & M, 321 w Balto
 Pfeffer Geo M, 805 n Howard
PIPPEN WILLIAM V (Old and New), 605 n Eutaw
 Robinson Bessie, 1113 e Pratt
 Ruane Peter J, 700 n Fremont av
 Simerly Arthur E, 9-10 Law bldg
 Smith's Book Store, 805 n Howard
 Strebehold Alexander, 106 Park av
 Wehage John H L, 122 s Eutaw
 Young & Suiden Co, 301-306 n Calvert

BOOT, SHOE AND GAITER UPPER MANUFACTURERS.

(See also Leather and Shoe Findings.)

Bull Saml T, 101 Mercer
 Ortman W G, 1724 e Preston
 Perel Morris, 312 s High
 Schochet Saml, 113 n Greene
 Schwind Fredk, 411 w Mulberry

BOOT AND SHOE MANUFACTURERS.

(See also Boots and Shoes Wholesale, also Shoemakers)

Balto-Harrisburg Shoe Co, 27 Hanover
 Brown David, S17 e Balto
 Clement & Ball Shoe Mfg Co, 301 n Holliday
 Colmary A H & Co, 307 w Mulberry
 Dreyer John H & Co, Fairmt av c Bethel
 Fuhrer Henry, 1953 w Fayette
 Hess N & Bro, 17 Harrison
 Ideal Shoe Mfg Co, 107-109 e Lombard
 Perfect Shoe Mfg Co, 225 n Frederick
 Roth Abraham, 1312 e Balto
 Samuels M & Co, 21 s Hanover
 Tison John T, 910 e Preston

BOOTS AND SHOES—WHOLESALE
 (See also Boot and Shoe Manufacturers.)

Anderson Shoe Co, 910 Ridgely
 Balto Bargain House, 204-220 w Balto and 213-221 w Fayette
 Boston Rubber Shoe Co, 321 w Lombard
 Carroll, Adams & Co, 22-24 s Howard
 Chamberlain Saml N, 207 w Balto
 Cohen-Adler Shoe Co, 32 Hanover
 Dixon, Bartlett Co, 112 w German
 Eichengreen & Co, 103 w German
 Frank & Adler, 307-309 w Balto
 Grotjan-Lobe Co The, 223225 w Balto
HALLE S SONS, 329-331 w Baltimore
 Jandorf R & Co, 31 Hanover
 Klotzman Aaron, 117 w Balto
 Kurtzville & Blechman, 708 e Lexington
 Merritt-Elliott & Co, 203 w Lombard
 Mills Geo T & Co, 103 Hopkins pl
 Myers D & Sons, 27 s Howard
 Patapsco Shoe Co, 910-912 Ridgely
 Phillips Saml D, 238 Harrison
 Potomac Rubber Co, 109 w German
 Pretzfelder H & Co, 39 s Liberty
 Rice & Hutchins' Balto Co, 101 Hopkins pl
 Spear Bros, 104 Hopkins pl
 Thibman Robt E Co, 117 w Lombard
VOLK P H & CO, 2-4 w Lombard

BOOTS AND SHOES—RETAIL.

Adt Chas A, 704 Druid Hill av
 Alter Jos, 1839 Pa av
 Balto Shoe Co, 824 w Balto
 Bentley & Melvin, 326 w Balto, 1 n Eutaw, 427-429 e Balto, 2 s Gay
 Berman Morris, 1013 s Charles
 Blinichkoff Herman, 25 s High
 Bloxom & Co, 617 e Balto
 Blum Jacob, 2819 O'Donnell
 Boot Shop The, 303 w Lexington
 Bosse-Burke Shoe Co, 103 w Balto
 Boston Shoe Co, 115 e Balto, 37-38 w Lexington
 Brady & Boylan, 418-422 n Charles
 Brill Simon, 1500 e Pratt
 Bristol Shoe Store, 38 w Lexington
 Brockton Shoe Stores Co, 208-515 e Balto 322 w Balto, 422 s Bdway, 522 n Gay and 925 w 36th n

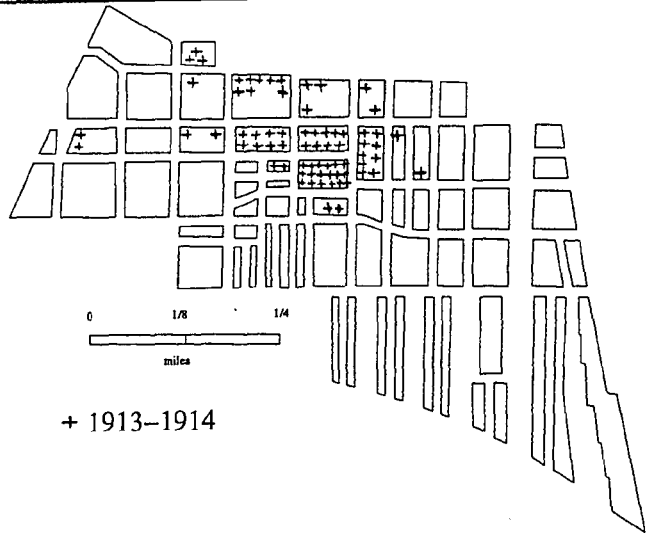
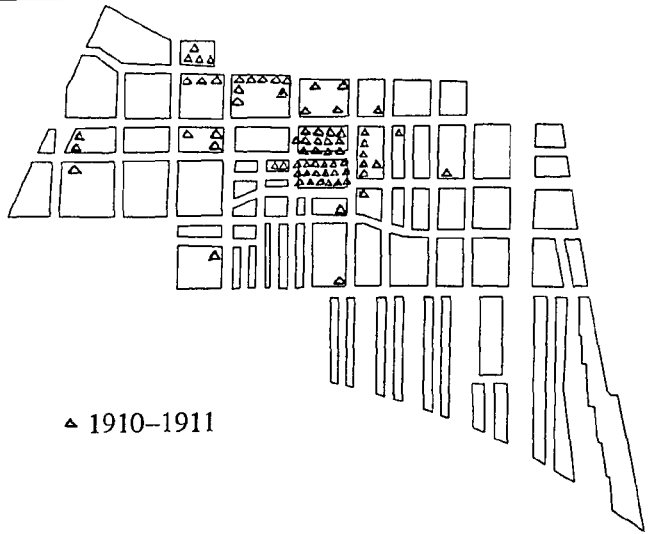
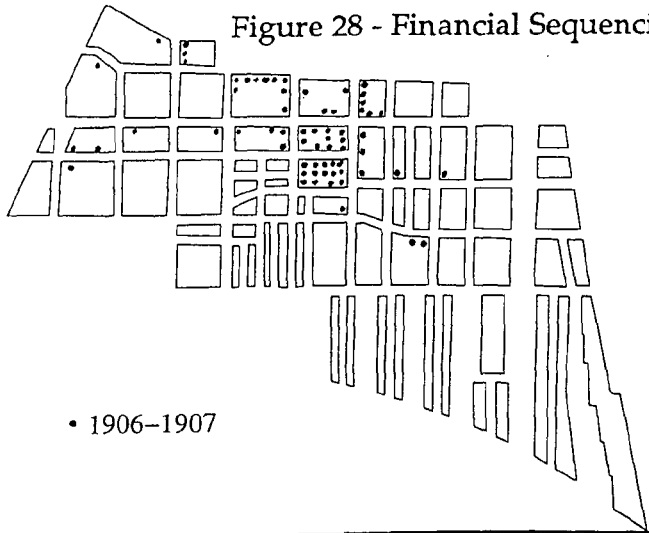
Source: Baltimore Business Directories, 1913-14.

for additional listings. These additional subheadings were often found to be helpful since the labelling was sometimes different from what would currently be expected in business directories.

The first of the selected establishments to consider was the **financial establishment** with the critical rationale of their investment potential. Indicative of the previously discussed financial stamina within the Burnt District, this segment demonstrated the fastest and most substantial return to essentially what can be called the *financial district* of downtown Baltimore. In the areas around the 200 block of E. Baltimore Street (**see Address Map - Figure 18 and Figure 28 - Financial Sequencing Map**), 100 and 200 block of E. German Street, South Street, and E. Fayette Street, there were specific concentrations of financial establishments. In absolute numbers, banks and other financial institutions, such as bonding companies, bill and stock companies, and trust companies, were virtually back in place within the district by the year 1906 (**Figure 28**).

In the progression of directory years evaluated, the number of financial institutions, predominately banks, rose from 65 (1906-07) to 77 (1910-11) to 78 (1913-14) in the post-fire interval. Therefore, it can be assessed that the vast majority of these institutions made their return to the district promptly after the fire (by 1906).

Figure 28 - Financial Sequencing



Not only was there little change in the location of the financial district but, in fact, one particular building, the Keyser Building, can be highlighted as the focal point throughout the interval (**see Figure 9 for location**). Other buildings with concentrations of financial activities include the Equitable Building, the Stock Exchange, and the Calvert Building. It can also be seen in the overall examination of the three Financial Sequencing Maps that the financial district becomes closer knit spatially the longer the elapsed time from the date of the fire.

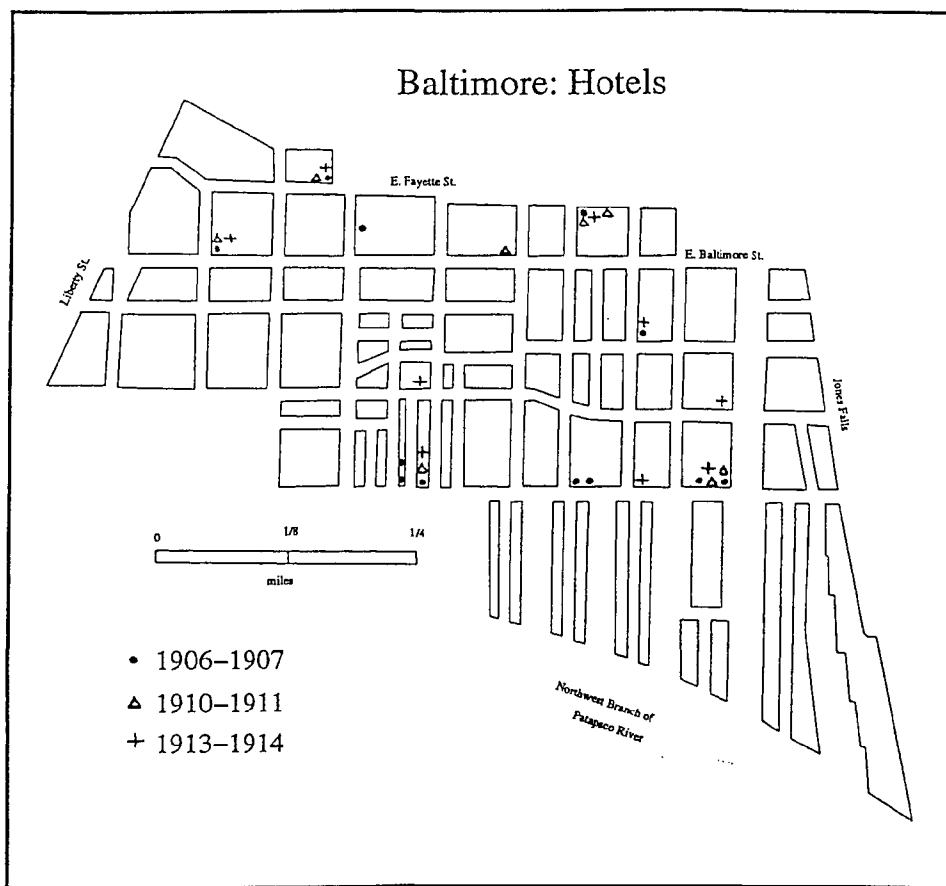
An initial conclusion, discussed more fully later, attributes the essentially prompt return of most financial establishments to the fact that because the Burnt District was also the heart of the financial district, and since money was (and is) a key to any business building endeavor, not only bankers but those who had their money in banks made sure that these establishments returned quickly. Without this key industry other establishments would have been unable to reconstruct their industries. It was necessary to continue the financial activities of the city, to ensure loans, investments, and other activities were kept viable. In considering primary versus secondary return patterns, what would one expect *but* banks, through investors to return promptly to the district.

The next selected function was the **department store**, based on the rationale that it represents a key downtown establishment that set the location of downtown retailing. To establish the sequence of its return, however, was not as straight-forward as with the financial establishments. A basic problem was that in the directory listings many department stores were not classified as such, but were listed under various retail specialties as well as dry goods stores. Of the department stores that were listed only a few were found to be in the burnt district. Generally, the majority of the department stores were found to the west and northwest of the downtown area, on N. Eutaw, W. Lexington, N. Charles, and W. Baltimore (**Figure 9**). It can be argued, therefore, that department stores did not play a key role in terms of numbers within the Burnt District. Based on the floor area of those stores in the district in relation to the size of other establishments in the area, however, department stores in the district averaged 60,800 square feet of floor area compared with the second largest average floor area of 33,900 square feet for Large-Scale Manufacturing establishments (**Table 3**). It is evident that department stores were on a different level in terms of their scale. With this much difference between the first and second average floor areas, the scale component takes on paramount importance.

The obvious disparity in the size of CBD establishments relates to the number and quality of decisions made in initiating those establishments. Differences between having hundreds of small establishments of one type as opposed to only a few in a district suggest that the magnitude of the decision was much different.

Hotels, within the Burnt District, played an important role in the life of the downtown area. A large number of them, however, took on a different function than they would today, acting as permanent residences. Hotels then would be partially fulfilling the function of apartment houses. However, the fact that there were no apartment houses in or near the downtown speaks to the non-residential character of this district. The majority of such residential functions existed to the west and north of the downtown. The hotels were fairly consistent in their locations within the district throughout the interval. For example, the Fountain Hotel, the Junker Hotel, and the Raleigh Hotel were all identified in the same location in each of the three directories (**Hotel Sequencing - Figure 29**). Yet, other hotels also had a widely dispersed pattern. A slight linear pattern along the North side of E. Pratt Street was really the only discernable pattern, besides a cluster just beyond the district at the northeast corner and at the southwest corner of the Central Market Space. Other hotels were

Figure 29 – Hotel Sequencing



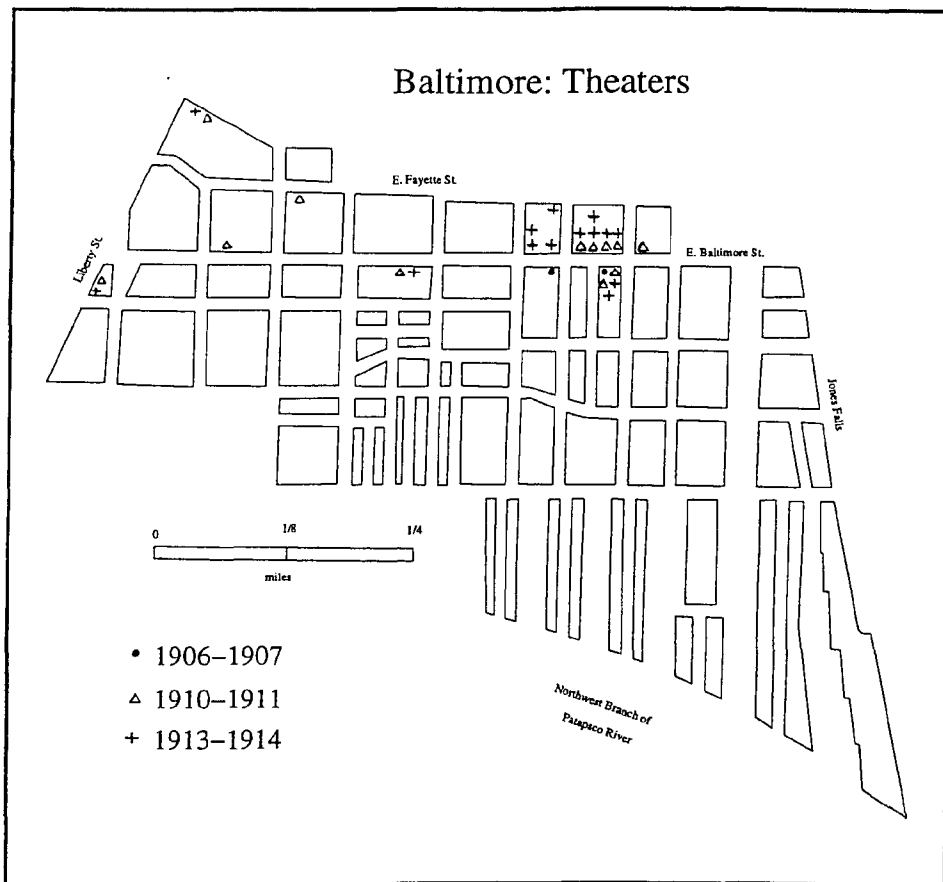
mostly to the west of downtown on Baltimore, Pratt, Eutaw, and Broadway Streets. As many hotels in the district remained stationary, it is noteworthy that the majority of the hotels advertised many of the following amenities: European Plan, rooms with private baths available, \$1.00 per day, fireproof rooms (ironically), and many even stated that they were "stag hotels." Beyond the temporary living status of hotel residents, there may not seem to be a great need for hotels in this portion of the city, as the number declined from twelve (1906-07) to eight (1910-11) to nine (1913-14) in the ten year interval. Any decisive pattern can not be fully appreciated since the trend does not continue in one direction. However, the overall size of Hotels/Lodging Houses displayed a significant increase from a mere 9280 (1902) square feet to 20800 (1914) square feet of floor area. Therefore, this district continued as a focal point for hotel space and the relationship between it and transportation hubs (railroad stations and the port) is evident.

The next type of establishment mapped in terms of sequencing was **theaters** or "places of amusement [sic]." The greatest increase in absolute numbers was experienced in this category, from a mere two (1902) in the district to a 700% increase to fourteen (1914). The overwhelming factor influencing this increase was the change in

technology from "live" theaters to "moving picture" theaters. Not only could the latter profit at a much smaller scale but they also were within the financial reach of more theater-goers of the time. Moving pictures captured the audience of not just the upper-class but pulled from virtually all socio-economic groups. Although the number of movie houses increased, the actual size of the buildings decreased during this interval (**Table 3**). Since the moving picture theaters accounted for most of the increase in the district, there remain few "live" theaters that it was difficult to evaluate their strength within the district. However, most of the theaters were concentrated near the 300 block of E. Baltimore Street, which does suggest some degree of agglomeration economies, perhaps related to the idea of an "entertainment district" (**Theater Sequencing - Figure 30**). This district attracted not only movie-goers but also restaurant-goers, hence the large numbers of restaurants found in this section of the Burnt District (**Figure 21**).

Although for different reasons, neither **government activities** nor **large-scale manufacturing** establishments were identified in the business directories. First, the governmental activities (state and local), were probably not found largely because they did not fall under the category of "business" at this time. They might have

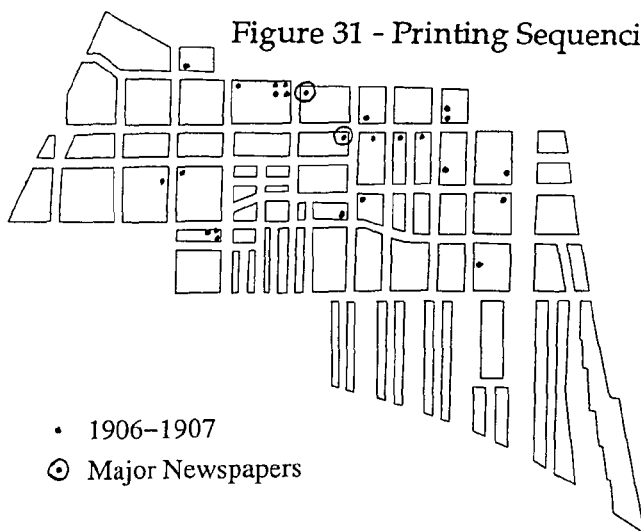
Figure 30 – Theater Sequencing



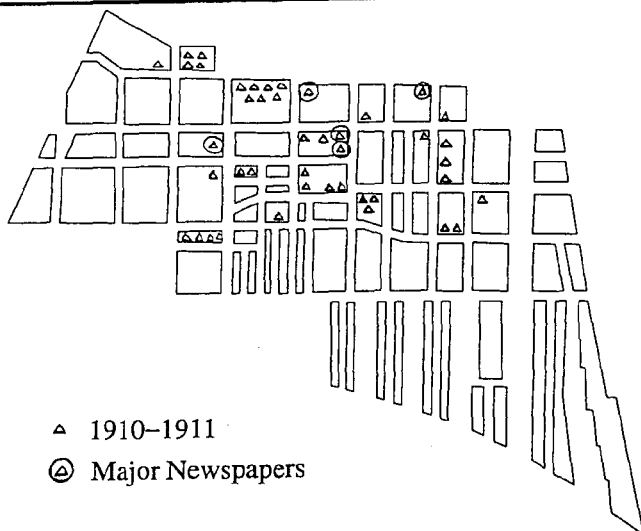
been classified under individual service components such as fire departments, post offices and police stations but were not found there either. In current directories, the governmental functions, though much expanded, have their own section, usually differentiated from residential and business by different colored pages. Governmental activities were not found in the directories, whereas the large-scale manufacturing industries were there but because of specialized headings could not be found. The scale component reflected in size of floor area and number of floors could not be determined for manufacturing industries in the business directories. Unfortunately, this meant that these types of manufacturing establishments within the Burnt District would not have sequencing results.

The last category, **printers/newspapers**, was further narrowed to only newspapers, publishers, and printers --- "book and job" only. Virtually every newspaper identified in the district also had a publishing company listed under the same name, therefore these were listed only once on the map (**Printing Sequencing - Figure 31**). In addition, newspapers were listed under the heading of "Newspapers and Magazines", which was further disaggregated into the subheadings of: Monthly, Semi-Monthly, Semi-Weekly, Weekly, and Daily. Among those establishments staying in the same location were *The*

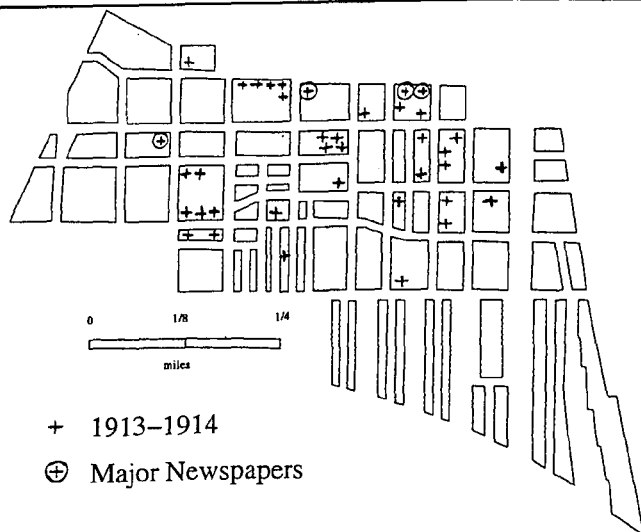
Figure 31 - Printing Sequencing



- 1906-1907
- ⊙ Major Newspapers



- ▲ 1910-1911
- ⊙ Major Newspapers



- + 1913-1914
- ⊕ Major Newspapers

Baltimore News, *The German Correspondent*, and *R.L. Polk Directories*. Although the return of newspaper and magazines came back at a more gradual pace with 28 establishments returning by 1906-07, 43 by 1910-11, and then a slight decline to 39 establishments in 1913-14, it was evident that these functions made up an important part of the central district. Not only were the majority of the newspapers in the city returning to this area but those which took longer to return were temporarily working out of other buildings close by. The general spatial pattern of return was random in nature (Figure 31), which suggests that these establishments did not take advantage of economies of scale. Mencken's, Newspaper Days (1975), particularly the chapter focusing on the aftermath of the fire, supports this finding as local printers and publishers outside the district (though few) were largely unwilling to help those who had been burnt out for any long period of time.

Newspapers, can be thought of as an exception to the general rule that industrial establishments are not CBD functions. To a large degree publishing a newspaper (or magazine) is a production operation. Yet, the same concern sells newspapers and sells advertising in newspapers, and is so closely tied to central business activities that it is clearly recognized as a central business function. (Murphy and Vance, July 1954)

Persistence Results

Since the entire Burnt District had been virtually levelled (though some buildings had outside frames standing with gutted middles) (Figure 6 and 7), anything inside that district had to be rebuilt. This meant, in financial terms, that the establishment had to either borrow or have a fair amount of capital that could be expended in the short term. Because of the differences regarding capital requirements, establishments were often unable to return to the same location in the district. Some were not able to return to business even in other locations. This study focused on the Burnt District area, and, as a result, those establishments relocating to areas outside the district were not formally identified.

Through a refined searching method, each establishment of the seven selected functions taken from the Sanborn database was searched for by establishment name and/or address in the business directories. The years directly following the fire were, of course, where the search began. Then, each directory following was reviewed until each establishment was found or until the directory year reached 1914 (the furthest extent of the research time frame).

As some establishments found, it was painfully clear that relocation outside the downtown area meant that they

were no longer competitive. Since interrelationships were strengthened when similar establishments assembled near each other, many types of establishments had no real choice but to locate in downtown (i.e. large banks). The economies of scale enabled benefits for those who could not "go it alone" and restrained the few who may have survived on their own. Competition, too, led to the domination of a few selective functions. Those competing for a particular market were compelled to position themselves in both convenient and high priority areas.

As the seven functions were chosen for their importance to the downtown as a whole, the trend of early return seems to be quite consistent with expected results. Banking was foremost in returning to "business as usual." Examination of the **Persistence Results - Table 6**, indicates that banking establishments (financial component) returned most often in the year 1905 and had an average year of return (1905) earlier than any other selected function. Excluding the distant outliers in the total range of years of return, banks once again led the group having the narrowest early range of return years, 1904-1906. In these few years, the tallied returns for each year suggest that the banking industry was most adapt to the challenge of reconstruction.

For the other selected establishments, neither department stores and government - state and local, could

Table 6

Persistence Results

Establishment	Avg Year Return	Mode Year Return	Range Return
Financial	1905	1905	1904-1906
Hotels	1907	1907	1905-1910
Theaters	1907	1907	1907-1911
Manf-Large Sc	1906	1906	1906-1909
Newspapers	1906	1906	1905-1907

Note: Because both department stores and government establishments could not be properly identified in the Business Directories, justification and use of different sources (i.e. newspapers and telephone books) was made in order to establish persistence within the district after the fire.

Source: Sanborn Atlases and Baltimore Business Directories

be clearly identified in the directories. Therefore, deviation from the "normal" sources was justified, because of the importance of these establishments.

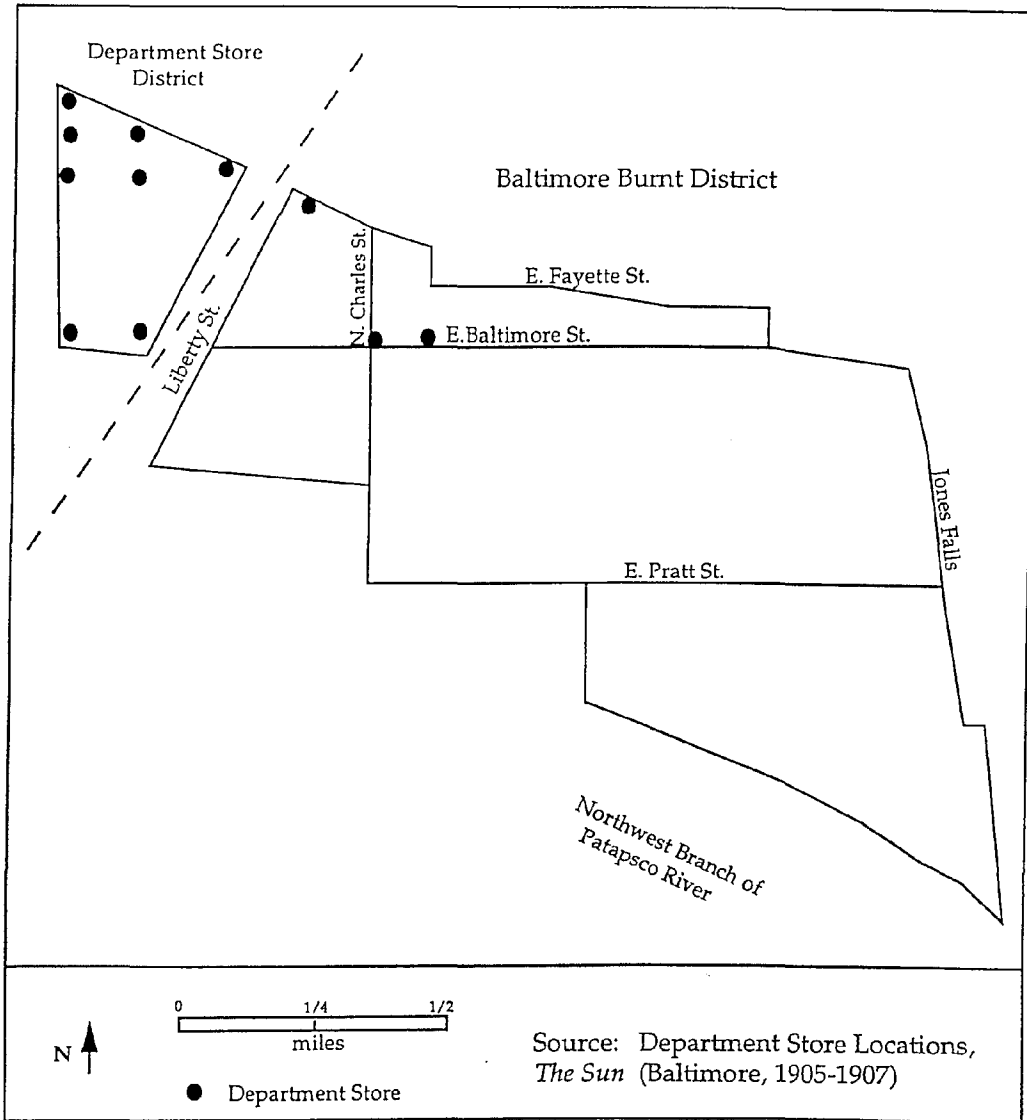
As discussed in the sequencing results for department stores, the location of department stores did persist in the post-fire period to both the west and north-west of the burnt district. With barriers on three sides of the district: harbor to the south, Jones Falls to the east, and the "Government District" to the North, the western portion of the district was the only accessible location available for this "scale" establishment. Because of their large size, department stores found it hard to relocate into the central district. Instead, in the years following the fire the "Department Store District" remained to the west-north-west of the central district just beyond the clothing wholesale/manufacturing district. By 1914 the scale (size) of department stores was such that the amount of square footage necessary for such establishments was rarely available in the central district. However, based on advertisements in *The Sun* (Baltimore, 1905 to 1907) the Nathan Gutman & Company department store located within the Burnt District on W. Lexington Street and persisted in this location in the post-fire period. However, only two other "new" establishments obtained space within the district in the post-fire period. The

Hub store at Baltimore and Charles Street and the New York Clothing House at E. Baltimore and Light Street opened in the years directly following the fire, but maintained older branches of these stores within the "Department Store District" just beyond the central district (**Department Store District - Figure 32**).

As with Department Stores, it was necessary to find another source to establish the persistence of the Government category. Although at an early stage of development, telephone directories were found to be the best source for identifying persistence of these establishments within the Burnt District. Government establishments of both state and local type persisted within the Burnt District, based on telephone listings directly following the fire.

Presumably because of their close relationship and their obvious pattern of development within a concentrated area, hotels and theaters follow similar persistence levels (**Table 6**). The average year of return was 1907 for each, as was the modal year of return. The respective range of return years for hotels and theaters was 1905 to 1910 and 1907 to 1911. This level of persistence suggests that hotels and theaters and (hypothetically) finer restaurants should return at approximately the same time. The customers for these establishments were generally seeking the combination of

Figure 32 Baltimore Department Store District



these service components of the city not simply one. The existence of these functions or services suggest that the "pleasurable" activities not just the business "goings-on" have returned to the area by 1907. Changes in technology with regard to the theater industry, notably the introduction of moving pictures, led to an even greater attraction to the area than before the fire.

Although unable to apply the sequencing measure to large-scale manufacturing, it was fairly easy to measure persistence, since most of the large manufacturing industries were listed by name on the Sanborn atlases. Therefore, regardless of which type of manufacturing firm, whether manufacturers of furniture or cans or spices, the actual name and function could be found in the directory under the appropriate sub-heading. The large size of a firm did not guarantee its return although in viewing the average and modal year of return (1906) and range of 1906-1909 it is easy to deduce that these firms operating at large-scale played a key role in the manufacturing life of the city (**Table 6**). Recovery meant that new products had to be made as well as sold both internally and for export. Not only were these firms significant in their financial contribution to the city through its products but, as Baltimore was increasingly being recognized as a manufacturing center (Olson, 1980), the number of manufacturing jobs was

important to the city and its future.

The final functions addressed in the persistence measurement was newspapers. The newspapers portion of the printing/newspaper category was highlighted as lack of names of printing establishments meant difficulty in finding them in the directories. The newspaper component, however, was largely identified by the name of the newspaper which allowed for easier matching. As would be expected the newspaper firms had little choice but to return to the downtown area. Not only are the large city newspapers in downtown, but so also are the specialized financial or manufacturing newspapers and magazines. By the year 1906, most of the newspapers and magazines printed in Baltimore's downtown had returned. The average year of return and modal year of return was 1906. The range of years which newspapers and magazines generally returned fell between 1905 and 1907. Public awareness and their access to information, not to mention the advertising component, meant that this function would not be stifled for long. In fact, directly following the fire, even before any physical reconstruction, the presses were running at remote sites --- to ensure that Baltimoreans would have access to the "news". (Mencken, 1975)

Chapter 6

Conclusions

Conceptual Framework

This study has extended several of the conceptual ideas of other researchers. First, most closely related to the modelling of this study was the 1967 study of San Francisco following the 1906 earthquake/fire disaster by Bowden.⁶ Although using a similar methodology to analyze the spatial arrangements of CBD establishments, his interpretations of the zones external to the Central District as well as empirical delimitation methods differ from this effort. His conclusions regarding the reconstruction era are supported by some of the findings of this research, most specifically the idea of commercial concentrations. Although San Francisco had different mechanisms influencing its changes, Baltimore exhibited a similar overall process that guided the locational decisions during the reconstruction period. Bowden's research on reconstruction, however, remains only a small piece of his extensive historical and empirical findings regarding the dynamics of the Central District of San Francisco. The research on Baltimore

⁶ All references made to Bowden's work on San Francisco are from his 1967 dissertation, The Dynamics of City Growth: An Historical Geography of the San Francisco Central District, 1850-1931, University of California, Berkeley, California.

covers a much narrower temporal agenda, and yet offers some of the same results, such as the sequence of return of financial establishments. Bowden's results provide important findings on a different scale including destroyed areas and surrounding areas and analyzes a longer time period in the analysis of reconstruction in a central district.

A research effort using a rich empirical base for studying the locational relationships and linkages among various establishment types was that of Rannells (1956), in The Core of the City. Although Philadelphia was used in his analysis, similarities in the cities present potential similarities in results. Age and size of the cities as well as the trading activities within the cities represent some of the similarities which may warrant relationships among locational patterns. His functional classification approach is similar to this study which attempts to isolate and examine CBD activities according to their functional role and the spatial relationship each has to the other. As Haig (1927) suggested in his research on Central Business Districts, the "packets of activities" that make up a CBD play a strong role in the District as a whole.

This study could be classified as a linkage study, as the footprints of the pre- and post-fire time-frame suggest which establishment's functions are most

optimally located. The event of the fire provided the effected establishments the opportunity to discontinue the establishment, set up a new one at a "better" location, or to divide the functions into separate establishments with the new branch located optimally with regard to its own pattern of linkages. (Rannells, 1956)

This research, just as Rannells', focuses on establishments and their linkages in forming a scheme for analysis of changing land use. Attention is given to the roles of establishments as functioning units within significant categories of activities in which they are engaged and as units in related activities that cut across these primary categories. "The dynamic networks of interaction that make up city life can be traced by way of linkages between establishments." (Rannells, 1956, 21) This study found that the role of the establishment played a large part in the determination of its ability to return to the District and at what speed. For example, certain activities compete for CBD space, such as newspapers and magazines, regardless of expense as the location is required to actively compete in the industry, this found to be the case in both Bowden's study and the present study.

Generalizations About Research

Before this study was complete it was posited that the functions within the CBD would become more

concentrated and segregated with the reconstruction process. Bowden's thesis that commercial districts that overlapped each other in the pre-disaster central area became discrete after the fire was not upheld. His research found that the process of concentration in the financial district occurred after 1915. The spatial analysis of Sanborn Atlases data for Baltimore indicated that this process did not occur at any appreciable level during the reconstruction period. **Figures 24 and 25** identify the General Districts which occupy the Central District and illustrate that the major changes from 1902 to 1914 take the form of slight shifts or slight variations in district size.

The sequencing portion of the analysis identifies from the Business Directories (1906-07, 1910-11, 1913-14) which establishments were built in the Burnt District and in what order, in terms of functions. The graphical results for the sequencing analysis presented Theaters and Financial establishments as being the most likely to concentrate in an area through the various directory dates chosen. These "districts" can be seen in **Figures 24 and 25**.

A corresponding yet separate portion of the examination of the persistence of establishments, linked both primary data sources (Sanborn Atlases and Business Directories). Persistence results examined which

establishments by name returned to the Burnt District, in what location, and at what pace. Because only the "building block" (financial, hotel, theater, large-scale manufacturing, newspaper, government, and department store) establishments of the Central District were focused on, it was not surprising that the average year of return was very soon after the 1904 disaster. The fastest returning activity was the financial segment.

In Bowden's San Francisco study, the sequence of return for these core districts occurred within two years which represents the identical results found for the financial district, in particular, as well as other key functional districts in Baltimore. Also, in the other districts of the Central District of San Francisco development took place more slowly, in rough parallel to the results of the Baltimore study.

Bowden identifies the process of intensification or concentration ("drawing together of related activities into tightly circumscribed areas") in all districts during the reconstruction process. (Bowden, 1967, 568) As expected in all areas of growth, the process of exclusion provides the opportunity for related or linked activities in a particular niche in the city to force out or exclude from it incompatible or non-complementary activities. These two processes were strongest in the years directly following the fire (1904-1906) and in the

few key functional districts previously emphasized (financial, retail, theaters, etc.). In the case of San Francisco these processes took shape in 1906 through 1909, corresponding in response time to the Baltimore fire.

However, inconsistent with the findings in Baltimore, Bowden considers several activities incompatible with the efficient working of the Central District as a whole. These activities labelled as non-Central District functions --- general manufacturing, general wholesaling, and printing do exist in and return to the core district of Baltimore during the reconstruction process. Baltimore's core district not only contains these activities but shows concentrations of some of them within districts in both pre- and post-fire Baltimore (**Figures 24 and 25**). For example, the Wholesaling district just to the north of the docks maintains a fairly large concentration of activities although shrinking somewhat in the second interval year. Primarily, due to the access and locational advantages of the Baltimore CBD, both manufacturing and wholesaling are considered within the framework of the central district and its activities.

The answers to the posed research questions provide a better understanding of the reconstruction of the Burnt District of Baltimore, but also identify a number of

defining situations. Individual establishments or groups of establishments become fixed or anchored to their locations through the "staying power" of other establishments, such as government buildings or stock exchanges. In **Figures 24** and **25**, almost the entire northern edge of the district is lined with large government buildings (i.e. the Court House, Post Office, and City Hall), which act to mitigate the variations in land-use patterns. As the most static segment of the Burnt District, this district is further constrained by the large Custom House which is located below the eastern half of that governmental barrier. Not only does this "governmental barrier" exist in both pre- and post-fire Baltimore, but the morphology of the district maintains "natural" barriers to both the South and the East of the District (i.e. the Northwest Branch of the Patapsco River and Jones Falls). Instead of the anchoring effects of a "governmental district", such as the one found in Baltimore, Bowden found that a stock exchange building plays this role in the anchoring of the financial segment of San Francisco.

Establishments in Baltimore find themselves squeezed into a district with the opportunity for extension most obviously provided at the western edge. In comparison to this study of only the Burnt District, Bowden's study identified areas beyond that district as places where the

dominant growth process, horizontal expansion would occur. As with Baltimore in 1904, the destruction of San Francisco in 1906, was almost total in certain areas of the city. However, in Baltimore the fire destroyed the CBD, whereas, in San Francisco the destruction was in an area that had been virtually discarded by the Central Business District in the previous twenty years and in the fill lands to the east of the Central Districts. A substantial difference is identified between Baltimore and San Francisco is that while San Francisco had land ("space") to move or grow into during the reconstruction process Baltimore had only limited space on the western edge of the Burnt District.

Beyond these defining barriers, outside influences such as transportation networks and trade networks also substantially influence the dynamics of the District. The port situation plays a role in each of these networks. In terms of the wholesaling and manufacturing industries, the port remains the "lifeline" to the rest of the trading world. Another identifiable spatial phenomenon is the concentration of activities (particularly retail) along one avenue, E. Baltimore Street (**Figures 24 and 25**). The advantages of access that result from pedestrian traffic as well as the public transportation lines are played out along this one street which acts as the main artery of the retail industry

within the CBD. These situations illustrate that the process of reconstruction does not begin with a "clean slate" providing for an uninhibited set of locational decisions but with an existing economic landscape that must be accommodated. The idea of a "clean slate" suggests the potential for substantial changes, however, that was not found to be the case in Baltimore. A significant finding shows that Baltimore maintained a high degree of consistency within the Burnt District during the reconstruction process. This consistency in both Baltimore and San Francisco is evident through the tendency for "burnt-out" establishments to not only rebuild on the same site but rebuild largely in their former image.

This consistency of concentrations in the pre- and post-fire footprints (**Figure 24** and **25**), however, does not preclude another significant generalization. The vertical dimension of Baltimore changed drastically from 1904 to 1914, as seen by reviewing **Tables 2** and **3**. Since a defined area (size) remains constant, the increase in availability of space can be explained by the vertical growth of buildings. The increase in vertical floor space in Baltimore corresponds to the findings of Bowden for San Francisco that "buildings were bigger after the fire; the skyline was higher." (Bowden, 1967, 563) The functional structure of the CBD would have been different

from that which was actually re-established by 1914-1915, had there been no fires. Yet, Bowden's study of San Francisco provided data concerning the vertical morphology because of his use of Murphy and Vance's, Central Business Intensity Index.⁷ The fact that the San Francisco disaster resulted from earthquakes and then a large-scale fire meant that there were different fears during the reconstruction efforts. In the two years directly after the earthquake, building practices reflected the fear of building- and land-owners in the conservative height of buildings. But with the idea of a "settling condition" in the earth's surface during the next fifty to one-hundred years, the height of buildings gradually increased, particularly in the core districts of San Francisco. However, the Baltimore study is not a morphological study, such a study would contain building plot and building size information, much more than simple square footage.

What does the reconstruction process mean? In fact, it finds owners scrambling to acquire space within the burnt-out district in a competition for dominance. The easiest way to hold on to some of the space was to occupy the same space as before the fire. Entrepreneurs who

⁷ The Central Business Index is the percentage that total floor area of central business uses contributes to the total floor space at all levels. (Bowden, 1967, 51)

wanted access to space found the sequence of return (as related to their function) as the most important process. Not only do early returning establishments set the tone for other slower returning establishments but the "race of space" only lasts until the space is filled. After the area has been filled the advantage of central access is no longer a possibility.

Because of the surprising speed of return, attention must be directed to exactly which establishments are returning at such a fast pace. With both Baltimore and San Francisco the fastest returning functions were the financial sector, hotel sector, and theater sector of the CBD. These early returning establishments set the tone for other slower returning establishments.

Although beyond the research goal of either study, this surprisingly fast-paced return may be a function of the level of insurance and the various payment schedules possible. One could infer from both research efforts that the more prestigious (and/or financially secure) the establishment the faster and larger the insurance payments would be. Therefore, analysis of the strength of the establishment as a function of insurance reimbursements could lead to another interesting path to pursue in future reconstruction studies.

The example of the location of Department Stores indicates how crucial is access to space appropriately

located and sized. The newer department stores, because they require so much space, could not acquire space in the Burnt District because of their large space demands. Even though department stores anchor downtown retail areas by the early twentieth century, the Burnt District cannot accommodate such large space users. In addition, Department Stores were the first retail segment to move, instead of rebuilding, into the periphery of the Burnt District. Department stores in Baltimore could not enter the Burnt District during the reconstruction process because of the speed with which the reconstruction process occurred and their dramatically increased need for space. Pre-fire owners reoccupied or sold their property at such a speed that new incoming entrepreneurs rarely had a chance to acquire space.

Future Research

Replication of this study in terms of the process of analysis would not be difficult as both primary data sets are readily available for cities of similar or even varying sizes. However, the conceptual basis for initiating the research rests on the opportunity of "regrowth" or "complete reconstruction" which a disaster of this magnitude presents. If there was no opportunity for comprehensive change within a city, the investigation of spatial changes would have to take place over a much longer time frame and the dynamics of change would be

much more subtle but possibly more comprehensible.

This study would have been strengthened by the examination, for example of political redistricting and zoning, to improve the understanding of locational and structural changes. Property deed analysis, although tremendously time-consuming, would have established whether the owners and functions of a property remained constant during the reconstruction process. This would have enabled the persistence and sequencing measurements to be much more precise. Additionally, information about establishments which had fire insurance versus those without and the schedule of insurance payments may have provided significant insight into regrowth as a result of the more ready availability of capital for insured owners and, possibly, this faster availability.

Research beyond the scope of this study is needed to focus on the adjacent areas of the Burnt District during the same time period. This would serve to provide a broader basis of spatial examination for this study of the Burnt District of Baltimore during the early decades of the twentieth century.

Bibliography

- Baltimore American*, February 14-16, 1904.
- Baltimore Sun*, February 9-17, 1904.
- Bowden, Martyn J. "Downtown Through Time: Delimitation, Expansion, and Internal Growth." Economic Geography 47(1971): 121-135.
- Bowden, Martyn J. The Dynamics of City Growth: An Historical Geography of the San Francisco Central District, 1850-1931. Unpublished Ph.D. dissertation. Berkeley, California: University of California Department of Geography, 1967.
- Bowden, Martyn J. "Geographical Changes in Cities Following Disaster." In Period and Place: Research Methods in Historical Geography, ed. Alan R.M. Baker and Mark Billinge, 114-126. Cambridge: Cambridge University Press, 1982.
- Bowden, Martyn J. "Growth of the Central Districts in Large Cities." In The New Urban History: Quantitative Explorations by American Histories, ed. Leo F. Schnore, 75-109. Princeton, New Jersey: Princeton University Press, 1975.
- Bourne, Larry S. ed. Internal Structure of the City. New York: Oxford University Press, 1982.
- Bruchey, Eleanor. "The Industrial Revolution in Maryland, 1860-1914." In Maryland: A History---1632-1974, ed. Richard Walsh and William L. Fox, 396-498. Baltimore: Maryland Historical Society, 1974.
- Dacy, Douglas C. and Howard Kunreuther. The Economics of Natural Disasters: Implications for Federal Policy. New York: The Free Press, 1969.
- Dickinson, Robert E. City and Region: A Geographical Interpretation. London: Routledge & Kegan Paul, 1964.
- Donnell, Robert Phippen. "Locational Response to Catastrophe: The Shoe and Leather Industry of Salem after the Conflagration of June 25, 1914." Essex Institute Historical Collections 113(1977): 105-116.

- Freidrichs, Jurgen and Allen C. Goodman et al. The Changing Downtown: A Comparative Study of Baltimore and Hamburg. New York: Walter de Gruyter, 1987.
- Glaab, Charles N. and A. Theodore Brown. A History of Urban America. 2nd ed. New York: Macmillan Publishing Co., Inc., 1976.
- Griffin, D. W. and R. E. Preston. "A Restatement of the Transition Zone Concept." Annals of the Association of American Geographers 56 (1966): 339-350.
- Groves, Paul A. Towards a Typology of Intrametropolitan Manufacturing Location: A Case Study of the San Francisco Bay Area. Hull, England: The University of Hull Publications, 1971.
- Haas, J. Eugene, Robert W. Kates, and Martyn J. Bowden. eds. Reconstruction Following Disaster. Cambridge, Massachusetts: The MIT Press, 1977.
- Haig, Robert M. Major Economic Factors in Metropolitan Growth and Arrangement. Vol. 1. Regional Survey, New York: Regional Plan of New York, 1927.
- Harbridge House, Inc. An Inquiry into the Long Term Economic Impact of Natural Disasters in the United States. Prepared for Office of Technical Assistance, Economic Development Administration, U.S. Department of Commerce. Boston: Harbridge House, Inc., 1972.
- Horwood, Edgar M. and Ronald R. Boyce. Studies of the Central Business District and Urban Freeway Development. Seattle: University of Washington Press, 1959.
- Hurd, Richard M. The Principles of City Land Values. New York: The Record and Guide, 1903.
- Jackson, Kenneth T. "Metropolitan Government Versus Suburban Autonomy." In Cities in American History, eds. Kenneth T. Jackson and Stanley K. Schultz, 442-462. New York: Alfred A. Knopf, 1972.
- Keister, Kim. "Charts of Change." Historic Preservation. 45 (May/June 1993): 42-92.
- Mencken, H.L. Newspaper Days: 1899-1906. New York: Alfred A. Knopf, 1975.

- Muller, Edward K. "Spatial Order before Industrialization: Baltimore's Central District, 1833-1860." In Working Papers from the Regional Economic History Research Center, eds. Glenn Porter and William H. Mulligan, Jr. 100-140. Wilmington, Delaware: Eleutherian Mills-Hagley Foundation, 1981.
- Murphy, Raymond E. and J. E. Vance, Jr. "A Comparative Study of Nine Central Business Districts." Economic Geography 30 (July 1954): 301-336.
- _____. "Delimiting the CBD." Economic Geography 30 (October 1954): 189-222.
- Murphy, Raymond E., J. E. Vance, Jr., and Bart J. Epstein. Central Business Districts Studies. Worcester, Mass.: Clark University, 1955.
- Murphy, Raymond E., J. E. Vance, Jr., and Bart J. Epstein. "Internal Structure of the CBD." Economic Geography 31 (1955): 21-46.
- Northrop, H. D. World's Greatest Calamities. Washington, D.C.: Library of Congress, 1904.
- Olson, Sherry H. Baltimore: The Building of an American City. Baltimore: Johns Hopkins University Press, 1980.
- _____. "Baltimore Imitates the Spider." Annals of the Association of American Geographers. 69(1979): 557-574.
- Palm, Risa. The Geography of American Cities. New York: Oxford University Press, 1981.
- Pred, Allan R. The Spatial Dynamics of U.S. Urban-Industrial Growth, 1800-1914: Interpretive and Theoretical Essays. Cambridge, Mass.: The M.I.T. Press, 1966.
- Rannells, John. The Core of the City. New York: Columbia University Press, 1956.
- Rea, Leonard Owens. The Financial History of Baltimore 1900-1926. Ph.D. Dissertation. Baltimore: The Johns Hopkins Press, 1929.
- Rosen, Christine Meisner. The Limits of Power: Great Fires and the Process of City Growth in America. New York: Cambridge University Press, 1986.

- Ross, Norman. The Great Baltimore Fire. Baltimore: A-WJZ-TV 13, Public Affairs Presentation, 1964.
- Sanborn Map Company. Insurance Maps of Baltimore, Maryland, (New York) circa 1901-02 and circa 1914-15.
- Sheriff, Benjamin R., Manager. Baltimore City Business Directory. Baltimore: R.L. Polk & Company, 1901-02 and 1914-15.
- Straub, Deborah A. and Diane L. Dupuis, eds. Cities of the United States. 1st Edition. Volume 1 and 2. Detroit: Gale Research Inc., 1988.
- Swann, Sherlock, Chairman. Semi-Annual Report of the Burnt District Commission. Created by Act of General Assembly, Approved March 11, 1904. Baltimore: William J.C. Dulany Co. City Printers, 1906.
- Ward, David. "The Industrial Revolution and the Emergence of Boston's Central Business District." Economic Geography 42 (1966): 152-171.
- Williams, Harold A. Baltimore Afire. Baltimore: Schneidereith & Sons, 1954.
- U.S. Department of Commerce. Bureau of the Census. Tiger / Line: Census Files. Washington, D.C.: Data User Services Division, 1991.

Works Cited in Secondary Source

- Bates, F. L., et al. The Social and Psychological Consequences of a Natural Disaster: A Longitudinal Study of Hurricane Audrey. National Academy of Sciences, National Research Council Disaster Study #18. Washington: National Academy of Sciences Printing Office, 1963.
- Drabek, Thomas E. and William H. Key. "The Impact of Disaster on Primary Group Linkages." Mass Emergencies 1(2): 89-105.
- Haas, J. Eugene and Robert S. Arye. The Western Sicily Earthquake Disaster of 1968. Washington, D.C.: National Academy of Engineering, 1970.

Mileti, Dennis S. Thomas E. Drabek and J. Eugene Haas. Human Systems in Extreme Environments: A Sociological Perspective. Monograph #21. Boulder, Colorado: University of Colorado Institute of Behavioral Science, 1975.

Rosenthal, John C. "Redevelopment After a National Disaster: A Planning Strategy for Recovery." M.A. thesis, University of Cincinnati, 1974.

Other Sources

Baker, George W. and Dwight W. Chapman, eds. Man and Society in Disaster. Forward by Carlyle F. Jacobsen. New York: Basic Books, Inc., 1962.

Baltimore Citizens' Relief Committee. Report Following Baltimore Fire of 1904. Prepared for Mayor Robert M. McLane. 1904.

Burton, Ian, Robert W. Kates, and Gilbert F. White. The Environment as Hazard. New York: Oxford University Press, 1978.

Chandler, Tertius and Gerald Fox. 3000 Years of Urban Growth. Foreward by Lewis Mumford. New York: Academic Press, 1974.

Christhilf, G. Edw. Photographic Views and Description of the Great Baltimore 175,000,000 Fire. Baltimore: E. B. Read & Son Co., 1904.

Crombie, Pauline Ann. "The Gentrification Process on Capital Hill: A Neighborhood in Transition." M.A. thesis, University of Maryland, 1990.

Drabek, Thomas E. Emergency Management: Strategies for Maintaining Organizational Integrity. New York: Springer-Verlag, 1990.

Drabek, Thomas E., Harriet L. Tamminga, Thomas S. Kilijanek, and Christopher R. Adams. Managing Multiorganizational Emergency Responses: Emergent Search and Rescue Networks in Natural Disaster and Remote Area Settings. Monograph #33. Boulder, Colorado: University of Colorado Institute of Behavioral Science, 1981.

- Office of Emergency Preparedness. Disaster Preparedness: Report to the Congress. Washington, D.C.: Executive Office of the President, January 1972.
- Fire Department. Reports of the City Officers and Departments to the City Council of Baltimore, 1904.
- The Editors of *Fortune*. The Environment: A National Mission for the Seventies. New York: Harper & Row, Publishers, 1970.
- Goodman, Allen C. Employment and Travel in Downtown Baltimore and its Subcenters. Working Paper Number 1. Hamburg: University of Hamburg - Johns Hopkins University, 1981.
- Healy, Richard J. Emergency and Disaster Planning. New York: John Wiley & Sons, Inc., 1969.
- Hershberg, Theodore. "Nineteenth-Century Baltimore: Historical and Geographical Perspectives: A Commentary." In Working Papers from the Regional Economic History Research Center, eds. Glenn Porter and William H. Mulligan, Jr. 141-155. Wilmington, Delaware: Eleutherian Mills-Hagley Foundation, 1981.
- Kates, Robert W. ed. Managing Technological Hazard: Research Needs and Opportunities. Monograph #25. Boulder, Colorado: University of Colorado Institute of Behavioral Sciences, 1977.
- Kates, Robert W., Christoph Hohenemser, and Jeanne X. Kaspersen, eds. Perilous Progress: Managing the Hazards of Technology. Boulder, Colorado: Westview Press, 1985.
- Lounsbury, John F. and Frank T. Aldrich. Introduction to Geographic Field Methods and Techniques. 2d ed. Columbus: Charles E. Merrill Publishing Company, 1986.
- The Maryland Historical Society. Baltimore... a Picture History 1858-1958. Commentary by Francis F. Beirne. New York: Hastings House, 1958.
- May, Peter J. Recovering From Catastrophes: Federal Disaster Relief Policy and Politics. Westport, Connecticut: Greenwood Press, 1985.

- May, Peter J. and Walter Williams. Disaster Policy Implementation: Managing Programs under Shared Governance. New York: Plenum Press, 1986.
- Mitchell, Robert B. and Chester Rapkin. Urban Traffic: A Function of Land Use. New York: Columbia University Press, 1953.
- Muller, Edward K. and Paul A. Groves. "The Emergence of Industrial Districts in Mid-Nineteenth Century Baltimore." The Geographical Review 69(1979): 159-178.
- Murphy, Raymond E. The American City: An Urban Geography. 2d ed. New York: McGraw-Hill Book Company, 1974.
- _____. The Central Business District. London: Longman Group Limited, 1971.
- Porter, Glenn and William H. Mulligan, Jr. eds. Working Papers from the Regional Economic History Research Center. Vol.4. Wilmington, Delaware: Eleutherian Mills-Hagley Foundation, 1981.
- Proudfoot, Malcolm J. "City Retail Structure." Economic Geography 13(1937): 425-428.
- Scargill, D.I. The Form of Cities. New York: St. Martin's Press, 1979.
- Schnore, Leo F. The New Urban History: Quantitative Explorations by American Historians. Foreward by Eric E. Lampard. Princeton, New Jersey: Princeton University Press, 1975.
- Vance, James, E. Jr. The Continuing City: Urban Morphology in Western Civilization. Baltimore: The Johns Hopkins University Press, 1990.
- Ward, David. Cities and Immigrants: A Geography of Change in Nineteenth-Century America. New York: Oxford University Press, 1971.
- White, Gilbert F. and J. Eugene Haas. Assessment of Research on Natural Hazards. Cambridge, Massachusetts: The MIT Press, 1975.
- White, Gilbert F. ed. Natural Hazards: Local, National, Global. New York: Oxford University Press, 1974.