RE-USING DOWNTOWN WATERFRONTS

by

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ABSTRACT

Re-Using Downtown Waterfronts
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Submitted to the Department of Urban Studies and Planning in partial fulfillment of the requirements for the degree of Master of City Planning.

Downtown waterfronts of large American cities have been abandoned in recent years by their traditional land uses—shipping, industry and warehousing. Since 1960 there have been efforts in many cities to recapture and re-use the old waterfront. This thesis tries to define the most appropriate ways of re-using the waterfront, in terms of land uses, design principles and implementation strategies.

The thesis begins by recognizing the importance of two sorts of edges in the city: the edge of the sea and the edge of history, and the places where these inter-act on old waterfronts. These edges enlarge and deepen the city-dweller's experience and expand his horizons. They are valuable resources in the city which should therefore be carefully controlled, preserved and made available to the public. I attempt to apply the values of time in the city—continuity, incremental growth, adaptive management and creative use of resources to planning for the waterfront.

Analysis of waterfronts in Boston, New York, New Orleans, San Francisco and Chicago suggest that there are two sorts of downtown waterfront districts—the pre-industrial waterfront which survives from the early 19th century and to which these values are very relevant, and the industrial waterfront with its large factories, rail yards and highways where major redevelopment is necessary.

The pre-industrial waterfront district should be preserved and restored as a special mixed-use area with shops, restaurants, water-edge activities, entertainment, some residences and remaining work uses. To achieve this kind of re-use, one must protect the environment from pressures for redevelopment, find an entrepreneur willing to start the restoration process, and devise organizational frameworks—such as a non-profit corporation—to manage risk throughout the district and over time.

The industrial waterfront district is suitable for office and residential re-development, tied to the downtown core. This development should focus on the water, provide public access to the water's edge, and create a physical and visual connection between the core and the waterfront. Public development corporations are a likely way of doing this.

Thesis Supervisor: Tunney Lee
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INTRODUCTION

This thesis is an attempt to apply a set of values concerned with time and change in the city to a particular kind of city district, the downtown waterfront. The values are outlined in the first chapter, "The City as Process" and are drawn in part from Kevin Lynch's book, What Time Is This Place? In essence, I argue that the city is a continually adapted fabric, and is in a constant process of change and growth. Typical American planning efforts and ideology ignore this. They attempt to start from scratch to create new environments. A more appropriate strategy, I believe, would be to focus on small-scale and incremental change, on maintenance and management, on the period of change, and on the sense of history and continuity of an area.

Having made these values explicit, I then turn to the American downtown waterfront. The cities discussed are Boston, New York, New Orleans, San Francisco, and to a lesser extent, Chicago and Philadelphia. These are all relatively old American cities that were founded on navigable waterways. Their waterfronts have had time to go through several distinct stages of development. They are large cities with sufficient population and development pressures to create an intense downtown and to make major investments in their waterfronts. The waterfront sections we are concerned with adjoin the downtown core and are on major waterways once used for shipping. Non-navigable streams such as the Paseo del Rio in San Antonio, secondary waterways such as the Charles River in Boston, outlying waterfronts and portions that are really exclusively local rather than metropolitan have all gone through a different history of development and present a different set of issues.

When one examines these downtown waterfronts in detail, one finds that they really consist of two general kinds of districts. Some districts have retained the buildings, wharves and traditions of the early 19th century, pre-industrial waterfront—a time when the economic and social
activities of the port city focused on the docks. The pre-industrial waterfront's parcels are small and in scattered ownership. Its generally small buildings can be renovated, and new tenants can draw on the historic associations of the old port. Examples include Schemerhorn Row and the old Washington Street Market in New York, the granite wharves on Atlantic Avenue in Boston, and the Vieux Carre in New Orleans. Other sections retain only the railroads, large warehouses and factories, larger berths and special loading facilities of the steam-powered, metal-hulled ships—the heritage of the late 19th and early 20th century. These industrial waterfronts often have large parcels owned by a few major organizations, offer little renovation potential, and require major site preparation costs for any kind of demolition and redevelopment. Examples include Fort Point Channel and South Boston, the Mississippi Riverfront in New Orleans, and West Midtown in Manhattan. These differences in ownership, image and structure make the two kinds of waterfront district suitable for different kinds of re-use. Each chapter therefore attempts to distinguish between industrial and pre-industrial waterfronts.

In Chapter Two, "The Image of the Waterfront", we suggest that waterfront development can take advantage of two distinct sets of images associated with the waterfront. Development in both pre-industrial and industrial districts can capitalize on the view of the water, an important psychological and cultural image. Development in the pre-industrial district can also capitalize on another, more special image—the history and romance of the old port.

After describing the history of the downtown waterfront in Chapter Three, we turn to more recent projects of the 1960's and 1970's which have attempted to recapture the waterfront. These projects have been of two main types. Both pre-industrial and industrial waterfronts (but especially the latter) have been wholly redeveloped in recent years as major office and/or luxury apartment complexes, such as the World Trade Center and Battery Park City in New York. These extensions of the downtown core take advantage of the low land acquisition or fill costs close to the high-density, high-value core. They also gain a premium from the view of
the water. Small-scale, historic sections, on the other hand, have been re-used as special, mixed-use amenity areas, serving downtown workers and visitors from the entire metropolitan area. Tenants include restaurants, specialty shops, and entertainment facilities. This pattern is exemplified at South Street Seaport in New York, Ghiradelli Square in San Francisco, and Lewis Wharf in Boston.

From this descriptive base, we turn to the question of policy for re-using downtown waterfronts. In Chapter Five, we suggest that the downtown waterfront is an asset in a strategy to re-vitalize the downtown core. It has been used in a variety of ways in recent years—for highways, parking garages, offices, apartments, and mixed-use areas—all of which planners have argued for as crucial steps in strengthening downtown. These facilities are all needed; they should not be provided at the expense of each other. The key question is how to develop the special resource of the waterfront to best meet these needs. The pre-industrial district, I would argue, should be preserved and renovated as a mixed-use area, adding liveliness and excitement to downtown. Industrial waterfronts on the other hand might best be used for offices, where they are in the path of downtown office development, or for housing.

Mixed-use development should follow a number of principles, outlined in Chapter Six. It should provide water-related activities on the shoreline, have a 'public' character by creating and preserving public spaces, activities and educative environments, re-use old buildings, but avoid creating an atmosphere of 'staged authenticity'.

There are also general design guidelines for both kinds of waterfront redevelopment: providing a focus on the water, connection from downtown to the waterfront district, public access to and along the edge, a non-uniform shoreline, and upland views of the water.

Chapters Six and Seven thus define the specific public objectives in waterfront re-development. Chapters Eight and Nine suggest the institutional frameworks and implementation strategies for meeting those
objectives. Again we distinguish between the entities and land use controls necessary to create major new development on the industrial waterfront, Chapter Eight, and to create mixed-use areas, Chapter Nine.

Finally, in Chapter Ten, I try to assess the relevance of my initial values to this particular planning problem. In what situations are they relevant? How can they be achieved? What other values are important? And, lastly, what sort of vision do I have for the waterfront of the future?

SOURCES

The initial values on which this study are based are derived from two works, Jane Jacobs' Death and Life of Great American Cities and Kevin Lynch's What Time Is This Place?, which I have joined in perhaps unholy matrimony.

My study of waterfronts began with a history of Boston's Atlantic Avenue waterfront from its beginnings in the early 1600's until its urban renewal in the 1960's. The Federal Writers Project's Boston Looks Seaward, William Bunting's Portrait of a Port, Walter Muir Whitehill's Topographical History of Boston, and David Ward's Cities and Immigrants are all valuable references for such a history.

I then prepared brief case studies of two waterfront highway proposals, the New Orleans Riverfront Expressway and the new West Side Highway in New York, to understand the issues posed by waterfront highways and large-scale redevelopment in general.

A variety of waterfront plans in major American cities were analyzed, including the Boston Redevelopment Authority's Faneuil Hall-Waterfront Renewal Plan; Wallace, McHarg and Todd's Lower Manhattan Plan; the Bureau of Governmental Research's Plan and Program for the Preservation of the Vieux Carre; Johnson, Johnson and Roy's Progress Report on the Future of Chicago's Lakefront; and Bolles Associates' Northern Waterfront Plan for San Francisco. More general works include
Peter Raven-Hansen of Abt Associates' *Water and the Cities*; the State of Wisconsin's *Waterfront Renewal*; and Roy Mann's *Rivers in the City*. These plans suggested some of the history of waterfront districts, the planning issues involved and the design guidelines and prototype solutions which might be applied.

After studying these plans, I recognized the distinction between pre-industrial and industrial waterfronts, and attempted to think out the relevant guidelines and implementation strategies for each. I found no single good work on planning for historic districts, although Romin Koebel's unpublished M.I.T. PhD. Thesis on *Incentive Zoning in New York City* suggested some of the development pressures that one must beware.

I would like to thank Claudia Skylar Gressel for the illustrations and diagrams scattered throughout this thesis, and Tunney Lee, Kevin Lynch, Gary Hack and Ed Wood of the Department of Urban Studies and Planning of M.I.T. for their advice, criticism and patience. Arthur Krim of the Cambridge Historical Commission helped me restructure the thesis, while fellow students Matthew Thall and David Gressel helped shaped my understanding of implementation strategies. Christopher Glaister of the West Side Highway Project was most helpful in explaining the ins and outs of that planning effort.

And finally I would like to acknowledge my debt to Herman Melville for the opening chapter of *Moby Dick*, which inspired me to think about urban waterfronts in the first place.
1. THE CITY AS PROCESS

Western languages distinguish nouns from verbs. By separating subject from action, they suggest that entities such as the individual, the society and the city are fixed, static solid objects. Modern physics has challenged this view. It has shown that matter and energy are forms of each other and that the solid rock, symbol of stability, is really a recurring pattern of millions of actions and motions. Not only is everything in a process of constant change, everything consists of change. No subject exists in itself, independent of the action in which it partakes.

From this perspective we see that the world is a process of constant evolution and growth. The forms of life that we perceive are temporary shelters for the force of life. Patterns emerge and change. A fabric of inter-relationships—the human body, the city, a culture—comes into being and consists of a constant process of change.

What are the features of these patterns, structures, and fabrics? They emerge in response to over-riding forces and needs. They either adapt or fail to adapt to the changes in the world around them. Brittle structures, whether dinosaurs or dynasties, eventually snap whereas flexible structures evolve and grow. Growth means adding on to earlier roots rather than starting from scratch. As a result, at a given moment, these patterns are an interpenetration of early and late, past and present. The structure reflects its whole development as the vestigial organs of the human body reveal the process and circumstances by which the human body evolved.

The individual provides an example of this process. In terms of learning, educator John Holt argues that

we can only grow from where we are, and when we know where we are, and when we feel that we are in a safe place, on solid ground.1
The only way we can learn, he goes on, is when we are aware of the "continuum of experience", that

life and human experience, past, present and future are one whole, every part connected to and dependent on every other part. 2

The interaction of past, present and future is most obvious in our memory. The memory is the basis of self-identity. Kevin Lynch suggests that what we call 'the self' is actually a way of organizing temporal events. 3 These events are organized in a series of layers which interpenetrate, as we selectively distort the past in the light of present experience, and move back and forth with the aid of emotional and cognitive associations.

The culture of a civilization is also an interpenetration of new and old, enriched and deepened by its heritage and roots. In his bizarre movie, "The Milky Way", the Spanish film-maker Luis Bunuel chronicles the twentieth century pilgrimage of two hitchhikers to a holy Spanish shrine. In each place along the way they find themselves in a different era: that of the Crusades, the Albigensian heresy, the Roman domination of Spain or the Counter-Reformation. The solid floor of the present is dissolved and the characters move vertically through the layers of time. All these periods have left traces in language, culture, environment, modern knowledge of history. These traces accumulate in the society and in the mind of the individual. Bunuel simply makes these traces visible.

From these examples of the individual and the culture, we can begin to see that the city itself is an adaptive structure. We usually conceive of the city as a set of relatively fixed objects at a given moment, the present (with a sense, perhaps, of the very short-term past and the very short-term future). When documenting the
development of Boston harbor from 1630 to 1970, I mentioned to fellow planners that I was studying the history of the Boston waterfront. Invariably, these representatives of a profession supposed to be concerned with the long as well as the short range, would inquire: "You mean since 1960?" Despite this typical perception, the city is really a long trajectory from past centuries and even millenia to future centuries and millenia. We see and live in it as a tiny moment in its long history.

Throughout its history, the city is in a constant process of growth and change, decay and evolution. The traces of the past remain while we add on to earlier roots. The most notable traces and roots, perhaps, are the street layout, the infra-structure, and the institutions. In his book, What Time Is This Place?, Kevin Lynch notes that after the Great Fire of London in 1666, the government devised schemes for new canals. Lot lines, building lines and streets were oriented to these canals. While the projects were never finally implemented, or else failed very quickly, the layout remained. When we lay out streets and lot lines we usually lay out patterns which persist long after the current owner, building or even activity has passed away. The water's edge in a city which later has landfill may continue to mark a break in the city.

The process of constant change occurs at the neighborhood level. There is no fixed, static neighborhood, but a process of investment and dis-investment, in-migration and out-migration, rising and falling desirability and property values, shifting ethnic groups all making use of the structures inherited from the past and all reshaping them to their own needs. The process in each neighborhood is related directly and indirectly to the process occurring in every other. The speed or lack of speed of the process is both critical and highly visible.
The physical aspects of the city and its processes of change are manifestations of the city as a set of relationships. The economist perceives these relationships as linkages and external economies. A new firm opening in the city benefits from the infra-structure that has been established for thousands of previous firms and residents. It benefits from the economies of agglomeration. Retail stores in clusters do better as a result of physical proximity to each other. The availability of suppliers, buyers, markets, specialized labor, and information aids the firm. It draws strength from this web and in turn reinforces it. The environmental designer may perceive the fabric in terms of townscape: the relationship of buildings and spaces to one another. A distinctive feature is the accumulation of the achievements of many epochs, in close juxtaposition to each other. The sociologist may perceive the fabric in terms of social ties and networks. The individual can choose among a wide variety of people and organizations, within his neighborhood and throughout the entire city. The political scientist may especially note the web of interest groups and organizations, the overlaps and the contacts within and without the political parties. The strength of a neighborhood, its ability to cope with threats and change generally corresponds to the strength and inter-connections of its organizations.

In all these ways, the city is precisely more than the sum of its parts. The concentration of money, people and resources creates something beyond those elements. That sum, that something beyond is what we mean by the city.

The element of time is critical. These relationships take time to form, connect, and deepen. The constant revitalization of areas is as necessary as their continuity. The mixture of old and new is important visually in the townscape, economically in old and new
buildings and enterprises, and socially in the emergence of new networks. Lynch notes that old towns which have grown slowly have advantages over wholly new settlements. They are richer, more complex, offer more choices, and provide deeper attachments.\(^6\)

Thus, cities like other forms of being are processes of growth, with ancient roots and long trajectories, in a constant state of evolution and development. Whether dealing with ourselves as individuals or with the city as a vast collective set of relationships, we are caught up in this process. Whether we like it or not, we operate in its context. But while this context and these factors will influence the results of our activities, turning them to much account or to naught over the course of time, we are of course free to try to operate as we see fit. On the city scale, one of the most common ways of dealing with this situation is to simply ignore. Putting it more positively, we prefer to wipe the slate clean and to start fresh. This is popular in modern societies and especially in America.

**STARTING FRESH**

We can try to start fresh on many levels. The individual turns over a new leaf, society engages in revolution, the city builds public housing projects, engages in urban renewal and establishes new communities. Starting fresh involves a certain set of assumptions and view of the world. The present is not only irrelevant and an obstacle (i.e., 'blighted') to the desired future, it is also somehow static and unchanging.
Transition is then seen as deliberate change over a very short period. It is a discreet jump to the future, which is conceived of as a fixed, permanent end-state. In short, we make a discreet jump from one fixed state to a new and better one. The period of transition and the quality of life in the midst of transition is disregarded.

Starting fresh appeals to us for many reasons. It corresponds to our idealistic and utopian natures. No matter how much of a compromise an urban renewal project may be, there is always the thin air of utopia about it. Through deliberate change, all at once, we can create something perfect and fixed. The key feature of all utopias has been the absence of subsequent significant change. This is why it is so hard for us to imagine ourselves living in heaven or Plato's Republic or More's Utopia or even Garden City.

It seems the simplest and easiest way of escaping from the past. To Jacob Riis and other early 20th century reformers, it was imperative to tear down a tenement block, breeding ground of physical and social diseases, first, and worry later about new housing for the former tenants. For wherever they would go, it was assumed, they would be better off.

Starting fresh seems the simplest way of achieving change. It cuts through the accumulations of the past: physical, social and institutional. It enables us to change many elements at once. The Fort Lincoln new-town-in-town in Washington D.C. was originally conceived as a simple new community but then became a vehicle for
a vast array of innovations: in integration, housing technology, labor force, site planning, and transportation technology.7 Starting fresh has a directness, immediacy and obvious rationality. Psychologically, it is hard to both think of a solution and recognize its transience and future problems.

Another reason for starting fresh is that a critical mass may be necessary to achieve change. Unbalanced growth, something wholly new and large-scale in an area may be necessary to change people's attitudes and conceptions and overcome the inertia of the past.

Starting fresh is rooted in the American economic, technological and political system.

The American private market economy encourages starting fresh. The individual actor in a market economy can ignore the external costs and benefits of his actions. He need not be concerned about the waste or under-utilization of society's resources, unless he is forced to internalize these costs. A ten-year old apartment building on Park Avenue may be torn down to be replaced by a new office building, in order to maximize the developer's present value despite the waste of viable housing. In America, tax depreciation periods are based on an estimated useful life of 25 to 40 years, with accelerated depreciation for certain desirable types of development, whereas depreciation periods in Germany, for example, are 100 years long.8 Short useful life means discounting the value of existing structures. In addition, our economic system is oriented toward growth per se, and this is supported by the government. Thus national housing policies, ever since the Depression, have been designed not only to providing improved housing (which might have been done by maintenance subsidies for existing stock) but especially to create
jobs in new construction. 9

Industrial technology has been oriented toward mass production not toward repairs of existing products. While new production has become increasingly capital-intensive, with increasing labor productivity, economies of scale and decreasing unit costs, repairs and maintenance have remained relatively labor-intensive and therefore relatively expensive. 10 Even within the comparatively non-industrialized construction industry, repairs and rehabilitation are disproportionately more expensive than new construction. This is a self-perpetuating trend. Large corporations engaged in new production can afford to spend vast sums on experimenting and introducing new products, while there is little money available for improving repair systems.

Starting fresh is rooted in our political system. Political leaders want their policies to have visible results—specific achievements they can point too, something built, some new program. Good maintenance and management have low visibility and political appeal, and may only bear fruit in the long-term future with which the politician is not concerned. Maintenance and management are therefore neglected for the sake of starting fresh. At an extreme, the Spanish National Railways gave as bonuses to their engineers, a percentage of all the construction funds on projects that they helped design. The result was a vast proliferation of rail links and electrification, most of which was under-utilized. The budget for operations and maintenance was kept low and Spain eventually wound up with the most over-built and poorly-run train system in Europe. 11

In America, Federal grant and loan programs have provided billions of dollars to States and localities for new housing, sewers, roads, tran-
sit cars and systems, and parks, but very little for maintenance. Until recently, sponsors of subsidized housing were encouraged to under-estimate future maintenance expenses in order to provide sufficient funds for construction itself. In the early days of the Boston Redevelopment Authority, maintenance services were shifted to renewal areas, so as to meet the local matching requirements of Federal grants.

Government is also inherently oriented against constant evaluation and useful feedback into its programs. Evaluation can mean embarrassment to politicians and risk-averse bureaucrats. Few are willing to admit failure so that to solve a particular problem, new programs will proliferate over the years instead of being refined and modified. Donald Schon in his book Beyond The Stable State notes that the real function of experimental programs is not to measure the effectiveness of a new approach, but to build a constituency for its widespread adoption. And since public and private institutions do not learn from gradual feedback and do not continually adapt, it often takes a major crisis to alter them or to set up a new institution. The new institution is then routinized and responds with gradually diminishing energy, innovation and imagination. Those who observe this phenomena will often see starting fresh--with a wholly new agency or division--as the only way to at least temporarily counter-act this inertial tendency.

Finally, starting fresh has a special appeal for Americans. America was the new land where we all started fresh, from the Pilgrims to the most recent immigrants. The image of endless resources and the frontier enabled our ancestors to pack up and move on. Frederick Jackson Turner saw the frontier as the critical element in American history. This experience and the lack of a feudal or other fixed
tradition has encouraged the reality or the promise of unlimited mobility, of a future which we can shape as we wish. The eventual result is a belief in instant change: of the individual (via psychology, drugs, involvement) of the city via new housing, and of the society. In this atmosphere of impatience, we rally round a new cause but, within a few years, abandon it and rush off to a still newer cause when we learn that it involves long-term effort and major costs and sacrifices.

COSTS OF STARTING FRESH

But by ignoring the context in which it is used, the approach of starting fresh is bound to have certain costs. These costs arise because starting fresh ignores the importance of time in the city: the economic, social and psychological value of continuity and growth.

A project whose design essentially ignores what will happen after it is completed, is likely to be unresponsive to future situations and is also likely to be beset by the processes of the past. The possibility of starting a society fresh on an isolated isle was explored on Pitcairn Island:

The mutineers of the H.M.S. Bounty, along with their newly acquired Tahitian brides and several other Tahitians eventually escaped from the British Navy by landing on Pitcairn Island. The island seemed like paradise with sufficient land, plenty of water, fruit growing on trees and a mild climate. They thought they could start life anew in this setting. But racial antagonisms flared. Old habits of adultery and jealousy re-emerged. Several of the men discovered a plant the juice of which would ferment; they became drunks. Violence resulted and peace returned only when there was but one man left, with 12 women and 20-odd children. Simply by creating new settings, we may still allow the processes of the past to continue to work, with the same kind of results. The
early liberal supporters of public housing felt that by eliminating a physical slum and replacing it with new, standard apartments, they would eliminate the social problems of the residents. The experience of public housing suggests that very often, not only were the new projects overwhelmed by the carryover from the past, but that—as at Pruitt-Igoe in St. Louis—the new design actually exacerbated the problems. Even the housing rehabilitation programs imply a quick transition from one fixed state—deterioration—to a new and better one—renovation. But the same processes which brought the old housing to its current state are likely to continue to operate on the rehabilitated housing in the future.

Second, starting fresh is likely to disrupt the slow-forming relationships which really compose the city. Economic linkages, political networks, social ties all take time to mature. Wiping the slate clean means destroying this close-grained, slowly-developing fabric of urban relationships. In renewal areas, this meant wiping out many small businesses which could not relocate easily to a new area because of their marginality, their proprietors' age, and/or the lack of special knowledge, contacts and customers which allowed them to survive in the old area. It also meant social and emotional hardships for the people dislocated—even when they found comparably-priced decent housing elsewhere. In a classic study, Marc Fried traced the "grieving behavior" exhibited by those displaced from Boston's West End. These are the costs of friction and resistance, the extent to which people and organizations formed in the past cannot instantly adjust to a new set of circumstances. In addition, the static environment created by large-scale deliberate change from above tends to discourage subsequent incremental change from below and therefore deters the new formation
of rich linkages and relationships.

This is especially true in some of the physical environments frequently created by starting fresh: huge high-rise buildings, separation of uses, provision of commercial space on a monopoly basis. The single-age of buildings in the new environment means that they are of similar construction, with similar overhead costs. As a result, the only residents and enterprises in the new area must either be able to pay very high rents (and therefore be well-established) or be heavily subsidized by the government. The physical and institutional environment thus discourages subsequent change. In addition, as Jane Jacobs argues in her book The Death and Life of Great American Cities, the withholding of gradual money for reinvestment in an area, often followed by a cataclysmic flood of money, has the same effect of destroying the fabric, preventing it from adapting, and then changing it all at once, and all in the same way. The success of both small and large organizations depend on an environment open to small-scale initiative and incremental change. In downtown Boston renewal planning, the major department stores came to recognize the value to them of the small specialty shops in old buildings in the surrounding area; the diversity strengthened the cumulative attraction of the shopping area.

Starting fresh ignores the psychological relationships in the city which depend on time to develop, especially the need for continuity. The lack of continuity in the environment has emotional costs:
The conservative attitude of the great mass of the population vis-a-vis new architectural forms poses a perennial problem for the town-planners. Its explanation is simple: the houses and the towns in which people grow up constitute the most intimate sphere of their lives. Consequently, powerful psychological resistances have to be removed before they can grow accustomed to radical change or renewal in this sphere.

Lynch notes the experience of a woman from Lidice, the village in Czechoslovakia whose male inhabitants were all killed by the Nazis. She had seen her husband and sons killed in front of her own eyes. But no experience was more upsetting to her than to climb up the hill to the village after the War was over, and find that there was nothing there. The need for some continuity, some outward reminder of our internal memories, is especially strong in an era of rapid change. The rapid change in today's society is sketched out in Alvin Toffler's *Future Shock*. Toffler describes the increasing transience of our relationships with things, people and places. But perhaps nothing is more graphic than the story of his 8-year-old daughter, sent out to the supermarket around the corner in midtown Manhattan. Unable to find the store, she returns, saying that it must have been torn down. It is hard to conceive of a child in any other society, in any other century even imagining such an explanation. As change accelerates in the future, as we are cut further and further adrift from the religions and traditions of the past, and even from the morals and occupations of our own parents, the need for maintenance of some continuities becomes stronger than ever. It becomes more essential that areas change incrementally, rather than all at once in order to avoid what Lynch describes as

"*jamais vu*": we see nothing we have ever seen before. There are no connections. The present is perilously small.
When nothing is the same, we hardly know how to behave, what is expected, how to operate in the environment, how to attach ourselves to the things around us.

Moreover, as we have noted, incremental change allows for small-scale initiative and participation. The experience and confidence that we can make a mark on the environment is a stabilizing element in itself.

Continuity can be important for the individual, his memory and his sense of personal connections. Each building in a city is special to someone. A single old school building evokes a hundred memories, embarrassments and passions to each of the thousands who have spent 4 or 8 years there. The rapid destruction of objects is unsettling. Lynch suggests providing local continuities by preserving elements at least 1 or 2 generations deep in all our living space. Continuity can be important for group memories as well. Buildings become symbols of causes, events, ethnic groups, national struggles. They are the emblems of our traditions. In general, the physical environment is a reminder of a past experience. And the psychological power of the physical environment is the sense it conveys of reality, and continuity. Relationships and experiences pass away, but to most generations, the buildings are weighty and stable, like the natural environment. The built environment must serve this function for those who live in cities.

And the transition itself is not instantaneous but takes—in the case of the physical environment—a number of years. People must live for 5 or 10 years surrounded by vacant lots, construction sites, half-built highways, housing developments, and universities. As Lynch suggests, we need a feeling of living in today, rather than tomorrow.
Thus starting fresh usually involves an inefficient use of resources. In recent years we have become increasingly conscious of this cost as a real opportunity cost, especially in the environmental field. By concentrating on new housing and ignoring the maintenance of old, we have wasted the largest portion of our housing stock. In general, starting fresh ignores (and often destroys) the unique buildings, institutions, traditions which have come down from the past. On the waterfront, it means ignoring the historic image and structures of earlier ages which may—by the nostalgic veneer of time—appeal to people today.

**ADAPTIVE MANAGEMENT**

Instead of starting fresh, government can recognize the city as a number of growth processes which it attempts to manage. Adaptive management would concentrate on processes in the city rather than on artifacts or end-products. It would focus, for example, on trends in housing investment and disinvestment, and the key factors behind these trends rather than simply putting more units on the market.

Adaptive management would try to strengthen the fabric of the city. Government investments in services, infrastructure, new facilities, and public regulations such as zoning would be used on an area-by-area basis to strengthen the economic, spatial, social and political linkages. As in Holt's paradigm of learning, we should begin from where we are. Thus policies for ghetto development or merely maintenance of local playgrounds might best operate by beginning with the key stable institutions in run-down areas—frequently churches. Building from strength means beginning a plan with the
positive assets of an area, rather than the weak points and soft spots.

Adaptive management thus means creative use of resources, especially the resources of the past. "Historic preservation" is something of a misnomer, since the present must find a current use for any old structure and since we choose the past by our actions in the present. The creative use of the past is a more accurate description. One way to use resources most productively is to emphasize maintenance, both public and private. Eric Hoffer observes from his studies of nations after World War II that the best indicator of a society's ability to bounce back from crises is the value placed on maintenance. In America we have undervalued maintenance in many ways.

The public would also be responsible for major adjustments in the city fabric—adaptations necessary to overcome inertia and obsolescence. In making these adjustments, the public should be concerned about their future adaptability and about the costs of transition. Public policy would be as concerned with how change takes place, and the period of major change, as with the period thereafter. Disruption would be minimized. Temporary resources would be used creatively. Lynch suggests that major change should be "legible and fairly rapid, concentrated in time-space in increments, each making a noticeable difference." For governments to play this role, they must be open to feedback and they must be organized to plan for and serve specific geographic divisions of the city. If as Lynch suggests, in our era of rapid change, strategies should be "endless series of successive approximations to objectives which themselves continue to change."
Open-ended, adjustable strategies require rapid and continuous feedback. They also require institutions which can learn and change continuously, not just in crises.

Government planning and activities should not be focused on functional divisions but on geographic areas of the city. A geographic focus would promote greater knowledge, responsibility, responsiveness, and feedback. By being responsible for the process of change in a given area, an agency is more likely to encourage private re-investment and to understand the barriers to re-investment. The New York City Office of Midtown Planning has been a paradigm of this approach. Each district of the city has its own history, assets and problems.

This thesis is about one such special district--the downtown waterfront--and the appropriate ways to think about and plan for such a unique part of the city.
2. THE IMAGE OF THE WATERFRONT

The image of the downtown waterfront has changed over time. In the pre-industrial era, the waterfront was the front door of the city. It was the commercial center. All the major activities and enterprises of the community revolved around it. It was both a working area and a public space. Visitors first arrived there, people met, goods and activities were on display and the latest news and gossip could be heard. Residents came down to the waterfront to look at all the hubbub, as a contemporary writer described the San Francisco waterfront in 1849:

There is probably not a more exciting and bustling scene of business activity in any part of the world, than can be witnessed on almost any day, Sunday excepted, at Broadway Street Wharf, San Francisco, at a few minutes before 4 o'clock PM. Men and women are hurrying to and fro; drays, carriages, express wagons and horsemen dash past. ... Clarks Point is to San Francisco what Whitehall is to New York.\(^1\)

The piers and the ships from distant ports attracted people. In the opening chapter of Moby Dick, Herman Melville celebrates the Manhattan waterfront of 1851:

Posted like silent sentinels all around the town, stand thousands upon thousands of mortal men fixed in ocean reveries. Some leaning against the spiles; some seated upon the pierheads; some looking over the bulwarks of ships from China; some high aloft in the rigging, as if striving to get a still better seaward peep. \(^2\)

The piers and dock areas of the pre-industrial waterfront allowed public access, were on a small scale, were highly visible, and exposed strange cargoes and freight operations to the public eye.

The waterfront was a place of recreation. Residents of colonial and early 19th century American port towns saw no need for specialized
Figure 2-1: The Pre-Industrial Waterfront. This view of New York is typical of the images of early American port cities: the city seen from the water. Source: Kouwenhoven, Columbia Historical Portrait of New York.
Figure 2-2: The marginal street on the pre-industrial waterfront. This is South Street, from Kouwenhoven's Columbia Historical Portrait of New York.
recreation areas such as parks. The countryside was within walking or ferryboat distance, for pastoral pleasures and active sports. More urban pleasures--meeting friends, having an ale, seeing the ships, getting some fresh air--could be enjoyed by the docks. Thus,

It was to the waterfront that the bourgeoisie strolled, to catch the cool breezes of the bay, and mingle with the harbor folk.3

The result was that the pre-industrial waterfront was the center and symbol par excellence of the port city. Engravings and sketches from the 18th and 19th century typically show the city from the water.4 They focus on the docks, the sailing ships, the activity on the marginal street, as befitted settlements which were really outposts of Europe (or of earlier development on the East Coast) and that were tied to it by their ships.

In the industrial era, downtown--the public heart of the city--turned away from the waterfront. The city grew outward, away from the water. Bankers and tradesmen turned to serve the local population and the expanding hinterland. The waterfront was in part neglected and in part industrialized. Railroads and other barriers cut it off from downtown. The symbols of the industrial age--the railroads, large iron sheds, great cranes, smokestacks, factories, grain elevators and other contraptions seen at the time as "demonic machines"--took over the water's edge.5 The nature of shipping changed as well. The old tall-masted sailing ships slowly gave way to smoky, noisy steamships, large, metal and as industrial as the rest of the growing city. The shift to steam meant

fewer crewmen, pilots, tug men, stevedores, chandlers, agents, boardinghouse masters and barkeepers per ton of shipping.6
LEFT: “A Scene at the Atlantic Docks, Brooklyn,” drawn by Reynolds and engraved by Richardson, was published in Appleton’s Journal, April 1, 1871.

Figure 2-3: An early image of the industrial waterfront. As Kouwenhoven puts it in his Columbia Historical Portrait of New York, these images were based in a fascination that was a "curious mixture of free and dread. ... The text describes the scene as 'beautiful, for ships and cargoes can never be otherwise' but goes on to emphasize the 'diabolical' quality of the vast machines, their 'metallic grind' and ceaseless jarring in 'a great struggle, a battle, a fight, rather with a nightmare than with an enemy in the open field.'
Figure 2-4: By the middle of the 20th century, the industrial waterfront had lost that fascination, and was indeed a closed-off, fenced-off part of the city. Source: Livingston and Blayney, What To Do About the Waterfront?
There was a change in the cargoes as well, as more industrial products were now being shipped. The greater punctuality of steam meant that fewer people were waiting around for departures whose timing depended on the tide, the wind, a full cargo and a full crew.

The waterfront thus changed from a colorful, public, mixed-use area to a relatively drab, large-scale, private single-use section replete with smoke and noise. The port areas were usually closed off to the public, were hidden by fences and large sheds, and were often quite distant from the center of the city. The waterfront still had a nautical and gutsy image, and harbor activities were still exciting, but it had really become a purely functional area of the city. It performed the back-stage operations: transportation, storage, distribution, processing. In the industrial era, the downtown waterfront seems to have disappeared from the public image. Few people who didn't work there went down to the docks. Sketches and photos of the time ignore the waterfront, while they focus on the new symbol of the city, the skyscraper.

The redevelopment of the waterfront in recent years is therefore an attempt to re-create the waterfront once again as the front yard of the city. It is an attempt to make it a public place, the city-on-display, a prime symbol of the city. The 700-foot high Gateway Arch erected on the Mississippi riverfront at St. Louis symbolizes all these efforts at turning back-stage into front-stage.

There are various images that redevelopers can draw on: the attraction of the water itself and the historic associations of the waterfront district. The high-rise extensions of downtown draw exclusively on the image and view of water per se, while the maritime special mixed-use developments draw on both sets of images.
THE ATTRACTION OF WATER

Each body of water will have its own particular attractions, depending on whether the surrounding environment is peaceful or noisy, whether one can see the horizon, the turbulence and flow of the water, how close one can get to the water's edge, and the extent of pollution. But there are also a whole set of general cultural and psychological images that are associated with water and that draw people to it. In Moby Dick, Melville evokes the lure and appeal of the sea and describes its effect on city-dwellers:

There now is your insular city of the Manhattoes, belted round by wharves as Indian isles by coral reefs. ... Its extreme down-town is the battery, where that noble mole is washed by waves, and cooled by breezes, which a few hours previous were out of sight of land. Look at the crowds of water-gazers there. ... Circumambulate the city of a dreamy Sabbath afternoon ... What do you see? ... thousands of mortal men fixed in ocean reveries. ... But these are all landsmen; of week days pent up in lath and plaster--tied to counters, nailed to benches, clinches to desks. How then is this? ... What do they here? But look! here come more crowds pacing straight for the water and seemingly bound for a dive.7

At the most superficial level, water in the city provides open space relief. The tight urban fabric is cut, and --if the waterway is broad--a whole panorama may be exposed. This open space relief makes a thin waterfront park part of something much larger ... (creating) a psychological illusion of expansive size.8

People are attracted by a grand vista or prospect, and by the contrast of nature with the surrounding environment. In his Master Plan for Chicago in 1909, Daniel Burnham proposed a lakefront park system. The lake, he said, offered Chicagoans
their one great unobstructed view, stretching away to the horizon, where water and clouds seem to meet.... These views of a broad expanse are helpful alike to mind and body. They beget calm thoughts and feelings and afford escape from the petty things of life.9

The waterway helps provide legibility in the city. In his book *Image of The City*, Kevin Lynch observes that image-ability or legibility of the environment enables people to find their way in it and to organize its facts and possibilities. City edges which are well-defined, visually prominent, impenetrable to cross movement, continuous in form, demarcate a sharp transition and offer a wide visual sweep, become important city-definers and orientation devices.10 The rivers and bay around Manhattan, the Bay at San Francisco, the Lake at Chicago, the Seine in Paris, all determine people's orientation to the entire city.

In many situations, water evokes raw nature—wild and untamed. The waves pounding on the shore, the spray, the swift current, the rising tide, the waterfall, the rapids, the storm and the flood are all images of water as power and destruction. Even in its more peaceful moments, water still evokes this potential threat and danger. It is an inhuman and unstructured element in the human and structured city.

Water is manipulable. We can swim or float in it, or at least stir it with our feet. It is fluid and open, in contrast to the solid land.

Water is constantly moving and changing. Philosophers have used the river as the symbol of life and time: one cannot put one's foot in the same river twice, because it is now a different river. The flow of water, the heartbeat-like rise and fall of waves provide images of life. The simple change of patterns and reflections is appealing, as Burnham described:
Mere breadth of view is not all. The Lake is living water, ever in motion, and ever changing in color and in the form of its waves. Across its surface comes the broad pathway of light made by the rising sun; it mirrors the ever-changing forms of the clouds, and it is illumined by the glow of the evening sky. ... In its every aspect it is a living thing, delighting man's eye and refreshing his spirit.

Water provides an important image of the subconscious—of home, of birth and of death. Water is where we came from—via evolution and via the womb. And so, subconsciously, we feel like orphans cast ashore on the land, cast alone into consciousness. Water therefore draws us to an eternity and infinity beneath and before consciousness, where we can submerge ourselves and finally be at rest. Five hundred people have committed suicide by jumping from the Golden Gate Bridge, attracted, I would suspect, not only by the great height but also by the water below. James Baldwin describes water as a grave:

He stood at the center of the bridge and it was freezing cold. ... He knew the pain would never stop. He could never go down again. He dropped his head as though someone had struck him and looked down at the water. It was cold and the water would be cold. He was black and the water was black. He lifted himself by his hands on the rail, lifted himself as high as he could, and leaned far out. The wind tore at him, at his head and shoulders, while something in him screamed, Why? Why? He thought of Eric. His straining arms threatened to break. I can't make it this way. He thought of Ida. He whispered, I'm sorry Leona, and then the wind took him, he felt himself going over, head down, the wind, the stars, the lights, the water all rolled together, all right. He felt a shoe fly off behind him, there was nothing around him, only the wind, all right, you motherfucking Godalmighty bastard, I'm coming to you.
In the folk superstitions of many cultures, the ebb and flow of the ocean represents birth and death. The ritual of baptism is rebirth in water. Water thus acts as a door to the unconscious. Its hidden sources and destinations, its immensity and continuity, its mysterious depths impenetrable to light, and its surface reflection of that which surrounds it, inspires us to stare and transforms our staring into daydream and meditation. In the words of Gaston Bachelard,

It transports the dreamer outside the immediate world to a world that bears the mark of infinity. Its immensity is in ourselves. It is attached to a sort of expansion of being that life curbs and caution arrests, but which starts again when we are alone. It is the movement of motionless man.

In the midst of the city, water offers a refuge where man can dream and face himself. The water becomes a mirror for his thoughts, as Melville notes:

And still deeper the meaning of that story of Narcissus, who because he could not grasp the tormenting mild image he saw in the fountain, plunged into it and was drowned. But that same image, we ourselves see in all rivers and oceans. It is the image of the ungraspable phantom of life; and this is the key to it all.

Above all, water is the unknown, the unmarked, the unfathomable. It is unstructured, open, without moorings, without the securities and fixtures of tradition, routine, daily life, without all the certainties of land, the safety, comfort, hearthstone, supper, warm blankets, friends, all that's kind to our mortalities.

The sea beckons, offering freedom, opportunity, independence. This call is both exhilarating and terrifying. Melville sums it up in what I think is the finest passage in *Moby Dick*:
Glimpses do ye seem to see of that mortally intolerable truth: that all deep, earnest thinking is but the intrepid effort of the soul to keep the open independence of her sea; while the wildest winds of heaven and earth conspire to cast her on the treacherous, slavish shore? But as in landlessness alone resides the highest truth, shoreless, indefinite as God—so, better is it to perish in that howling infinite, than be ingloriously dashed upon the lee, even if that were safety.

All these psychological properties of water take on added significance within the city itself. City waterfronts are not only accessible to urban dwellers. They are also enhanced by the juxtaposition of nature to man, openness to density, eternity to the urban pace, dreams to reality. The world to us is a set of contrasts—of age, status, size, color. The city appeals to us because we are also aware of the countryside, and vice versa. When diverse elements are juxtaposed, they each seem more intense, like the hard edge of Italian hill towns where the cramped urban development confronts the pastoral countryside. And so, a waterfront means something different, something perhaps more special on the West Side of Manhattan, on the edge of San Francisco, than it can ever mean in an isolated and rural National Park.

The result is that many urban activities are enhanced by proximity to and a view of the water. Some recreational activities, such as swimming, boating and fishing, of course make active use of the water. Passive and active recreation, restaurants, apartments, motels and hotels, offices, parkways, and commercial-maritime developments all benefit simply by providing a view of the water. Visits to apartment developments in a major city suggest that there is a rental premium of at least 20% if the same unit is located on a waterfront site. The proximity to water is probably most valuable for water-based recreation, for passive recreation, restaurants, apartments and mixed-use areas with a nautical orientation.
HISTORIC ASSOCIATIONS

A short walk along the Atlantic Avenue waterfront in Boston conjures up many images of the past:

The buildings suggest all the uses which accompanied shipping. There are still warehouses and merchants' offices, although some have been re-used and are memorialized only by such signs as "Leigh & Co., Est. 1832, Merchants in Cocoa, Tea and Coffee." Oh, the exotic spices from the far corners of the earth, the hints of distance, adventure and paradise that drew Melville's clerks and artisans down to the docks, and young boys by the score to the hard and disillusioning life of the sea. ... There are the custom houses of two generations, one like the custom house in Salem where Hawthorne 'discovered' The Scarlet Letter, and another very like the Ferry Building which survived the San Francisco earthquake. They house the offices of shipping agents and underwriters, and underneath there is a sad old coffee-shop for clerks. ... The old buildings now being turned into fancy restaurants and renovated apartments were once--we may suspect--the cheap lodgings, dives and whorehouses of generations of lonely sailors.

The old port waterfront has a salty atmosphere. It suggests "the swagger, the vulgarity, the seafood, the history and the beer that ought to go with seaport waterfronts." Down there we may feel the romance of distant times and places. The flow of water recalls voyages to far-off lands and fabled cities, the time when young sailors and merchants and explorers set off for the Indies, for Zanzibar, for Byzantium and Venice and the Pacific isles. Perhaps because the era of water transportation, and especially the era of wooden sailing ships, is long gone, it has a certain allure, a promise of adventure and exotic climes, lost through the portals of time.

It is primarily pre-industrial waterfronts and ships which have a great attraction today. They are small-scale survivals from times longs past. And the pre-industrial waterfront district may suggest the time when the waterfront was the great public space of the city, when it symbolized both cosmopolitanism and community, and when all sorts of goods...
and activities were watched by the passers-by. It is the pre-industrial character which draws visitors to Mystic Seaport, the U.S.S. Constitution moored in Charlestown, Nantucket, the great wharves on Atlantic Avenue, South Street Seaport in New York, the small fishing and smuggling harbors along the coasts of Europe. In the industrial age, we dream of artisans, medieval cities, small towns, fishermen. The fascination with the old waterfront is part of this broader dream. The clearest evidence of this attraction can be found where the reality has vanished entirely. At the entrance to the 40-story Harbor Towers apartment buildings on the Boston waterfront, a display of old nautical instruments encased in glass dispenses the proper image for the development. Similarly, old anchors, figureheads, prows, wheels, adorn all sorts of new stores and buildings, attempting to capitalize in some way on the pre-industrial aura.

Industrial waterfront districts are historic too, of course. But perhaps because they are too much part of our own age or because they were never very attractive public spaces, only isolated structures tend to attract people: a strange grain elevator, a factory built in an anachronistic pre-industrial motif (such as the Ghiradelli Chocolate Factory in San Francisco).

Of the elements which appeal to people, old ships are a prime attraction. Wooden ships are popular, even if they are not historically significant. These ships can provide the centerpiece for a waterfront district as the Balcutha is the centerpiece of the marine park on San Francisco's northern waterfront.

Old piers are attractive both for their age and for their extension into the water. The marginal street may draw on the images of the past except that this time the goods on display are likely to be antiques. The old buildings themselves help convey the sense of the past—the brick and granite and wood warehouses, residences, and assorted other structures. They contrast in style, materials, scale with modern development elsewhere in the city. Finally there are all sorts of other survivals: old rest-
aurants, details and signs on buildings, ships' suppliers stores, connections to historic events such as the Boston Tea Party, outdoor markets, fishing boats and fish markets.

As a result of all these particular elements, a pre-industrial waterfront district constitutes a unique district in the modern city. In an age of increasing placelessness and opaque environments, they have their own distinctive character, images and visible activities. They expose people to unusual tastes, smells, breezes, sights and harbor activities. They are thus an educational, cultural, and recreational resource within a city.

**THE ROLE OF THE WATERFRONT**

After surveying these images, one is drawn to the conclusion that waterfronts have played and can play a special psychological role in the city. The multi-level fascination with water, the broad expanse, the city-defining edge, the refuge for the city-dweller, the glimpse of harbor activities, the cultural and educational heritage—these all make waterfronts extremely valuable assets.

As such, I would argue, they should be protected and opened up to the whole city. They constitute a scarce city-wide and regional resource and this scarce resource should be shared by the public, rather than allocated solely by market forces. This value assumption leads one toward Burnham's dictate:

> The Lake front by right belongs to the people.
> ... Not a foot of its shores should be appropriated by individuals to the exclusion of the people.19
3. HISTORY OF THE DOWNTOWN WATERFRONT

The great planning problem and opportunity on the downtown water-
front is deciding what to do with areas that have been built up, altered, 
and finally abandoned by the forces of economic and technological change. 
By looking at the waterfront historically, we can see how it came to be 
what it is today, why sections were established and then neglected, what 
residue and vestiges remain today, and how the waterfront has related to 
downtown.

The history of downtown waterfront sections in major, older 
American cities has been remarkably similar. Findings first advanced for 
the Boston waterfront also largely characterize New York, Philadelphia, 
New Orleans, San Francisco and to some extent, Chicago. In this chapter 
we will outline the development of a typical or model waterfront through 
three major periods. The first can be thought of as 'pre-industrial'. 
Wooden sailing ships were the primary means of inter-city transportation. 
This period lasted until the middle of the 19th century. The second era 
began at that point and lasted into the middle of the 20th century. This 
'industrial' period was marked by the introduction of steam power, metal 
hulled ships, railroads, and large-scale industrialization and urbanization. 
The final era, in the middle of the twentieth century, is signalled by a 
new revolution in shipping, containerization, and the decline of the old 
waterfront districts.

In each era, the downtown waterfront has had a different functional 
role, economic viability, image, and relationship to the core. Like the 
city as a whole, the urban waterfront expanded enormously over the centuries 
that we are discussing. The downtown waterfront district is a relatively 
small area. It was once the entire active waterfront of the city. Today 
it is only a small section.
Until the advent of the railroad in the nineteenth century, American cities like their counterparts throughout history, were tied to shipping. Water transportation was far easier, cheaper and quicker than land transportation. Indeed, as late as 1800, "it cost many times as much to move a ton of grain from Buffalo to New York (City) as it did from New York to Liverpool." Trade is the lifeblood of cities and civilizations, and so from the earliest civilizations in the river valleys of the Nile, the Tigris-Euphrates, the Indus and the Hwang Ho, up through the development of the American continent, cities have arisen as trading settlements on the water. Typically they were located where water and land transport could meet or where two or more navigable waterways flowed together. It is only since the nineteenth century that new cities have been founded away from navigable waterways. Atlanta and Denver, for example, began as railroad junctions. In the future, we may expect to see cities grow at the junction of great highway networks or at major new airports.

In this pre-industrial period, shipping was the dynamic economic force in the growth of cities. Jane Jacobs describes this growth process in a general model in her book The Economy of Cities. The port cities of colonial America seem to fit her model. The port city had to provide trading and depot services: merchants; freight forwarders, packers and consolidators; bankers to finance voyages and provide temporary credit until the receipts from sales abroad could be realized; insurers to diversify the high risks of shipping; customs officers, brokers, preparers of documents to process imports; warehouses to store goods awaiting shipment; saloon-keepers, boardinghouse-masters and prostitutes to provide for the needs of sailors and traders from afar. The port city was an ideal location for the final manufacture and processing of exports and imports, for the production of ships, wagons, crates and barrels, and for
the production of intermediate goods and services needed by the exporting firms. Over time, the suppliers of intermediate goods and the firms which supplied consumer goods to residents and visitors became highly skilled and specialized. Some began to export their products directly, including engines, tools, decorative glass, buttons and similar items. These activities in turn required other specialized goods and services—weavers, die-cutters, printers. As the port city grew, the local economy expanded more rapidly than the export-sector which had been dominant when the city was first established. As the population passed various thresholds, local suppliers could provide goods and services that once had to be imported from larger cities—shoes, publishing, university educations. As the economy became more complex and interdependent, and the variety of services and labor skills available broadened, it became easier for small innovative firms to introduce wholly new kinds of work. They could draw on the suppliers and labor force already established, and thus begin as a very small, high-risk enterprise. Thus the city that began as a small trading outpost providing raw materials to an older, larger city—as Chicago once served New York, and New York once served London, and London served Amsterdam which had in turn served Florence, and Florence had once served Venice which itself had originally served Constantinople which had earlier served Rome—became a major city in its own right.

Let us see how these general economic forces were spatially located in the early American port city. In the first year of a port's history, before major docking facilities could be built on the shore, temporary ways of loading and unloading merchandise had to be devised. In Boston, for example, lighters or barges transferred cargo from the ocean-going vessels at anchor in the harbor to the shallow shore. In the colorful and frantic case of San Francisco, ships were simply run aground and abandoned by their gold-hungry passengers and crew. These old ships were used as piers for later vessels and as shops on the streets of the town.
As soon as possible, more permanent docking facilities were established. These could be of several types, depending on the nature of the harbor, the current and the tide.\textsuperscript{10} Finger piers extended out into the water, while slips were dug into the land, and quays were simply masonry-lined banks of a river where a ship could pull up parallel to the shore.\textsuperscript{11} Whatever the specific form, an open-space parallel to the ship had to be provided for loading and unloading operations. Temporary storage facilities for incoming and outgoing goods had to be created close to the dock.
The establishment, enlargement and replacement of these docking facilities were the largest and most significant investments in the new city. Typically they were built by private merchants who were granted special privileges and assistance by the local governing body. As the trade of the port increased and the ships became larger, old small and obsolete wharves were replaced by more spacious ones. In Boston, the cramped wharves of the 1600's were superseded by the great Long Wharf of 1710. It ran 1600 feet out into the harbor, provided a 30 foot wide roadway for loading, and contained stores and large warehouses. When trade expanded rapidly in the early 19th century, a whole series of major new wharves were built: India, Commercial, Central, and T, these were great granite warehouse blocks with wholesale stores, auction and counting rooms.

These commercial shipping facilities occupied only a portion of the waterfront. They were vital to the other activities of the city which all clustered around them. But other land uses also sought waterfront locations, including shipyards, navy yards, mills, tanneries, breweries, slaughterhouses, forts, and ropewalks. These activities are known as 'urban fringe land uses'. They typically locate on the edge of the city because they require a large amount of inexpensive land and/or create a nuisance in the immediately surrounding area. These uses located on the outer portions of the waterfront--on the edges of the Town Cove in Boston and up the East River in New York. As the residential and commercial city, originally centered on the commercial shipping waterfront, grew, it eventually reached and absorbed these old outlying areas. Over time, new urban fringe activities had to locate even further away from the old center. In the Boston area, navy yards and shipyards were thus built across the harbor in Charlestown, East Boston and Medford. In New York they were built across the Hudson and East Rivers, in Brooklyn and New Jersey. In Philadelphia and New Orleans they were built further up and down-river. Thus, what we today call the modern downtown waterfront was
once a complex area, consisting of the early commercial waterfront and the first urban fringe.

The commercial waterfront was the center of the port city. Ship suppliers, merchants, bankers, artisans, prostitutes, hotel-keepers, and tavern-owners all competed for that valuable space where cargo, passengers, crew and information first reached land. The merchants' coffee-house was established right by the main dock and really served as an information exchange. The lending and under-writing committees and operations established informally in the coffee-houses of Philadelphia, New York and Boston became the stock exchanges and insurance companies of the nation. The houses that the wealthy merchants built to be close to the docks became too valuable for residential use and were rented out for stores and offices. The red light district of the city was established close to the docks to serve the sailors, as were chandlers, warehouses and small processing activities like distilleries. The produce market was also established close to the docks, since it was where fishing boats could land their catch and barges could bring in crops and livestock from across the river or bay. The food market in Boston was known as Dock Square. As population grew, market facilities had to expand. Old market buildings were torn down and replaced by large new structures such as the three long Quincy Market buildings in Boston.

As all these activities became established in their own right and turned more and more to serve the growing local market, they became less dependent on shipping. Many remained in the same location, but this was due more to inertia and sunk investment than to the proximity of the boats. The downtown established near the water could eventually turn away from it.

The distinguishing characteristic of the pre-industrial waterfront was the marginal street, a wide roadway built parallel to the water. It was used for getting goods to and from the piers, for temporary storage, for indoor and outdoor trade, for strolling and kibbitzing. This marginal
street, with the high-masted sailing ships on one side and the crowded blocks of the city on the other was the center and the symbol of the pre-industrial port city.

Figure 3-2: Quincy Market, Boston. From Whitehill, *A Topographical History of Boston*.

**INDUSTRIAL**

Rapid industrialization in the second half of the nineteenth century changed the nature of shipping and therefore of the downtown waterfront. The change from sail to steam power and from wood to metal hulls meant that ships could be larger and therefore require more commodious docking and storage facilities. New unloading machinery was devised which also required larger spaces and structures. Iron and steel was now used to build piers and warehouses, instead of granite and wood. Bulk cargos for a region's factories—coal, oil, chemicals—required vast
storage spaces, usually outdoors, and special handling equipment. Finally, shipping was now tied to the most significant innovation, the railroad. Easy transfer from ship to rail-car was essential in order to avoid the slow and inefficient journey by horse-drawn wagon down city streets to the rail yards. Therefore wherever possible, port facilities were tied in with rail spurs, freight yards and terminals. The result of all these changes: shipping itself became more and more of an urban fringe activity, space-intensive, large-scale, obnoxious and industrial. While the downtown core remained relatively stationary, shipping began to move to a new urban fringe belt, on the outlying waterfront of the city. The downtown waterfront itself was either abandoned and/or transformed into an industrial district, becoming a low land value 'frame' around the core of downtown.

Let us look in more detail at the impact of railroads. Railroads attempted to extend their new means of transportation to the existing centers of population, trade and manufacturing. This meant getting to downtown and to the downtown waterfront. But precisely because it was the center of activity, the downtown was also very difficult to penetrate. The railroad companies generally had to settle for creating terminals and yards on the edge of the built-up city: at 14th Street and 34th Street in Manhattan, at the Back Bay, Mill Pond and South Boston waterfront in Boston. Frequently, a secondary waterfront not used for shipping provided a route location for railroads attempting to reach downtown. Chicago, for example, allowed the Illinois Central to enter the city along the lakefront on a 300 foot wide strip of landfill. The lakefront at the time consisted of mudflats and was not used for shipping. In return for this privilege, the railroad company agreed to maintain a breakwater for the city. The lines and stations in Boston were built across and atop marsh-flats, while the New York Central followed the Hudson shoreline south to lower Manhattan. Thus, outlying shorelines
Figure 3-3: A sketch map of port facilities in Boston Harbor in 1800 and 1900. Major shipping activities out-migrated from the Boston waterfront to South Boston, East Boston, and other outlying sections of the harbor, in order to be near rail-heads.
which were flat and skirted the built-up city often became alignments for railroads.

The key problem for the railroads was tying their land transport system to the water transport system. There were several ways of doing this. A spur might be squeezed onto the downtown pier. But the old pier was typically too small and congested. Even when such a line was constructed—as it was on Atlantic Avenue in Boston—it had to deal with the congestion of wagons and pedestrians on the marginal street. Another solution was to retain the downtown piers but to provide rail freight yards across the river or bay, with car-ferry service in between. This was especially appropriate for a city located on a peninsula or island which was already cut off from much land traffic. Thus, Oakland was developed as freight yards for the San Francisco waterfront, East Boston for Boston, and the New Jersey shore for Manhattan.

Finally, wholly new docking facilities could be built up, combining the advances in rail transportation, unloading space and facilities, and special storage buildings. These were sometimes sponsored by the rail companies themselves. Both East Boston and South Boston, for example, were built up by rail companies. These new areas were generally vast, space-intensive industrial areas, where factories and warehouses could also be built alongside the docks and train yards.

These new areas meant the out-migration of shipping from the old to an outlying waterfront. In some cases, the new waterfront was nearby and in time became another "downtown" waterfront. This was what happened when Manhattan's shipping facilities transferred from the East to the Hudson River to accommodate the larger steamships.

But old waterfront interests were not always content with the passenger ships, small packets, fishing boats and ferries that still remained there when the major freight liners had moved away. In some cases, these interests attempted to modernize and thus revitalize the old waterfront. In New Orleans after the Civil War, a rail line
and freight yard were constructed along the riverfront of the French Quarter, cutting Jackson Square and the quarter off from the Mississippi. Although new wharves were built alongside the yard, most of the commerce continued to move to points further away from the center of the city. Atlantic Avenue was constructed in Boston, providing a rail line down this new marginal street. The avenue bisected the great wharf blocks of the pre-industrial era. The effect was even more devastating when it was later widened from 100 to 200 feet. Contemporary observers commented that this wholesale destruction was symbolically fitting for the death of the old waterfront. Early in the 20th century, a plan envisioned tearing down all the old wharf buildings still on Atlantic Avenue to better serve the coastal steamers which still docked there. But the investment in new facilities went instead to the outer areas of the harbor. Thus, these projects generally failed to retain major shipping activities, but often transformed and/or razed the pre-industrial waterfront. For, wherever the railroad went—whether on the old waterfront or in new sections of the port—it created industrial districts with breweries, factories, power plants, coal yards, open storage areas, all of which were dependent on the rail sidings. Workers' shanties and tenements were attracted by the low-skilled jobs available, while middle and upper-class residences were driven out by the nuisances of the area. Chelsea on Manhattan's lower west side, for example, was converted from a relatively fashionable residential neighborhood to an industrial and immigrant section, by the construction of the Hudson River railroad—whose "Death Avenue Cowboy" rode ahead of the train to warn cross-traffic at the street intersections.

As shipping uses on the old waterfront stagnated or declined, other land uses expanded into the area. Although the financial district itself remained stationary or expanded away from the waterfront and toward the new built-up sections of the city, it attracted the rapidly expanding warehouse district. The warehouse district was the dominant area of the 19th century mercantile city and was frequently located on the old downtown waterfront in order to be near the information, credit and transactions of the financial core. A number of functions took place in
the warehouse district. Goods were stored. Display, auction and sales rooms allowed buyers to examine and purchase merchandise. Counting rooms, offices, clerical, and advertising activities occupied other floors in the typical warehouse building. Basements, attics and other marginal interior spaces were often devoted to workshop manufacturing, using immigrant labor. The warehouses were often grouped together in specialized sub-areas: dry goods, shoes, wool, cotton. Large areas surrounding the financial district were built up in this way in major cities between 1840 and 1890. It was only at around the turn of the century, with the growth of retailing due to increased consumer income, mass production and streetcar transportation, and the invention of the telephone, that the complex of functions was separated out. The old warehouses which remained were then generally used for storage.

The produce markets which had long been on the waterfront, expanded rapidly in the industrial era to serve the growing urban population. The market district split into specialized sub-areas: wholesale and retail; fresh produce, cold storage of meat, specialty foods. Canneries, fish processing plants, sausage factories and large cold storage warehouses were built. These were sometimes built on old piers no longer used for shipping, such as those on Atlantic Avenue.

Thus, in the industrial era the waterfront which had once been the front door to downtown now became one side of its service 'frame'. Urban geographers describe the frame of downtown as a large, low-density, low land-value area. Today it houses business services such as printing, graphics, paper and office supplies; wholesaling, warehousing and light manufacturing; produce markets; transportation facilities such as truck terminals, docks, railroad stations, bus depots, and auto facilities; various institutions; and some transient residential uses. These activities have (or once had) a need to be near the downtown core, require large
Figure 3-4: Changes in the central business district and on the downtown waterfront in Boston during the late 19th century (from Ward, *Cities and Immigrants*). The map shows the locations where railroads penetrated to, and how the warehouse and produce market districts expanded toward the water's edge.
Figure 3-5: This diagram suggests the concept of core and frame (from Yeats and Garner, *The North American City*). The waterfront ("natural barriers") is shown as one side of the frame.
**Functional Areas:**

"Northwest" Goods Handling

**Source:**

CPD, LMP FIELD SURVEYS

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Figure 3-6: The Core and the Frame, on the Hudson River waterfront in Lower Manhattan. This land use map shows the actual uses in a frame district. Source: Wallace, McHarg and Todd, *The Lower Manhattan Plan*. 
amounts of floor space, and cannot pay high rents. This frame surrounds a high-density, high-value core, which has the city's highest concentration of retail sales, office space, pedestrians, daytime population and transit access. While the frame may surround the core on some or all sides, it is "most prominent in those urban areas where there is a waterfront running through the downtown area." 40

The major seeming exception to this pattern of development was the renowned Chicago Lakefront park system, created early in the 20th century. The 1893 Columbian Exposition had been located on the lakefront some 7 miles south of downtown. It inspired Chicagoans to think of the lakefront as a recreational resource. Lincoln Park was established south of downtown in 1900, and became a playground, carriageway and sylvan promenade for the wealthy residential community which developed alongside it. The Burnham Master Plan for Chicago, in 1909, drew on these examples to propose a continuous waterfront park system. The mudflats would be filled in and the lakefront railroad line would be electrified and tunnelled underground. Grant Park was the key point in this system. It was a vast formal, landscaped area adjoining the high-density core on Michigan Avenue. Grant Park provided elaborate fountains, athletic grounds, yacht harbor, and recreation pier, with dancehall, theaters and restaurants. 41 But the Chicago park system could only have been created because the lakefront had not been used for shipping. The Chicago River had been and remained the locus for navigation and industrial and commercial activities. The mudflats on Lake Michigan, so close to the downtown core, were a fortuitous opportunity, wisely grasped. Thus, the Chicago lakefront park system is part of the tradition of establishing parks on marginal land unsuitable for private development or, failing this, on the fringe of the city. In other cities, public and commercial recreation areas were established on outlying urban waterfronts, often at the edge of the city. Riverside Park in Manhattan was created along the Hudson in the 1880's to halt the northward spread of finger piers along the river. 42
TWENTIETH CENTURY

This chapter traces the history of the downtown waterfront up till the efforts at recapture of the late 1950's and 1960's. Until that time, the major trends were the decline and further out-migration of shipping to the new urban fringe, the decline of warehousing, railroads and industry along the downtown waterfront, and the construction of major highways in these relatively soft areas of the city.

Shipping itself has declined as a means of transportation for both cargo and passengers. Railroads, trucks and autos have made land transport faster and more efficient than canal, river or coastal navigation. Even in overseas transportation, airplanes already carry seven times as many passengers across the Atlantic each year, and have narrowed the passenger market for shipping to recreational cruises. These cruises, too, have become shorter as passengers now fly directly to warm-water ports to begin the voyage. In overseas freight transport, planes have begun to carry high value, low weight cargoes, such as electronics instruments, and highly perishable commodities. The result: in both continental and overseas transportation, ships are left primarily to carry bulk commodities, raw materials and heavy manufactured goods. These are precisely the type of materials which cannot be handled efficiently at downtown waterfronts, since they require large amounts of storage space and special handling facilities. In the very long run, one might hazard a guess, electronic communications, jet transportation and further industrialization will increase the magnitude of international trade and put a premium on very fast freight transportation. This demand might more likely be satisfied by underseas pipelines and new kinds of aircraft than by ships. Naturally, the land uses once associated with shipping—hotels, convention centers, warehouses, industrial plants—are now located on highways and at airports. Parents who wish to show
their children a connection to the far corners of the earth take them to
the observation decks overlooking the runways, not to the finger pier
jutting out into the harbor.

Along with the general decline in shipping as a means of transpor-
tation, which has adversely affected the downtown waterfront, there has
also been a change in shipping technology which reinforces this effect.
Recent shipping technologies—containerization, palletization, roll-on/
roll-off handling, and lighter aboard ship (L.A.S.H.)—all involve the
pre-packing of a container or detachable van at an
inland point and its movement as a unit
by land and
sea to an inland destination without the rehandling
of its contents en route. 44

Containerization makes for greater efficiency in cargo handling, reducing
turn-around time by 2/3 and cutting the number of men needed to unload
a ship by 4/5. 45 Containerization is not only capital-intensive. It is
also very space-intensive. Parking and maneuvering space for a single
container-ship berth requires some 25 to 30 acres. That is 5 times as
much land area as is needed by a conventional ship berth. 46 Space near
built-up areas is very expensive and difficult to acquire. In the Port of
New York, for example, a container port was built in Elizabeth, New Jersey,
where space costs $60,000 per acre, not in Manhattan where it costs at
least $400,000. 47 Multi-story, automated container storage structures
which make better use of scarce land can be built in built-up areas, but
as the trucks left the structure they would confront the congestion of
urban streets. 48 49 The result: container ports are generally built in iso-
lated sections of the harbor: at Boston, on the Mystic River and a new
proposed one in South Boston; at New York, some facilities in Brooklyn
but primarily in Elizabeth and Newark; in the Bay Area, in Oakland and
proposals along the south shore of San Francisco away from the old port.
Faced with the out-migration of port activities, old waterfront interests respond with the same strategy as their predecessors did in the 19th century. They attempt to revitalize the declining section. In New York, the City government spent $34 million in 1964 to renovate three old finger piers on the Hudson River. The steamship line which had already committed itself to a 20-year lease, found it less unprofitable to pay the rent but actually transfer operations to wholly new facilities in New Jersey. The piers had only been in use for a few weeks. In 1965, the City spent $7.3 million to build a new Pier 36 in the East River. It too fell into immediate dis-use. The forces resisting out-migration generally have institutional boundaries and commitments which bind them to a specific geographic area. The Manhattan local of the longshoreman's union is restricted to Manhattan; members cannot transfer seniority rights to New Jersey docks. Some port commissions, such as the one in San Francisco, deal with only one part of the entire port and therefore see new facilities in another section of the harbor as competition. City governments cannot tax outside their jurisdictions. These institutions, together, are the strongest supporters of continued shipping on the old waterfront.

Thus, freight activities have deserted most downtown waterfronts. Of all the piers built on Manhattan's West Side from 1860 to 1920, only a few are still used for shipping. Fishing fleets which often remained after the first wave of industrialization in the 1860's and 1870's have also emigrated to new facilities further out of town. Only passenger shipping has tended to remain downtown, primarily for passenger convenience and proximity to hotels and city attractions. Plans to renovate or create new passenger shipping terminals have been advanced in New York and San Francisco, encouraged and subsidized by municipal governments, in order to retain the passenger trade.

The rail facilities built during the industrial era to serve the waterfront have been declining in use. This can be attributed to the relative decline of shipping which once provided the cargoes for the rail
Figure 3-7: This map of the rail facilities along the Hudson River in New York and New Jersey shows the extent of these currently under-utilized areas. From the Regional Plan Association, The Lower Hudson.
line, the out-migration of shipping and industry away from the central city, the competition of autos and planes for passenger traffic and of faster, more flexibly-routed trucks for short-haul freight transportation. Marine railroad operations--the car-ferries established in the industrial era--have been especially hard hit. Trailvans are unloaded from long distance trains and moved across bridges and tunnels to the central city and/or the docks by truck. The rail-car loadings on the downtown waterfront have decreased dramatically in recent years. From 1956 to 1970, the number of annual car loadings on the West Side of Manhattan dropped by 75%. Many of the shippers and freight forwarders who are still located in the West Side rail yards use trucks exclusively and ignore the rail sidings that are available. As patronage has declined, many railroad companies have merged and consolidated part or all of the previously independent operations. The result of all these forces: under-utilized rail lines, freight yards, and marine-transfer facilities occupying large waterfront sites, some near downtown and some further out on the old urban fringe. These facilities and spaces constitute major opportunities for waterfront redevelopment.

Warehousing and industry have also tended to abandon their downtown waterfront locations. The introduction of railroads and then of highways allowed these uses to locate at inland locations. As warehousing became an exclusively storage activity, connecting factory and retailer, it no longer needed to be near the financial district. As both suppliers and consumers moved to the suburbs, warehouses went with them. The suburbs also offered better truck access to the Interstate Highway system, less expensive labor, and cheap space for modern one-story storage and processing functions. Only warehouses in those industries with unstandardized goods, many small firms, comparison shopping by buyers, and high value to weight ratios--such as the garment industry--have tended to remain downtown. Studies of waterfront factories conclude that "waterways play no significant
Firms which are located on urban waterways are there largely because they offer inexpensive sites, often close to downtown clients. These firms tend to be in the most marginal, inertial, and poorly kept-up industries. Produce markets have also begun to emigrate to outlying parts of the metropolis. Obsolescent and unsanitary facilities and lack of truck access and maneuvering room were good reasons for moving out to new facilities. But these markets were highly fragmented, consisting of small specialized firms which depended on proximity to each other. The whole market had to move together or not at all. In recent years, municipal governments in Boston, New York, and other cities have established new market facilities in the outlying sections of the city, mainly in order to encourage the markets to move from their present locations. These downtown sites could then be used for major re-development projects.

As warehousing, industry and rail operations deserted downtown waterfronts, other land uses were attracted by the cheap industrial-type space near downtown. Trucking and distribution activities—packers, truck terminals, rental agencies, repair shops, and parts suppliers—took over many of the old blocks. But the continued out-migration of population, warehouses, factories and shipping, and the need for more ample loading, maneuvering and parking space eventually inspired many of these activities to move out in turn. Studies of the West Side of Manhattan show that only those truck/distribution firms with strictly local Manhattan clientele and relative insensitivity to the costs of congestion have tended to remain there.

These weak areas alongside downtown attracted major highways, including the:
1930's: West Side Highway in New York City
1940's: East River Drive in New York City
" Storrow Drive in Boston
" Alaskan Way Viaduct in Seattle
" Whitehurst Freeway in Washington, D.C.
1950's: Schuylkill Expressway in Philadelphia
" Central Artery in Boston
" Embarcadero Freeway in San Francisco
1960's: Interstate 71, Cincinnati
" Interstate 64, Louisville
" proposed Riverfront Expressway in New Orleans
1970's: Delaware River Expressway in Philadelphia

Most of these roadways were proposed at a time when the prevailing criteria for route location were: 1) officially, minimum cost for land acquisition and construction; and 2) unofficially, avoidance of high-income and other potentially powerful residential and commercial districts. As concern with social and environmental effects increased--at first politically and then in statutes--many highway projects, including those on waterfronts were halted or modified.

The main purpose of these roadways was to provide access to and a bypass around the downtown core. Alignment through the frame area was a natural way to locate close to the core without taking its high-value land and buildings. The waterfront itself provided an edge of the city, skirting the densely built-up sections. In the ancient past, roads had skirted the hard areas of hills and ridges to avoid expense and problems of construction. In the modern city, the new hard areas, the new obstacles, are man-made. The technical, acquisition, social and political costs of building through districts with high-density development above ground and complex infra-structure below are enormous.

Moreover, the new highway could often follow the alignment of the old railroad. The railroad strip provided a cleared right-of-way through the city, either on its unutilized roadbed or on air rights overhead. The old transportation strip was generally owned either by government or by a railroad, making acquisition much simpler.
In addition, the industrial and warehouse buildings erected along the old waterfront in the late 19th and early 20th centuries were by now generally obsolescent, commanded low acquisition costs, presented no residential protests or relocation requirements, and finally had no one to voice any aesthetic values which might be desecrated by a highway. The persistence of transportation corridors was illustrated by the proposed Riverfront Expressway in New Orleans. It was conceived of as an elevated roadway over the old railroad. Because the adjoining land uses were industrial, the highway planning team headed by Robert Moses concluded that the highway would "deprive no one of needed light and air" and have no depressing effect on abutting real estate. Highway opponents, concerned with its effects on the French Quarter behind the industrial strip, conceded that the Quarter was already cut off from the Mississippi and that the area was industrial. But, they contended, many of the industrial, dock and railroad uses were in themselves obsolescent and would over time be replaced either by a public park or some form of residential-commercial development. If an elevated expressway were built, the possibility of regaining direct public access to the river would be lost for at least another generation. The question raised by this controversy, and indeed by the whole history of waterfront planning, is how to deal with the legacy of the past without closing off desirable future alternatives.

THE LEGACY

The downtown waterfront has come down to us as a complex district. It may contain survivals from the pre-industrial era, including residences, wharves, markets and stores, which are small-scale and romantically evocative of a past time and place. It will generally contain survivals from the industrial era, including docks, rail lines and yards, factories and warehouses, cold storage and other market facilities, and water pollution. Creations of the most recent era, especially highways and parking facilities, are often there too. What we call the downtown water-
front usually includes old and more recent shipping areas and one-time urban fringe areas.

Along with this physical legacy, there is a legacy of images as well, described in Chapter Two: the image of the marginal street waterfront as hearth of the city and the image of the industrial waterfront as a dynamic but ugly and obnoxious place, and above all the image of the waterfront as intimately bound up with the nature and history of the city.

There is a planning legacy as well. Waterfronts have been subject to vast forces of change, often coming from beyond the city itself: new advances in technology, changes in overseas trade routes, changes in the role and type of shipping. Planners have tried to react on a local basis to these sweeping forces, and have frequently tried to revitalize areas which were no longer economically viable. There has been continual renewal of waterfront areas to adapt to these changes. Except for the downtown core, more investment has gone into the waterfront than into any other area of the city. Redevelopment is nothing new to the downtown waterfront.

This investment has often been tied to the public, for the waterfront has usually been regarded as a municipal resource. Public ownership, control of tideland rights, the granting of privileges and construction permits, investment in new landfill and platforms, the encouragement of shipping, the building of railroads and highways, have all created a tradition of public interest in the waterfront.

Among city districts, waterfronts have usually been 'soft' areas, for landfill, new facilities, highways and railroads, while the adjacent downtown core has been the hardest and most stable section of the city.

Planning for the waterfront has usually been related to the needs of downtown. At first this meant providing access from the ships to the merchants and financiers of the core. Later, it meant space for the warehousing district to expand alongside the core, and easy alignments for railroads and highways to reach the core. Old, low-rent space on the
waterfront was used to house core-related activities such as business services and distribution. And today, waterfront redevelopment is usually geared to meet a perceived need of downtown.
4. RECENT PROJECTS: RECAPTURING THE WATERFRONT

Ever since the late 1950's, public and private organizations have been investing heavily in downtown waterfronts. Except for highway-building, the last major investment in these areas had generally occurred back in the industrial era, somewhere around 1900. The new redevelopment efforts differ from the highway-building and industrial development which preceded them. These latter had been nuisance uses. They were utilities at the city and regional scale but eyesores at the very local scale. New developments generally attempt to make positive use of the waterfront, by capitalizing on the images we have described.

There have been two major types of redevelopment: the extension of downtown with high-rise offices and luxury residential towers, and the small-scale mixed-use historic preservation. On occasion these two types have been combined in a single project, such as the Waterfront Renewal project in Boston. In the following chapter we will explore the issues involved in choosing these types of redevelopment. In this chapter we simply wish to present the most outstanding examples of each type, in order to ground the discussion in specific projects.

EXTENSION OF DOWNTOWN

Market forces and city government policies have worked separately and together to rebuild the waterfront as an extension of downtown. Let us first look at market forces. The expansion of the downtown core toward the waterfront in the 1960's is only the latest move in a history of downtown expansion. The story of lower Manhattan provides a dramatic illustration. The downtown expanded laterally from 1650 to 1850. Each generation added another block of landfill at the water's edge. Horizontal expansion was essential because construction technology restricted buildings to 3, 4 and 5 stories. From 1850 to 1950, building technology advanced rapidly—with the introduction of steel frame construction
and elevators. New space could now be added vertically in the center of the island. The amount of office space multiplied many times over in succeeding years, but no new landfill was created. By the late 1950's the density and property values of the developed core were such that lateral expansion began to seem promising again.

Major private development pressures on downtown in recent years have come from office, market-rate residential and occasionally hotel markets. The office market has gone through periodic boom and bust cycles but has largely remained focused on downtown, central city locations. New office construction since World War II has generally not been to accommodate an increase in the number of office workers, but rather to provide higher quality space and more space per employee. Demand has focused on new types of space: headquarters, air-conditioned, large floors, pleasant views. Despite increasing suburbanization, a residential market downtown still exists for executives, professionals, young and childless couples, and non-family households who work downtown and enjoy the convenience to work and to the concentrated amenities of city life.

In satisfying this demand, the industrial frame uses along the downtown waterfront in many cities came to be seen as 'soft' for redevelop-oment. The out-migration of shipping, manufacturing, warehousing, the under-utilization of railroads, the physical age and obsolescence of the produce markets created a general image of decay, obsolescence and abandonment. More important, space rentals and land values in waterfront areas were considerably lower than those in the high-rise office core only a few blocks away. A contour map of land acquisition costs in lower Manhattan, one of the places where development pressure was most intense, shows a steep gradient from less than $50 a sq. ft. along the waterfront to more than $500 a sq. ft. in the very center. Moreover, at the same time that land costs were increasing rapidly in the center of downtown, and available sites were being utilized, improvements in
Figure 4-1: Contour Map of Land Acquisition Prices in Lower Manhattan, showing how they peak in the core and then taper down toward the water's edge. Source: Wallace, McHarg and Todd, The Lower Manhattan Plan.
pile-driving technology were making large-scale landfill or platform construction more economical. Estimates of site preparation costs for landfill or platforms range widely, but a variety of studies suggest that they are often far cheaper than site acquisition costs upland. In 1967 for example, the Lower Manhattan Plan estimated the costs of landfill at $8.30 per sq. ft. for demolition of piers, actual fill, and dikes, with an additional $1200 to $1500 per linear foot for construction of the perimeter retaining wall. The total cost for landfill, retaining wall and utilities was estimated at about $15 per square foot. Further uptown on the East River, the HRH Construction Company which proposed to build the Waterside apartment development estimated costs of platforming at approximately $22 per sq. ft. in 1968, compared with $50 a sq. ft. for land acquisition in adjoining areas. 1973 figures for Battery Park City suggest that landfill and utilities wound up costing about $40 per sq. ft. Platform construction on Manhattan Landing will cost slightly more, but will be tax-depreciable. These and similar findings suggest that at least for Manhattan, landfill or platforms can be created for about 1/3 of what it would cost to buy the same size parcel inland. Although this type of development involves more time-consuming governmental approvals, it would avoid the problems of land assembly and of hold-out owners. Clearly, in cities where development pressures are less intense, the rationale for fill or platform is likely to be less cogent.

Since the Urban Renewal Program of 1949, central city policies have focused on revitalizing downtown. The Renewal Program changed the focus of Federal aid from the replacement of slums by adequate low-cost housing to the strengthening of the central city by the redevelopment of 'blighted' areas. Cities used the program as a way of keeping middle and high-income residents in the city, both for the direct tax benefits and for strengthening the competitive position of downtown retailing and offices versus the suburbs. The long-range aims were to keep fiscally and socially desirable residents, workers, and activities in the central
city.

The working definition of blighted areas reflected these long-range policy goals. Although blight could be identified in a designated area by substandard buildings, deterioration, etc., the working definition was really: the wrong activity in a given location, an activity which was not the highest and best use of the site, an activity which was not maximally profitable to private developers and to city tax-collectors. Boston's low and moderate-income West End was demolished to be replaced by the high-income Charles River Park, in order to provide a more 'favorable' environment and clientele for nearby institutions and major retailers. Blighted in this, as in so many other cases, really meant that the area was "too good for the people living there." 11

Blighted areas targeted for renewal therefore included the soft frame areas around the central business district. The renewal effort would turn these sections into adjuncts and extensions of downtown. The special advantages of frame areas on the waterfront were recognized: the design opportunities, the views and visibility that tenants would enjoy, the special location, the lack of any residential relocation problems.12

Whether these waterfront redevelopments were wholly private or both public and private, they often involved very large-scale developments. The large-scale could amortize the land assembly or landfill/platform costs, and could create a sufficient critical mass to draw tenants and customers to such relatively isolated locations.13

Of the major waterfront proposals, a large number have focused on Lower Manhattan, largely because 1) the financial core is a small restricted area, only a few blocks from the water on 3 sides,2) property values and density in this core are extremely high, 3) demand for office and residential space in Manhattan, in general, is extremely intense, and
bankers, developers and investors who have tremendous sunk investments in the area are concerned about its stagnation relative to Midtown. From World War II until the late 1950's, all the new office construction in Manhattan went to Midtown rather than Downtown. Downtown leaders had to decide whether to make massive new re-investments in the area in order to counter this trend, or whether to allow it to continue. Their decisions resulted in three major projects: Chase Manhattan Plaza, the World Trade Center, and Battery Park City. Chase Manhattan Plaza was not on the waterfront at all, but rather in the virtual center of the financial core. This 60-story prestige headquarters, completed in the early 1960's, stimulated a number of similar private developments. The World Trade Center, established by the Port of New York Authority with New York State as a major tenant, consisted of two 110-story towers, with approximately 10 million sq. ft. of office space. It was located on the old waterfront frame of the core, a site formerly occupied by electronics wholesalers and other small enterprises in relatively old and low-rise structures. Although the theme of the Center, as a collection of all the import/export agents and customs officers, was symbolically related to the water, the project itself was cut off from the Hudson by the elevated West Side Highway.

As these major private and public office complexes were being proposed, David Rockefeller of Chase Manhattan, a major leader of the downtown business community, was concerned about the long-run viability of office-space in downtown. Midtown was so attractive to corporate headquarters because it was a mixed-use district with the city's leading retail stores, restaurants, theaters, movies, libraries and was adjacent to the major upper-income residential area on the East Side. Downtown, on the other hand, was almost exclusively an office environment—financial, banking, insurance and government—with few complementary facilities. The lack of non-office uses might
detract from Downtown's attractiveness for future office space. The catalyst for mixed uses, it was argued, would be the infusion of residences into this exclusively 9 to 5 environment. Battery Park City was the result: a 100 acre landfill, with 14,000 dwelling units--originally to be 1/3 luxury, middle and low-income and later changed to 30%, 60%, and 10% respectively. It was financed by State bonds issued through the Battery Park City Authority. The City government is to benefit directly as owner of the landfill. Instead of the $300,000 in pier rentals that it received before, it would now receive $33,000,000 in lease payments each year.16

The 1967 Lower Manhattan Plan, sponsored by the City government and the downtown business community, used the reasoning behind and the design of Battery Park City as a model for waterfront residential and commercial development on landfill or platforms all around the tip of Manhattan. It proposed a framework for up to six 'neighborhoods', each with 10 to 15,000 residents, centered on waterfront coves and plazas at the end of major pedestrian crosstown streets. The office commercial and residential space would all be privately financed. The residential component would eventually be mixed-income, but to "set the tone" for the development, the luxury and middle-income units would be built and rented first. The Plan used a case study of the East River as an illustration of their principles. This platform would contain 2.2 million sq. ft. of office space and 6000 luxury units in high-rise, garden apartments and townhouses, surrounding a cove with a marina for local residents and outsiders. The culmination of this planning effort was the actual Manhattan Landing Project on the East River. It is a privately financed development with 6500 luxury units, 6 million sq. ft. of commercial space including a major department store, 2 new parks and a public esplanade, a marina and sports center, all built on a platform over the East River.18
Figure 4-2: The Lower Manhattan Plan, showing the waterfront development, plazas on coves, and major crosstown pedestrian routes. See Figure 7- for a sketch of the new development.
Other agencies and developers have recognized the potential for waterfront residential communities along the rest of the Manhattan shoreline. These would be close to the center of the city, offer excellent views for which premiums could be charged, provide a relatively exclusive turf for the tenants, and allow for marinas and other water-related uses. On the supply side, land costs would often be much lower than in upland districts. In 1970, Richard Ravitch began the 1450 unit Waterside apartment complex on a platform over the East River between 25th and 30th Streets. He used a variety of government approvals and forms of assistance including a 99-year lease of the development rights from the City, Federal legislation to define that part of the waterway as non-navigable and therefore not subject to Federal expropriation without compensation, an extremely low lease payment in lieu of taxes to the City, Federal below-market interest rate financing, and rent supplement funds. In exchange for city approvals and subsidies, the city government required that 350 of the units be moderate-income, including 70 low-income units. By using these devices, and the low cost of platform construction compared to land acquisition upland, Ravitch was able to project market rents of $50 a room per month, compared with $80 a room per month in conventionally-financed projects upland. The most ambitious development proposal concerns the West Side Highway. The West Side Highway Project is considering the use of Federal Interstate Highway funds to build a new West Side Highway out in the Hudson River on a massive landfill, 250 to 300 acres of which would then become available for residential development.

In Boston, the notion of in-town, high-rise luxury living on the downtown waterfront was adopted as well. The initial design plan for the Waterfront Renewal Project provided for—among other elements—a hotel and plaza in the center with high-rise luxury towers at either end of the waterfront strip, serving as twin 'anchors'. The northern
set of towers was never built because of the resistance of local residents, the intention of several industrial and storage firms to continue their operations, and lack of a sufficient residential market. Two forty-story luxury towers have been built at the southern end with a large parking garage and a small marina. Absorption has been slow, partly because of the isolation of the units, the presence of ongoing construction nearby, and the unusually high rent levels.

In San Francisco, downtown extensions were tied to shipping interests in a remarkable fashion. Unlike the Port of New York Authority which is a metropolitan agency and builds facilities throughout New York City and New Jersey, the San Francisco Port Commission is tied specifically to the city limits of San Francisco. The Port Commission therefore was in competition with other Bay Area ports, such as Oakland, for the new container-ships, L.A.S.H. vessels, and large bulk-commodity ships.* The Port Commission was thus committed to developing container ports on the southern San Francisco waterfront away from downtown. It owned waterfront land in other sections of the city and was restricted from granting direct subsidies to shippers to induce them to use Port facilities. The solution it hit upon was to create non-shipping developments on other parts of the waterfront and use the lease payments to build its container-ports. The Ferry Port Plaza proposal near the end of Market Street in downtown provided an 8-story megastructure on 20 acres of pilings. It would contain 1.45 million sq. ft. of office space, 250,000 sq. ft. of retail space flanking a 600-foot long glassed-in galleria, a 1200 room hotel and 2000 parking spaces. The Port

* From a regional point of view, Oakland with its large, flat waterfront areas was probably best suited for these new vessels. San Francisco was best suited to using its old finger piers for remaining conventional types of shipping.
Commission then solicited private developers for another massive project, this one to contain a project-financed passenger ship terminal. U.S. Steel accepted the proposition and outlined a development scheme with 1 million sq. ft. of office space in a 40-story tower, 500,000 sq. ft. in low-rise office buildings, 400,000 sq. ft. of retail space and a 26-story, 1000-room hotel. The proposal required an increase in the city zoning height limit from 85 feet (with 175 feet allowed for towers on a part of a site) up to 550 feet. After a lengthy and bitter political fight, which pitted environmentalists against development interests, the re-zoning was denied.

A rather more modest proposal was put forward in New Orleans. In the mid-1960's, the Port Authority there had constructed an International Trade Mart complex at the Mississippi River end of the main shopping street, Canal Street. Several years later, consultants hired to study the Vieux Carre suggested a residential-commercial development on the obsolescent, industrial riverfront itself. It would provide access from the Vieux Carre to the river and would provide a spillover area for hotel, residential and commercial development which was stimulated by and might otherwise threaten the Vieux Carre. The development would utilize land already largely in public ownership, would increase city property taxes from $52,000 to $490,000 a year, and would do so without the use of Federal Urban Renewal funds which were banned by the State Constitution. The project would have office and apartment towers at the Internal Trade Mart end. It would provide a low-rise residential community lining a riverfront promenade, with hotel, visitors' center, and parking garages, for the remainder of the waterfront.

Thus the expansion of the downtown core to the waterfront reflects the desire for waterfront views, the intense development pressures which large parcels of existing or newly-created land on the waterfront could satisfy more cheaply than hard-to-assemble, small, built-up parcels in
Figure 37: Proposed riverfront development as seen from the Mississippi River.

Figure 38: Overall view of the Vieux Carre riverfront development from the Bureau of Governmental Research, Plan and Program for the Preservation of the Vieux Carre.
the core, and the desire of city governments for high property tax returns or lease payments.

MIXED-USE HISTORIC PRESERVATION

There has also been a very different type of redevelopment, one for which there is no single name but whose style is conveyed by several prototypes: Fisherman's Wharf, Ghiradelli Square, South Street Seaport, and Lewis Wharf. These projects have several characteristics in common. They preserve, restore and re-use historic buildings and ships, and utilize the architectural and thematic motif for the entire project. Each therefore has its own distinctive character, style and symbolism—which may or may not be nautical—but all aim at a 'colorful', 'cosmopolitan', 'European' atmosphere. Major uses include small specialty shops and restaurants located around a public space that is actively used. Commercial recreation, entertainment, professionals' offices, apartments, condominiums, and marinas are also located in many of the developments. The view of the water enhances the restaurants and the public space. It is often possible for the visitor to get right down to the water's edge, where various craft may be docked. These developments, typically somewhat off-center from the downtown core, are usually privately sponsored on either a profit or non-profit basis. They may become minor or even major tourist attractions within the city.

While these projects are quite recent, they have some antecedents. Points where fishing fleets docked—both downtown and in outlying parts of the city—have often had seafood restaurants which got their fish right off the boats. The salty atmosphere and the unique, colorful activities attracted visitors to Fulton Fish Market, Sheepshead Bay and City Island in New York, to T Wharf and later even to the rather industrial Fish Pier area in Boston, and to Fisherman's Wharf in San Francisco. These areas retain some of the same qualities that drew 18th and 19th
Figure 4-4: Fisherman's Wharf, in the 1930's, from The Federal Writer's Project, San Francisco.
century visitors to the pre-industrial waterfront. In addition, bohemian and semi-bohemian districts have sometimes located along obsolescent stretches of waterfront. The pre-industrial and industrial buildings had 'character', low rents, and unusual spaces which might be converted into studios. Bohemian districts began to form in American cities during World War I, when the traditional outlet of Paris and the rest of Europe was effectively closed off. They located in a variety of areas some close to and some directly on waterfronts: T Wharf during World War I, West Greenwich Village and the Vieux Carre in the 1920's, North Beach in San Francisco in the late 1940's, and Fulton Ferry in Brooklyn in the 1970's. Consequently, when the Boston wharves were renovated in the last decade, the renovation displaced some artists and other residents who had been paying very low rents.

The Fisherman's Wharf, Ghiradelli Square, Cannery section on San Francisco's northern waterfront is probably the most famous prototype in the nation. Fisherman's Wharf with its fishing and small craft fleets and famous seafood restaurants and jazzed-up nautical atmosphere, attracted tourists and residents for many years and was therefore a potential strong point for nearby development to draw on. The wide view of San Francisco Bay, a nearby breakwater used as a fishing pier, and the terminus of an old cable-car line were all potential attractions. In the early 1950's, however, the area was generally run-down. Many of the old industrial and warehousing uses were obsolete. An effort to re-zone the upland blocks for high-rise housing was defeated by a coalition led by Karl Kortum. This coalition was intent on creating a maritime museum with square-rigged ships moored alongside and a sympathetic upland development. The defeat of re-zoning made restoration and re-use of the old low-rise Ghiradelli Chocolate Factory economically feasible, since the return on its investment did not have to compete with
Figure 4-5: Ghiradelli Square from the water. Source, Lawrence Halprin, Cities.
Figure 4-6: Ghiradelli Square, various views, from Lawrence Halprin, Cities.
that possible on high-rise, market-rate housing. The chocolate factory was renovated and new structures were added, fitting in architecturally with the rather fanciful old ones. A small raised plaza provided access to restaurants, shops, theaters, bookstores, galleries and displays. Ghiradelli became a popular place with visitors and San Franciscans. It became symbolic of elegant, very commercial, polished, 'cosmopolitan' redevelopment. This popular success spelled economic success as well. Restaurants were willing to pay rents up to $25 a sq. ft., while specialty shops would pay $18 to $24 a sq. ft.\(^2\) A similar project close by transformed an old brick canning plant and warehouse--The Cannery--into a complex of specialty shops; their plate glass windows contrast nicely with the brick exterior into which they are set. The maritime museum was created and an old sailing ship became an attraction for visitors. These ... projects spawned other restaurants and shops in the area and transformed the image of the cable car line from a decrepit older means of transportation into a special atmospheric detail and fun activity.

South Street Seaport in Lower Manhattan was sponsored by a non-profit group interested in protecting the early 19th century marginal street neighborhood from redevelopment and in providing an anchorage for a variety of older ships. This is a very large project, involving the acquisition and rehabilitation of six blocks of prime downtown Manhattan land. The total cost will come to some $69 million.\(^3\) Although donations and volunteer labor have been of assistance, the main source of capital in the early stages has come from the sale and transfer of development rights above the old buildings to office developers who own the adjoining blocks. The aim is to create an economically self-sustaining area; rents on restaurants, galleries, antique and craft shops and some apartments would support museum educational functions and displays mixed throughout the district. The most
Figures 4-7 and 4-8
South Street Seaport.
The diagram (left: source—South Street Reporter, October 1973) shows the relationship between the restored blocks and the anchorage. It also shows the elevated East River Drive which bisects the project, and the high-rise office buildings, partly created through transferred development rights, which adjoin it. The photograph of the ships in the anchorage is from the same source.

Ships in South Street (from top left): HOWARD; Hudson River steamer ALEXANDER HAMILTON (1923); McAllister tug MATHILDA (1899); Marine Ship Chandlery Barge (1919); MOSHULU, grain racer of 1804; AMBROSE lightship; WAVERTREE; ferry HART (1925).
Schooner PIONEER is nearly hidden by AMBROSE (only her masts show); steam lighter AQUA (1912) and two service barges were installed after this picture was taken.
Photograph courtesy Downtown-Lower Manhattan Association.
outstanding museum function is the anchorage. Ships docked at the old piers include a light-house ship, a fishing schooner, a ferry boat with an ice cream parlor aboard, one of the last large sailing ships, and a variety of visiting ships such as the Floating Foundation of Photography's barge. Admission is free to the pier and to all the ships except one or two for which restoration funds are needed. In the spring, summer and fall there are a variety of evening and weekend events, including poetry readings, square dances, folk and old maritime singing concerts, some of which charge admission. All these events and attractions draw visitors on weekends, holidays and evenings, and provide a refuge for Wall Street workers only a few blocks away. Seafood restaurants have thrived on this mixture of shifts. The closing and out-migration of most of the Fulton Fish Market eliminates some of the real gutsy flavor of the area and makes the redevelopment seem perhaps more 'precious' and more cut off from its roots. When plans for the Manhattan Landing complex were put forward in the early 1970's, they had to skirt around this enclave.

The restoration of Lewis Wharf on Boston's Atlantic Avenue waterfront was also privately sponsored, although in this case by an architect/developer. The early waterfront renewal designs by a variety of planners envisioned the elimination of several old wharves in order to re-create the large cove of earlier years. These plans were over-ruled by city authorities because of the financial costs and possible adverse political reaction to the massive clearance and new bulkheading, and the fact that the owner of Lewis Wharf was intent on preserving and rehabilitating it. The publicity issued for the new condominiums, shops and professional offices on Lewis Wharf suggests the intended appeal of the development:
Figure 4-9: Lewis Wharf, Boston. Condominiums atop shops and offices, with a marina alongside.
a cosmopolitan area resplendent with the charm and style of the beautiful old European port cities ... (a) village by the sea ... totally warm, elegant and positively unique ... 19th century waterfront flavor ... a place open to all--not an enclave protected from intrusion by guards and fences*. It will be a place vital and alive with all the activity we can bring to it--not a sterile series of housing towers where people are filed away at night. We hope to create on the Boston waterfront a New England sea village of a Greek island town, closely interrelated to its water environment and to the city beyond--dense and bustling, attractive and active.  

The restoration uses old cobblestones, antique railroad ties, recycled bricks and pine timbers and a 100 year-old anchor as an entrance motif. Restaurants, specialty shops, florists, galleries are all carefully selected to enhance the overall ambience and are located on the ground floor of the old granite warehouse. Professional offices are on the second floor with condominiums, selling from $40 to $140,000 on the upper stories. A marina is provided alongside with preferential docking for residents. The restoration will work together with the new Aquarium, other renovated wharves, warehouses and factories, Faneuil Hall, the restored Quincy Market, Haymarket and the popular North End Italian district to bring visitors to the downtown waterfront.

* This and subsequent references to "housing towers" are a comment on the nearby Harbor Towers development with which Lewis Wharf is competitive.
5. DOWNTOWN PLANNING AND THE WATERFRONT

To a large extent, planning for the downtown waterfront should be treated as part of the larger task of planning for downtown. This relationship should not be overlooked, for a number of reasons. The success or failure of waterfront development may well hinge on what happens in the adjacent core. People already downtown to work, shop and visit constitute the prime market of waterfront users. Most potential renters of space are likely to have links on the core and to draw on its daytime and nighttime population. Downtown land development pressures are likely to be major factors on the waterfront. Moreover, the waterfront can contribute to the viability of downtown. Most projects in recent years have essentially used the waterfront as a resource to aid the core—to provide highway access, parking lots, housing for executives, additional office space, or mixed-use 'liveliness'.

The historical, spatial and economic relationships all suggest that the two areas are inter-dependent. From a municipal policy point of view, I would argue, the downtown waterfront should be seen as potential asset for downtown. Other sections of the waterfront would have other priorities assigned to them—providing regional recreation, serving a local neighborhood, meeting a housing shortage. By serving downtown, that one section of the waterfront serves the most public and populated section of the metropolitan area.

Before suggesting the role that the downtown waterfront can play in strengthening downtown we should at least very briefly indicate the nature of the situation which the typical downtown faces.

THE PROBLEM OF DOWNTOWN

The decentralization of residences, industries, warehouses, offices and retailers in the last generation and the rise of cities which are not mono-nuclear raised questions about the purpose and future role
of downtown and stimulated efforts to strengthen downtown by countering these trends.

Much of the support for strengthening downtown is actually a commitment to sunk investments. Old stores and downtown property interests are naturally tied to the area. Radial transportation systems—especially mass transit—represent enormous investments focused on the core. The political boundaries between central cities and suburbs makes the vitality of downtown a local property tax revenue issue.

Although all types of economic activities have been decentralizing, office uses have tended to remain downtown. They rely heavily on the economies of agglomeration. Corporate headquarters, finance, banking, insurance, professional services and government operate in an almost medieval system of face-to-face linkages.¹ This suggests that the future role of downtown is as a center of administrative and control operations, although as these operations are increasingly routinized, and computerized and communications technology improves they may tend to decentralize.

The more general economic role of downtown has traditionally been as a center of highly specialized and inter-related enterprises. A downtown location has allowed a firm to draw on related firms in many fields—graphics, advertising, libraries, media, bankers, lawyers, brokers, accountants—so that it can better innovate and specialize in its own field. Not only do these firms need each other, they also need access to the maximum number of customers. Downtown has provided this central access point, both because rapid transit and bus routes converge on it, and because employees in all other downtown enterprises become customers in their off-hours. Downtowns have therefore been the home of new and extremely specialized activities.² As functions have become routinized and internalized within firms in a particular industry, they have tended to move out to less expensive locations.³
As a result, downtowns have come to play a symbolic role as centers and focal points of their civilizations. The retention of this symbolic center has become the ideological justification for saving downtown. Because it contains the highly specialized activities, it is the center of diversity and interest for the city and the region. It is the locus of government and cultural institutions. It is the historic heart, and civilization has traditionally had central places. It is the meeting place and the 'melting pot'--if there is any--for people of all classes and walks of life. A civilization without such centers, with space-less, place-less communications technology, with once public activities now taking place in the privacy of the home, such a civilization is difficult to adjust to or accept.

THE ROLE OF THE WATERFRONT

Downtown revitalization efforts have been based in vested interests and justified by the symbolic role of downtown. These efforts have made use of waterfronts in a variety of ways, depending on the particular diagnosis of the problem of downtown. Each of the solutions that we discuss below has been put forward in the past as the cure to the ills of downtown, whether the cure be access, liveliness or residents. I think that all of these solutions are partial and must be joined together if they are to be successful. The question then is how to follow a particular strategy without excluding the others--how to provide access without preventing new residences, for example. How can these different strategies be integrated? Which uses should go where? What parts of the waterfront should play a given role? And how can the waterfront be used in the most positive way in aiding downtown?
Highways

Doctor 'get-to-downtown' has prescribed improved access from all parts of the metropolitan area to the downtown core. New transit systems have been built--in San Francisco, Montreal, Toronto, Washington--with a radial orientation, and old systems have been extended in the same fashion, although the majority of destinations are no longer downtown. Major freeway systems have been geared to serve downtown. They have been built to ease access for commuters and to provide bypass routes for through traffic in order to alleviate congestion in the core. We have already noted why and how many of these highways were located on the downtown waterfront.

From a transportation point of view, doubts may be raised about the efficacy of these waterfront highways. Rather than countering the decentralizing influence of the automobile, these highways often seem to have opened up new suburban areas and speeded up the out-migration of people and jobs. Today's major traffic patterns are cross-town and around the center, not into it. Some central city governments have already come to the conclusion that new roads may decentralize rather than centralize development. The city of Boston no longer pressed for new highways during the Boston Transportation Planning Review in the early 1970's; like the other older cities we are examining, Boston has a relatively extensive mass transit system. It may be that improved mass transit, both fixed-rail systems and more flexible forms such as express buses are better ways of providing access to the core.

Whatever their transportation effects, highways have significant and generally negative impacts on their immediate surrounding environment. There are a variety of ways of designing and aligning these roads--elevated, at-grade, or depressed; on the shore or set
back from it—but no matter how they are designed, new Interstate highways are a massive element in the urban environment and are therefore very difficult to integrate successfully with surrounding land uses. Elevated highways, for example, create visual and psychological barriers to movement from upland to the water's edge. At-grade highways at the shoreline monopolize the water's edge and prevent its use for any other purpose than transportation—unless they are decked over. The at-grade highway in the park—such as the F.D.R. Drive in New York and Storrow Drive in Boston—requires pedestrian overpasses for access to the water side of the park; the change in grade, the distance between points of access, the sometimes limited space outboard of the road, and the noise and fumes from the highway all discourage use of the outboard section of the park. It has generally been argued that depressed highways have less detrimental effects, although these too may take land which would be better put to another use and create claustrophobic situations for drivers who lose any view of the city or the water. The accompanying table outlines the effects of different sorts of alignments.

We can set forth a number of criteria for thinking about waterfront highways near downtown. First are the situations where a highway, no matter what the alignment, should not be built. It should not be built where it passes a unique regional or national resource such as an historic district/major tourist attraction, and where the connection to the water is or could become crucial to the quality of the area. In such places, any alignment might threaten this connection or interfere with the character of the area. Examples include the Seine in Paris, the Vieux Carre riverfront in New Orleans, the Fisherman's Wharf area in San Francisco, Georgetown in Washington D.C.

Also, if two or more shorelines provide feasible alternate locations, the highway should be located on the shore with less present or potential recreational, residential, or commercial use of the water's edge.
Figure 5- |: The visual effect of an elevated highway. This is the Central Artery (Southeast Expressway) 1 block from the waterfront in downtown Boston.
Examples include the West Bank of the Mississippi rather than the Vieux Carre bank in New Orleans, Bayonne New Jersey's Hudson shore which is already used by heavy industry and has no public access to the water rather than the Newark Bay shore which is currently recreational and residential.\textsuperscript{5}

A second set of criteria has to do with the water's edge. Highways make only a negative use of the waterfront, locating there only because it is the least developed strip near downtown. Those land uses—such as shipping, recreation, residences, restaurants, marinas—which make positive use of the water's edge should be located there; this will make maximum use of the water resource in strengthening downtown. A highway should therefore not be located right on the water's edge, unless it is decked over. And if it is set back from the edge, the outboard area should be large enough to be used productively; it should not be a waste area.

Pedestrian access across the highway to the water or to new development on the water should be as easy and attractive as possible. This means continuous paths, with minimal changes in grade, detours or other obstructions. The visual barrier should be as minimal as possible.

Finally, the noise and visual effects of the highway on surrounding development should be minimized. This can be done by screening, depressing and/or covering the roadway.

Because waterfront highways are such massive elements, with their own need for width, access ramps, limited access, etc., it is very difficult to satisfy these criteria and to share waterfront space with other land uses.
### IMPLICATIONS OF ALTERNATIVE ALIGNMENTS

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<td><strong>VIEW OF THE WATER</strong></td>
<td>Minor problem</td>
<td>Promenade: excellent. Upland streets: problem due to upward slope</td>
<td>Major problem</td>
</tr>
<tr>
<td><strong>PEDESTRIAN ACCESS</strong></td>
<td>No access</td>
<td>Good access, but grade changes up to promenade-level.</td>
<td>Good physical access but a) visually unattractive path; b) ramps at interchanges.</td>
</tr>
<tr>
<td><strong>USE OF EDGE</strong></td>
<td>No use</td>
<td>Good potential for view and use above the water, not on water itself.</td>
<td>Good potential; somewhat inhibited by visual barrier</td>
</tr>
<tr>
<td><strong>NEW SPACE FOR DEVELOPMENT</strong></td>
<td>None</td>
<td>Some on air rights over highway, but expensive.</td>
<td>None.</td>
</tr>
<tr>
<td><strong>POLLLUTION</strong></td>
<td>Major</td>
<td>Minor</td>
<td>Major</td>
</tr>
</tbody>
</table>

* In addition to the specific combinations for each highway, a new highway can be combined with landfill to create new space on the outboard of the old bulkhead line.
<table>
<thead>
<tr>
<th>SET-BACK, AT-GRADE</th>
<th>SET-BACK, DEPRESSED</th>
<th>SET-BACK, DEPRESSED, DECKED-OVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outboard of road:</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>excellent. Upland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>streets: minor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requires overpass</td>
<td>Very good. Requires</td>
<td>Excellent. Provides frequent</td>
</tr>
<tr>
<td>or underpass,</td>
<td>frequent at-grade</td>
<td>at-grade crossings. Visual and</td>
</tr>
<tr>
<td>creating grade</td>
<td>crossings of the</td>
<td>noise pollution of highway is</td>
</tr>
<tr>
<td>changes.</td>
<td>highway below.</td>
<td>minimized.</td>
</tr>
<tr>
<td>Limited usefulness</td>
<td>Excellent</td>
<td>Excellent</td>
</tr>
<tr>
<td>due to access pro-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>blems and possible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>narrow width of ou-</td>
<td></td>
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</tr>
<tr>
<td>tboard area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allows for develop-</td>
<td>Allows for develope-</td>
<td>Similar to set-back</td>
</tr>
<tr>
<td>ment outboard of</td>
<td>ment outboard of</td>
<td>depressed; best possible</td>
</tr>
<tr>
<td>highway.</td>
<td>highway, and allows</td>
<td>integration.</td>
</tr>
<tr>
<td></td>
<td>easy integration of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>new development.</td>
<td></td>
</tr>
<tr>
<td>Major, affecting</td>
<td>Some</td>
<td>Minor</td>
</tr>
<tr>
<td>upland areas rather</td>
<td></td>
<td></td>
</tr>
<tr>
<td>than water's edge.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Parking

Doctor 'get-rid-of-the-cars' concluded that downtown was inhibited from serving as an enjoyable pedestrian area—and therefore, as anything else—by automobile traffic which had taken over the streets. While the previous solution dealt with transportation to downtown, this one focused on transportation and amenities within the downtown area. Elaborate pedestrian-vehicular separation schemes were proposed, with vertical separation in multi-level streets and joint development, and horizontal separation in pedestrian malls parallel to traffic arteries. The most famous and influential practitioner of this approach has been Victor Gruen, especially in his plan for Fort Worth Texas. Conceiving of downtown as a pedestrian fortress which had to be protected from the invading autos, he prescribed a 'wall' around downtown. Belt highways serving as bypasses for through traffic and great parking garages acting as collectors of downtown traffic, would halt the attacker at the gates, as it were.

As part of the frame of downtown, waterfronts were a natural site for such facilities. A major garage is planned for the South Station complex on Boston's Fort Point Channel. Plans for Lower Manhattan suggested that new waterfront development provide some of the parking for the core.

What is best about this approach is its emphasis on the quality of the downtown environment as the key variable in determining its future. Parking is in short supply in most downtown areas, and this approach would augment the supply. (One might argue on the other hand that by not building garages to meet demand, a city government would discourage auto traffic and encourage use of mass transit.)

Attempts to provide parking on the edge of downtown should be judged by two criteria. First, there are certain locations where it should not be a major land use. This includes the water's edge.
itself and pre-industrial waterfronts, where it would displace some of
the heritage and threaten the rest with its scale and entering/exiting
traffic. Industrial waterfront districts, including major rail yards,
might be appropriate locations, however. The old rail yards in West
Midtown Manhattan might be used for parking, with air rights development
overhead.

This raises the second set of issues—the how the parking is
provided and how it is integrated with surrounding development.
Parking, whether in lots or garages, creates large dead spaces in
the city. If located on the waterfront, it would reinforce the vacuum
effect of the city edge described in Chapter 7. This suggests that
parking should not therefore be provided in massive complexes, but
in smaller, well-distributed increments. It might also be directly
integrated into new development, whether this means retail space on
the ground floor of the garage as at the Harbor Towers parking garage,
or major new development over several levels of parking. A joint
development in Louisville, for example, took advantage of the natural
slope down to the Ohio River to create a multi-level parking garage
as a base for public and private development above it. In this way
the city expanded toward the river, created new space for development
and provided parking, all at the same time.
Offices

Because offices have been decentralizing less than other economic activities, city governments have focused on office building as the key to the future of downtown. Office development promises an increase in the municipal tax base at the same time that central cities find themselves in a fiscal squeeze. It requires few direct services (although it may put heavy strains on the city's infrastructure) and returns high revenues to the city treasury. Jobs are created during construction, then in the development, and as spin-off activities in the surrounding area to service each firm and its employees. Above all, it is felt, the new office buildings turn around the investment climate in the central city, by encouraging further office development, other downtown activities, and people who want to live close to their jobs.9

To allow and stimulate new office construction, cities have upped zoning limits, made special tax arrangements, and in some cases used their own power of eminent domain to assemble land. The waterfront has been the site for a number of these larger office developments, described in the preceding chapter. These waterfront sites of the 1960's and 1970's are the equivalent of the large edge of midtown sites in the nineteen twenties which were developed for the Empire State Building and Rockefeller Center in New York.10

There is no question that office building is the key dynamic engine of downtown growth. The danger is that it may come to dominate the area and either directly or indirectly displace many of the other uses of downtown which help make it a special and attractive environment. Jane Jacobs argues that:
a district perfectly calculated, it seems, to fill one function, whether work or any other, and with everything ostensibly necessary to that function, cannot actually provide what is necessary if it is confined to that one function.11

Thus the World Trade Center replaced many small, old buildings where low-overhead service and commercial enterprises already existed and might have located in the future. If commercial space is provided on the lower floors of new office buildings, the rents are high and only highly standardized or quick-turnover enterprises are able to afford the space. Rent is only one factor. The developer's desire for image and for ease of dealing with large clients also determines who will be allowed to rent the commercial space. Banks are often favored because they "pay high rent, take long leases, close early--no garbage, no rats. ... They're ideal tenants for prestige."12 In addition, new office development may increase property values in the surrounding blocks, again leading to a displacement of many of the older and smaller businesses of the area.13 And as David Rockefeller noted, what Lower Manhattan needed was more mixed uses, more service and commercial and cultural facilities, more diversity and interest even if only to hold and gain corporate headquarters and other major office tenants. Low buildings which provided visual relief next to the core may be sacrificed, particular specialties may be displaced, the cumulative attraction or links of a special district may be severed.

This suggests that new office development should not be in giant, single-use projects, but should rather be in small increments mixed with other uses. Cities can grant zoning bonuses for a variety of amenities, including retail space, theaters, arcades and similar facilities.
And it should be encouraged only in those areas where it will do the least damage, in terms of displacement. Again, the industrial waterfront or offshore development sites will be less detrimental than sites in pre-industrial waterfront districts and/or distinctive specialty areas within and around the downtown area.

**Apartments**

Market-rate apartments in or close to the core are supposed to strengthen downtown in a variety of ways. First, the resident population is supposed to add to the market for retail and entertainment facilities; as more of these are created, they will also serve downtown workers. The residential space is seen as a catalyst for encouraging mixed uses throughout downtown. Although the residents may be small in comparison to the number of daytime workers, they would presumably be spending a higher fraction of their income in the area; and if the apartments are really for managers and professionals, then these people will probably support a few particular uses in a significant way: restaurants and entertainment for example. This notion of residences as catalyst is applicable only to those downtowns where there are few of these facilities and where there is little close-in high income residential space; it would be most relevant to an area such as downtown Manhattan. Even in such an area, however, the new developments—if they are on the waterfront—may be quite isolated from the core. Convenience stores on-site may be geared to serve just residents of the site. Moreover, if there is little low-rent space available in the downtown area, there may not actually be any additional mixed use facilities resulting from new apartment development.
The second argument is that if executives, managers and professionals live as well as work in downtown, they will become more committed to its survival. If corporate headquarters relocate to the suburbs because the President and his top staff live there, then the logical answer is to provide attractive opportunities for them to live downtown and they will want to keep their headquarters there too.

In addition, luxury residential towers on the downtown waterfront may transform the image not only of the waterfront but of downtown in general, and thus affect the perspective of decision-makers who do not necessarily live in those units.

Many of these apartment complexes can be created without displacing any lower-income residents, if they are located on or near the waterfront. And presumably, some of the units that the upper-income tenants formerly occupied will now filter down to lower income groups. Waterfront housing—even though it is for the upper-middle and upper class—might therefore be advocated as a way of relieving the housing shortage in the city.

Also on the plus side, these projects have illustrated the potential for residential development on waterfronts—a potential which had gone unrealized for many years. Their tenants may become active constituents not only for downtown, but for waterfront values as well, as has happened at Harbor Towers in Boston.

We might, however, wish to channel or alter the nature of this residential development. As with earlier uses, very large-scale single-use developments on the waterfront have drawbacks. Residential environments are more delicate than other land uses, requiring considerable security and privacy. This is especially true of luxury residential projects, in today's society with its high crime-rates and tremendous fear of crime, particularly where they adjoin that part of the city with the most strangers. Therefore in design and management,
these residential areas may tend to become—implicitly or explicitly—private turfs which say 'keep out' to members of the general public. Large private turfs on the waterfront would cut this valuable city resource off from those who did not or could not afford to live there. Residential uses in small increments or mixed with other uses, as in a pre-industrial waterfront district, would add strength and vitality to the surrounding blocks, rather than create a whole separate part of the city, as at Battery Park City.

One might also question the public role in expending time and money, using its land and often its rights to water and its eminent domain powers to create housing for those who can choose where they wish to live anyway. In exchange for city land, assistance and/or subsidies, the city can require a mixture of rent-levels in the residential development. This has been the case at Battery Park City and again at Waterside. Close reading of these cases suggests that the City could have gotten far more low and moderate income units in return for its assistance and approvals than it actually did, and that where lower and upper-income tenants are placed in different buildings, the market-rate ones are built in the first phase and the subsidized units are subject to scaling down or perhaps never being built. Although the execution of these projects may not have been all that could be desired, one might still disagree with the New York City Planning Commission's position on housing subsidies and waterfront development: scarce housing subsidies should go into ghetto re-development projects. One might ask whether the same number of low-income tenants would not prefer, like anybody else, to live in high-quality, mixed-income communities, on the waterfront and close to downtown.
Mixed Use

We have already touched on the importance of mixed uses in our discussion of offices and apartments. Direct support of mixed-uses is still a further strategy for strengthening downtown. This approach observes that the way to strengthen downtown vis-a-vis suburban competition is to emphasize that which makes it unique. What can downtown offer?--highly specialized businesses, shops, services; unique cultural and entertainment facilities; historic and traditional activities and areas; comparison shopping; interesting pedestrian sections. This fine-grained, high-density, mixture of activities is not replicated anywhere else in the urban or suburban area. The way to revitalize downtown is therefore to strengthen those elements by preserving, encouraging or creating special areas and activities. The waterfront itself and the pre-industrial waterfront can be major assets in such a strategy.

In her critique of the early planning for Lower Manhattan, Jane Jacobs agrees with the diagnosis of Rockefeller and the Downtown-Lower Manhattan Association that the area needs more shopping facilities, restaurants and places of entertainment to make the area a more attractive working environment. Rather than try to encourage these indirectly, by providing residential complexes on the frame of downtown, she suggests acting directly to create major uses which will encourage workers to stay after 5 PM and draw visitors during the day, evening and weekends. Among such uses she suggests an aquarium—which had been transferred from Lower Manhattan to Coney Island amusement park area a few years before, "the last place it was needed"; a small Armenian residential neighborhood which had been, because of its unique stores and restaurants, a tourist attraction out of all proportion to its size, but had been dislocated by an
entrance to the Brooklyn Battery Tunnel; a great marine museum, providing a permanent anchorage for specimen and curiosity ships—which would, she predicted, later built as the South Street Seaport—which would, she predicted, generate new seafood restaurants nearby; embarkation points for pleasure voyages around Manhattan; a special branch of the public library; and inexpensive theater and opera. One might add to this a list of assets which do or could attract visitors and workers—Chinatown, the Battery, Pace College. These attractions, she argues, are not merely matters of atmosphere and ambience. They are essential if service and commercial facilities serving two shifts are to thrive in the area.

In the late 1960's, the Office of Midtown Planning in Manhattan established special zoning districts on somewhat similar principles. The old theater district near Times Square, in danger from new office development, was—they felt—a valuable resource for Midtown. It was one of the few low-rise old areas near the very dense core and as such provided visual relief. It contained a variety of specialized activities, ranging from printing to theater, and provided eating places and stores for Midtown workers. The legitimate theaters themselves, "Broadway", were an important asset of New York. They helped its image as cultural showcase, corporate headquarters and cosmopolitan capital of the United States. New offices which eliminated, without replacing them would be killing the goose that laid the golden egg. A special zoning district was proposed to encourage new theaters in office buildings, and a similar district was established on Fifth Avenue to encourage new retail facilities.

In analyzing this mixed-use approach, one must beware a certain popular appeal and ideological glibness. The cosmopolitan ideal and the notion of downtown as the center of culture and metropolis may imply
that these exciting areas are 'for all the people', that they attract and combine and expose to one another all the racial and ethnic and economic groups of the city. In some cases, an old and unique activity serving a traditionally lower-class clientele has come to attract higher-income people; such is the case with Haymarket, with many Chinatowns, with the Vieux Carre. In such places, where the original activities remain, it is possible for the classes to mingle and create a public democratic oasis in the city (although such areas may be threatened by increasing profitability, rents and 'staged authenticity' described in Chapter Six). Where these activities or residences no longer exist—as is the case on most portions of the downtown waterfront—they generally cannot be created. An image of a multi-class area and activity may be promoted, but the reality at best is usually a sophisticated upper-middle class enclave, such as the theater district, Fifth Avenue, Ghiradelli Square. These may indeed make for a more attractive and interesting downtown, but they are no more melting pots than any other of the areas and institutions of our great cities.

Recognizing its limits and its class bias, the mixed-use approach still seems like an extremely important way of revitalizing downtown because it gets to the heart of the problem—why people do or don't choose to come to downtown. Many of its elements and attractions are public and visible to the passer-by. It helps create a positive image of downtown and of the city as a whole.

It is the strategy which makes the most positive use of the pre-industrial waterfront, regarding its old buildings not as so much low-rent space but as a particular legacy to be capitalized on. It helps retain the waterfront as a special place, contributing something different to the adjacent core—not merely a site for 'more of the same'
core development. In the next chapter we explore the potential and some of the problems of treating the pre-industrial waterfront in this way.

CONCLUSIONS

Downtown waterfront districts can serve as an asset for strengthening downtown. Since a variety of kinds of uses and facilities are necessary to create a viable downtown, one must allocate space carefully between these uses. It should be allocated in such a way that the various facilities reinforce rather than detract from each other. The waterfront is itself a special asset and should be used to maximum advantage.

To do this, one must distinguish different sections of the downtown waterfront. Throughout this thesis we have noted the difference between the pre-industrial and industrial sections, in terms of their image, heritage, structures, and re-use potential. A second variable is whether a part of the district lies in the path of downtown office development. If it does, office space is likely to outbid any other type of use.

I would argue that the pre-industrial waterfront can be used to maximum advantage as a mixed-use area, emphasizing preservation, adding attractions, diversity and 'liveliness' to downtown. This is still true of such districts when they are in the path of office development; and this development is worth resisting in such areas.

The industrial waterfront can be used in a variety of ways, including major re-development. Where this occurs, however, there should not be large single-use projects. Land uses should be integrated and provided in small increments. And the water's edge itself, that most unique resource, should be carefully retained as a public area.
6. THE WATERFRONT AS A SPECIAL MIXED-USE AREA

In Chapter 4 we described three model mixed-use waterfront developments—Ghiradelli Square, South Street Seaport and Lewis Wharf. We have outlined two kinds of arguments for such redevelopment: 1) general values including continuity and creative use of resources, and 2) as the most effective use of the pre-industrial waterfront in a strategy to revitalize downtown. In this chapter, we suggest guidelines for this kind of development: 1) make special use of the water's edge, 2) have a public character, 3) preserve the buildings and traditions of the area, and 4) avoid 'staged authenticity' and the problems of success. By following these guidelines, a mixed-use development can take advantage of the historic legacy and the presence of water and open up these special resources to the public.

SPECIAL USE OF THE WATER'S EDGE

The water's edge should be used for specifically water-related activities. Fishing piers, boardwalks, promenades and other public spaces that can be used for relaxation, entertainment, public events and outdoor stalls take maximum advantage of the waterfront location. Because of pollution and lack of space, it is unusual to find swimming areas on downtown waterfronts, although this occurs at Tel Aviv for instance and would be a highly desirable use.

Boats and boat-related activities turn the water's edge into a dynamic and exciting place. They include—facilities for small craft; ferry and excursion boats; houseboats and boats with other uses aboard such as the ice cream parlor on the ferryboat at South Street Seaport, the sailing ship converted to a dormitory on the Stockholm waterfront, the floating restaurant on the Thames, and the floating flower-market on an Amsterdam canal; harbor craft such as tugs and fireboats; fishing boats; and historical and visiting ships. Extensive marinas
may pose problems however. They constitute an expropriation of the water by the highest-income group and may also limit public access to the water's edge in order to protect their private property. They are therefore best when distributed in small sections along a waterfront, adding color and activity but not wholly dominating it. These small increments may work counter to the economies of scale in operating large marinas.

PUBLIC CHARACTER

The water's edge and the pre-industrial waterfront district constitute a unique and valuable resource within the city. They should be open to and shared by the public in somewhat the same way that the pre-industrial waterfront was in fact the most public area of the city.

For the waterfront to be 'public' does not mean that it must be owned by the government. Rather, there are certain kinds of activities which draw residents, workers and visitors from surrounding districts and from the whole city. Shops, restaurants, entertainment and recreation and tourist facilities thrive on the public and should therefore be encouraged throughout the waterfront district. Residential, office and industrial uses tend to become self-contained spheres open only to their particular residents or workers and should therefore be allowed in small increments and/or on the upper floors of buildings such as Lewis Wharf where they are located atop ground-floor shops. A combination of all these land uses can make the area popular, draw visitors and customers, provide residents and workers who contribute activity, making the area—in the words of the South Street Seaport Museum:

a place to meet, to shop, to dine, a place for individuals to make their own discoveries. ... not just--the past, a curiosity for nostalgia seekers, but--a lively and necessary component of the modern city.\(^2\)
The area should combine these various private uses with non-commercial, non-profit uses and facilities. At South Street Seaport, the Museum facilities are dispersed throughout the district to encourage casual education. They include ships, displays, piers, historical and maritime museums, and historic buildings, generally open to visitors free of charge. Those facilities which would not be normally provided by market forces—such as an Aquarium—should be established by public or quasi-public organizations. Outdoor spaces should be available for public access throughout the district and to the water, and for special events such as festivals and concerts. The most important of these spaces is the water's edge itself. It should be open to the public—not just customers of a private establishment—free of charge, all day long. Various financial arrangements would allow profits on commercial tenants to pay for the creation, operation and maintenance of these public uses and spaces. A South Street type corporation and government tax allocation bonds are two ways of doing this.

There is another aspect to public character as well. The environment should be as visible and interesting to the passerby as possible. If the interior of the buildings is private and naturally restricts access, the exterior should be as revealing and stimulating to the public as possible. An industrial and post-industrial civilization tends to place its activities behind closed doors. Outsiders get to see only the final product or the public relations image of the activity, not the process itself. Thus, the loading and unloading of ships, once a highly visible activity, is now hidden in containers in closed-off domains of the city. But people have a psychological need and desire to see activities, especially esoteric, highly specialized ones. They go to downtown, on industrial plant tours and to craft shops because these places provide "educative environments". Old
Figure 6-1: Public event on the waterfront. One of the piers at South Street is being used for a bi-centennial celebration, and is attracting downtown workers on their lunch break. The waterfront becomes a public place in the heart of the city. 
(Source: New York Times, April 23, 1974)
waterfront districts contain many such environments. On the Atlantic Avenue waterfront, for example, a passerby can look in on:

- the lobster tanks seen through a window on Atlantic Avenue
- the seal pool outside the Aquarium
- the 19th century lettering and signs hanging or painted on many buildings in the district
- the butchers at work in Faneuil Hall and Haymarket
- the strangely shaped coal bins on Lincoln Wharf
- the tugs in the Fort Point Channel
- the fire-boat station
- the heavy fish smell near Fort Point Channel

Other activities and places seem interesting--such as the huge cold storage warehouses and power generating plants and the Coast Guard Station--but are largely closed off to the public, both physically and visually.

Perhaps the single most important kind of educative environment near the waterfront is the old produce market. We have noted in Chapter 3 that the actual movement of many of these markets to outlying sites in the city has usually been a policy decision by the city government, and by some of the major food distributors, to bring the markets up-to-date and to create cleared land for downtown development. The governmental decision overlooks the character, flavor, smell, color that these markets add to downtown. Wherever possible, at least the retail functions of these markets should be retained. This may require a separation of retailing from wholesaling. The butchers at Haymarket and Faneuil Hall converted years ago from wholesaling to retailing; this enabled them to remain when the various wholesale firms moved out of the area.6

In general, one should try to retain, expose and create as many unique environments as possible, including ground-floor shops, galleries, craft studios markets and water activities. Because old waterfront
Figures 6-2 and 6-3:
Educative environments on Boston's Atlantic Avenue waterfront. An antique shop on one of the wharves (left) and a garbage can outside a seafood restaurant on Atlantic Avenue. These are some of the evocative features that are visible to passers-by.
districts have been somewhat abandoned one must try to retain as many of these environments as one can, and, probably create new ones. This may lead to some of the problems of staged authenticity discussed below. Although this concentration on educative environments is largely a physical development strategy, much can be done in the way of trips along the water such as the Circle Line around Manhattan, the boat tours in Paris, Amsterdam and London, the excursions to isolated islands in Marseilles, all of which open up new vistas of the city, aspects of the waterfront and remote parts of the harbor. Guides to waterfront districts, including maps of points of interest, guidebooks, tour routes such as the Freedom trail, and actual guided tours to and within various buildings, all open up these closed worlds.

HISTORIC PRESERVATION

Waterfront redevelopment in a special mixed-use area should make creative use of the resources of the district. The legacy of the pre-industrial waterfront should be preserved and made functional once again.

Preservation efforts should focus on buildings (and activities) which
1) are especially adaptable to new uses, offering spaces and details the renovation of which is cheaper than their new construction;
2) have specific and outstanding architectural or historic value, such as the granite wharves in Boston;
3) evoke the past of the area, by vernacular architecture, exterior signs and details, old enterprises, and workaday objects. Most of the blocks of the South Street Seaport have this kind of value. August Heckscher notes the contribution of these individually anonymous buildings toward stirring our imagination:
But let us speak most fervently of those landmarks that are the work of unknown men, anonymous structures which served well in their time and by some happy chance have come down to us intact. They may be ugly by contemporary taste. But their wholeness can make them sweet. Touch these, and you destroy much that makes the city human. Keep them, and you keep the quality of life itself.

The importance of collections of these buildings and elements in a particular area is recognized by the designation of entire historic districts rather than individual landmarks; the whole district is presumed to have an overall character or 'tout ensemble' that is created by all these diverse elements; and 4) continue traditions. Carry-overs of the past which are still alive, or can be made to come alive, provide a strong connection to the past. Durgin-Park restaurant in one of the old Quincy Market buildings, some 150 years old, is a more vital reminder of the old Boston than the rest of the buildings in which it is located and for which $2 million is being spent on rehabilitation.

The key to historic preservation is finding a new use for the old building. For,

as long as a building doesn't have an economic or institutional base of its own, it is implicitly threatened by private development interests in the surrounding area.

The problem is that the buildings which are most worthy of preservation according to our 2nd, 3rd and 4th criteria above may not be the most usable and adaptable buildings. Few buildings can or should be preserved solely as museums. The aim is to find an enterprise or activity which can economically support and be responsible for the maintenance and, if needed, the renovation of the building. Such
might be attracted by the:

- low-cost and depreciated facilities; given the high cost of construction and materials, it may sometimes be cheaper to renovate than to build anew
- rich variety of facilities and spaces
- high-quality craftsmanship
- novelty and uniqueness, reflecting the style of a specific period which cannot be re-created today
- aura of the past, mellowed surfaces and patina of age
- ornateness and decoration
- high ceilings
- small-scale, low-rise construction

Above all, enterprises may want to participate in the cumulative drawing power of a whole waterfront mixed-use district. The experience of Ghiradelli, the Cannery, South Street and Lewis Wharf indicate the viability of such a development if it takes place on a large enough scale. Tenants include:

- restaurants, and other eating and drinking establishments
- bookstores
- activities in the arts: galleries, studios, craft shops, theaters and exhibitions
- specialty shops
- communications firms: advertising, graphics
- architects' and other professionals' offices
- headquarters of small organizations and institutions
- relatively wealthy residents, especially young professionals, and childless, middle-aged households* 10

These tenants are drawn by the prestige of the area, the visitors already there to attend other activities, and by a preference for an image associated with old buildings. (Architects and artists for exam-

* Residences in a mixed-use area may pose problems. As Karl Koch notes, the residents of Lewis Wharf "want it to be as quiet at 10 PM as it is out in the suburbs." The sensitivity of residential uses at night to noise and strangers may be critical in an area which (cont)
ple seem to prefer having offices and their own residences in old buildings).

Observation of several of these re-used buildings suggest that there are a number of techniques which make new uses look very well in old buildings:

- plate glass in stone or brick building, such as the Cannery or Old Yafo in Tel Aviv
- exposed materials including timber, brick and stone
- refinished surfaces
- bright paint, color, decorations
- new lighting
- whitewashed walls, such as the Old City Hall in Boston
- supergraphics
- outside paint and shutters
- a new-style door

These details are generally ways of brightening up an old building, to give an overall feeling of something very new encased in something quite old.

In making a renovation, the designer must serve as a bridge between the earlier period when the structure was created and the late 20th century. He must deal artistically with both and juxtapose them so that they enhance each other. 12

New additions must be very carefully designed to fit modern construction in with the old building. Critical elements include similarity of scale, roofline, ratio of apertures to facade, building materials and textures (required on new construction in Jerusalem, for example), and continuous facade (provision of arcades being required on new construction in the center of Bologna). 13

These are important elements in dealing with an addition to an individual building and in dealing with new construction in an historic district in general. Appropriate design controls for an entire district

* thrives on night-time activity and lots of visitors. The answer to this may be eventual self-selection of tenants who like such areas. 14
may be imposed by a landmarks preservation commission.

While the kind of building and district-wide preservation discussed here can be made to work, it may also pose certain kinds of problems.

THE PROBLEM OF SUCCESS

There's no success like failure
But failure's no success at all.

Bob Dylan

The very policy that we have suggested, of mixed-use preservation of the pre-industrial waterfront, may go too far and turn the area into an artificial version of itself. The government and private efforts--discussed in detail in Chapter 8--to begin to revitalize an old waterfront district may be so successful that the entire district 'takes off' and becomes purely a tourist attraction.

Thus Nantucket, a messy old fishing town, was transformed into a visitor's dream of a small colorful fishing harbor cleaned up and replete with marina. The Lower Manhattan Plan explained how new waterfront development could draw on the historic associations of the old waterfront:

One final possible use relates to the retail and restaurants anticipated in the Community Plaza at the end of Fulton Street. It should be feasible and desirable to continue a small and much more elegant fish-market activity geared to the seafood restaurants and specialty stores. In an atmosphere of drying nets and other maritime paraphernalia, and seafood sold from permanently anchored fishing boats, the community's shopping center can take on a unique flavor. 15
The Hyde Street Pier near Fisherman's Wharf was taken over as a State park. In the early 1960's, the pier had been re-used as a simple anchorage for and display of old sailing ships. The State attempted to 'jazz it up' with costumed actors playing historical roles. Admission price was raised from $.75 to $2.50 for this Disneyland/Williamsburg experience. Fortunately—from the point of view of Kortun and the early restorers—the enterprise which had been aimed at making money actually went broke and was discontinued.

Landlords, shop-owners and developers who recognize the potential of the area as a visitor attraction try to capitalize upon it by fixing up the buildings, leasing to shops and restaurants who cater to this trade, and thus increasing rents. These actors realize that visitors are attracted by the image of the pre-industrial waterfront. They then narrow and alter the diverse local activities and structures, the traditions, the various traits and essential uniqueness of the district to fit this popularized and pre-conceived image. One of the problems with the attractiveness of the pre-industrial waterfront is precisely that the image that visitors like is one cut-off from our own time. The romance and nostalgia depends on the distance of time and the isolation created by intervening events. These distant images are therefore always in danger of being unreal or fraudulent, like the permanently anchored fishing boats. The result of this commercial redevelopment: buildings are wholly re-constructed, pseudo-architecture is created purely for decoration, facades are restored to a single period in the district's history, anachronistic details—fish nets, new old-style lettering, anchors...—are added to lend color, and at an extreme, as at Hyde Street Pier, costumed actors perform long-gone customs and roles. This staged authenticity has been likened to the
(injection of) nitrates into hams to keep them pure pink, appetizing and desirable, that is, more hamlike... (or the) go-go girls who use silicone to make their breasts conform in size, shape and firmness to the characteristics of an ideal breast. 18

Daniel Boorstin, in his commentary on tourism, describes such areas with their enhanced local character:

These 'attractions' offer an elaborately contrived indirect experience, an artificial product to be consumed in the very place where the real thing is as free as air. ... the cultural mirages to be found at tourist oases everywhere. 19

By this kind of renovation and by charging higher rents, landlords eliminate whatever functional significance the area may have had, reduce the mix of uses and apparent age of buildings, and essentially bowdlerize the area of all its former messiness and surprises. Perhaps the extreme example of bowdlerization has not been on an American waterfront, but at Old Yafo, the old Arab city around which Tel Aviv was built. The area has been magnificently restored, its narrow streets, overhanging buildings, and terraces turned into an exclusive section for galleries, jewelry shops and a few cafes. The area draws on its suggestions of the old Arab quarter, the bazaar, the mysterious. But this atmosphere, in contrast to the old city of Jerusalem with its dark, dank, messy bazaars, poor children, beggars and aggressive pitchmen, has been wholly sanitized. Only the aura and the suggestion is left.

Government planners intent on preserving the character of a unique area may only aid this process. For no unique area has a single 'character'. It has a mix of aspects and images, only some of which will be selected and emphasized in any effort at preservation.
In a study of the Vieux Carre, surely one of the most distinctive urban districts in the United States, Marcou and O'Leary tried to identify the elements which made it special and which therefore should be preserved. They noted building groupings and block facades, rows of similar, well-related buildings whose visual quality depended not on a specific building but on the repetition of forms and the pattern of architectural details. They singled out many of these details, such as balconies and grillwork, along with particular landmark structures, unusual scenes and views, focal points and intense concentrations of particular activities. In this way they tried to determine which physical structures and land uses were and were not compatible with the 'tout ensemble' of the Vieux Carre.

But when they asked local residents and entrepreneurs what gave the area its appeal and identity, they received a variety of responses. Everyone agreed on historic Jackson Square. But what about the honky-tonk on Bourbon Street? Some said it was detrimental to the character of the area and its appeal to visitors, others that it contributed as much if not more to local color as the Cathedral. What about the narrow streets? Were they a negative feature of congestion or an aspect of old world charm? What about the lower-income residents, the blacks and Italians, who were being gradually displaced by young professionals and specialty shops. Some said this change was good for property values and made the area higher class. Others observed that "squalor and mystery is essential to the Vieux Carre" and that without it the area might become too much like a Hollywood set.* Thus the character of an area is determined by

* Apparently, no low-income residents were interviewed since no one expressed concern over their dislocation, only over the consequences for tourism.
identifying it. Its deliberate enhancement may only make it seem artificial.

The process of succession in newly popular waterfront districts may be natural and well-nigh inevitable, once the forces for re-use have set into motion. But, I feel, its effects are unfortunate. The diversity and quality of the area suffers, that which was really original and authentic in it is destroyed. Those who value old, authentic districts—the adventurous early discoverers and popularizers—lose in the long run. By finding a place they like, they transform it into a place they cannot afford and/or do not enjoy. They are like the restaurant reviewer for the New York Times who commented on the ambiguity of his role; to the effect that a particular restaurant was a pleasant, quiet, uncrowded and inexpensive place to eat and that precisely by writing this article the reviewer would help transform it into the opposite. To the extent that all visitors share to some degree the desire for authenticity, then they lose too, to that extent. Discoverers and visitors must therefore turn to other areas, but there may be a limited supply of such areas especially with a pre-industrial background. The failing districts of a city may provide new opportunities.

The more complex issues usually involve current residents and firms in an area, some of which will be displaced while others of whom—such as merchants and land-owners—may prosper. Since the old waterfront is generally not a residential area, this question is not posed primarily in terms of dislocation (whereas the dislocation issue should have been an important question in the Vieux Carre study.) While succession to higher rent-paying uses takes place throughout the city, it would seem especially inequitable for government policy to help oust lower-income tenants in historic districts in order to preserve the area's character and transform it into a preserve of the wealthy.
On purely economic grounds, it is harder to argue against this kind of succession. An objective decline in popularity, as the original attractions were destroyed or made ephemeral, would be a clear basis for government action to halt the process. I know of no historical evidence showing the decline of property values, rents, or popularity. On the contrary, one might hazard a guess that eventually as owners try to prevent rents from going down, they will lease to short-term tenants. Fast turnover food shops may replace cafes; low quality, high turnover goods will replace hand-made objects; and the district will come to look like 8th Street in Greenwich Village.

There are a number of ways to limit succession. Some of the development can be diverted to an adjoining area, to diffuse its impact and help spare the more architecturally or culturally significant area. The New Orleans riverfront development would divert tourist facility pressures form the Vieux Carre.

The functional significance of an area is its lifeblood, and creates the appeal of the district in the first place. This is why large cities have a greater capacity to absorb tourists, than do small towns.

In a large city, tourism is only a minor activity and tourists can therefore see routine aspects of life as it is really lived.

The functional significance of a newly popular area might therefore be retained as long as possible, as a counter-balance to tourists and visitors. Fulton Fish Market might have been kept alongside the South Street Seaport, instead of a minimal, "much more elegant" facility. The Seaport hopes to that at least some of the working stalls of the market will remain. The extreme commercialization of Fisherman's Wharf as a tourist attraction has inspired a counter-movement in San Francisco whose aim and strategy is to "Put the
fish back in Fisherman's Wharf. Butchers still occupy the basement and ground floor of Faneuil Hall, because of the terms of its dedication to the city; they prevent it from becoming one more tourist landmark-museum. The retention of some old market shops on the ground floor of the renovated Quincy Market, along with Haymarket stalls in adjoining streets, would prevent it from becoming a purely specialty-shop development. It might even enhance its attraction for shops and entertainment in the upper stories. But what does one do when an area has little functional significance? What other new uses can be attracted along with visitor activities? Residences in the old buildings may help insure some diversity and real life in the area. Or, on the other hand, how can the more recent history of the waterfront district--after it passed through the now attractive pre-industrial phase--be expressed and popularized. Perhaps remaining industrial uses and harbor activities can be retained and exposed to the public.

The area as a whole need not be restored to a single epoch or theme. The renovation of Quincy Market could have retained the additions to the roof-line of the past hundred years, rather than stripping them away to re-create the original roof-line. In South Street Seaport, the intention is that "buildings will be restored to reflect their voyages through time, with scars and changes."

Diverse and original uses could be encouraged, just as New York's Fifth Avenue zoning special district provides floor-area bonuses for ground-floor retail space. Perhaps some light-industrial zones might be retained.

Perhaps if we recognize that the process of succession is inevitable, the most appropriate strategy is to slow it down. Instant change would eliminate almost all the mixtures, functions, and
original atmosphere. Slow change would allow a variety of visitors to enjoy the area in the interim and--by always providing a mixture of old and new--insure continuing diversity in the area. The process of succession can be restricted by an organization which is concerned with the long-range future of the entire district, not just with 'milking' a particular building. The South Street Corporation is an example. Their support for a continuation of the fish market suggests their enlightened perspective on the district.\textsuperscript{28} If the public owns the buildings--as it does at Quincy Market--it can exercise considerable control over rent levels and which tenants leave and when. It could, for example, issue life-tenure leases to some of the old occupants. Other public roles might be to encourage retention of the old uses by favorable tax policy, to limit rehabilitation to one building at a time instead of a whole block or district, to have some sort of time-zoning on old uses, similar to 'holding' zones in the suburbs, to limit new development, and to not further increase access to the area--eg by not building parking facilities to keep up with demand. Where public actions are critical to spurring re-use, perhaps the public should avoid large-scale all-at-once interventions such as the re-alignment of Atlantic Avenue in favor of interventions which can be staged incrementally to impose limits on the forces for succession.\textsuperscript{29}

And, failing all these, one can keep opening up similar failed areas, increasing the supply of such districts, spreading some of the tourist pressure, and providing at any one point in time the different stages of succession--arrayed in different districts--each of which has its own patrons and afficionados.
In sum, waterfront renovation and preservation for mixed-use is a highly desirable way of utilizing pre-industrial waterfronts. But it must be controlled if the problems of failure and under-investment are not simply to be replaced by the problems of success and over-investment.
7. DESIGN GUIDELINES

Whatever type of development occurs on downtown waterfronts--mixed-use preservation or giant landfill--it should follow certain general design guidelines. These guidelines should aim at re-integrating the waterfront into the city by focusing new development on the water itself. For, as Gordon Cullen puts it in *Townscape*, the waterfront is the "natural line of force toward which the seaside town should focus." The development should turn its front toward the water, treat the water's edge as its most dramatic element, make use of the special design properties of water--reflections, flat plane, motion--emphasize the view of water which is so psychologically appealing and evocative, and recognize the water as a floor, a stage for activity atop and alongside it. The waterway then becomes the center of attention, not the periphery. In the case of a river, for example, there should not be unrelated designs for the two banks of a river as though they were separated by a barrier. Rather the river should be recognized as a potential seam within a river corridor which is to be treated as a single whole: the Hudson corridor, the Mississippi corridor. In short as a local resident advised waterfront planners in Cincinnati:

The main feature of this whole project is the river. The river is 'it' and the public landing is 'it'. Everything else is subordinate. Don't detract from the river.

In this chapter we outline three major criteria for waterfront development: 1) public access to the water's edge; 2) pedestrian connection from downtown to the waterfront; and 3) views from upland to the water. After discussing these, we suggest the advantages and disadvantages of 5 common ways of dealing with the urban waterfront: 1) the formal park; 2) the boulevard; 3) the pedestrian strip along the water's edge; 4) the non-uniform shoreline; and
5) the plaza on the water.

These guidelines and prototypes vary from one waterfront to another, depending on the width of the waterway, whether it is tidal, the local climate, and the scope of new development. We can, for example, distinguish waterways according to their width: the narrow river in the midst of the city, across which one could shout such as the Chicago River, or in Europe, the Arno, the Seine and the Tiber; the great river, say 1000 feet across, each bank visible but remote and inaccessible, such as the Hudson at New York, the Mississippi at New Orleans and St. Louis, the Delaware at Philadelphia, and Boston harbor between downtown and East Boston; and finally the one-sided waterfront on an ocean, great bay or lake, where only the horizon is visible, such as the Chicago lakefront. The need for upland connection to the rest of the city, the type and level of public access, the uniformity of the shoreline—guidelines affecting all of these vary with the width. Tidal waterways require special types of embankments and present opportunities for multi-level pedestrian walkway and step systems, several steps of which are covered at high-tide but are dry at low tide. A city with a cold winter climate needs extra shelter and smaller open spaces along the water than a city in a warmer climate. And re-use of an old pre-industrial waterfront really requires opportunistic planning, taking advantage of the unique configurations and resources of upland and shoreline. Major new development on the other hand offers a 'clean slate' to work with but raises important problems of tying the new development and its shoreline in with the rest of the city.
It should be clear that all these issues revolve around one major point: how to allow the public to share the benefits of the waterfront while providing (new and old) space for private development and for government-sponsored facilities such as sewage treatment plants which do not open the waterfront to the people. How can space be allocated and controlled so as to satisfy and integrate these twin needs.

PUBLIC ACCESS TO THE WATER'S EDGE

The berges of Paris are probably the most celebrated example of public access to the water's edge. They are riverside embankments originally used for loading and unloading the canal boats which plied back and forth from Paris to the deep-water port at Rouen. In the twentieth century, like shipping in many cities, these activities moved up and down-river. In some spots the berges have been replaced by expressways, but in others they remain as a unique pedestrian resource in the city. Pedestrians on the boulevard can look out over the river, or can descend the frequent stairways to the berges below which are only a foot or two above the Seine. The berges along the Ile de la Cite have become a mecca for young musicians, clerks on their lunch-hour, lovers, tourists, bums, amateur fishermen, walkers and thinkers, such as the late James Joyce who in the twilight of his life watched the "lemon-yellow" "dusky dusk" of Paris from beneath his favorite spot at the Ile.
Figure 7-1: The berges of Paris. from Mann, River in the City.
It is one thing to see the water from a distance—from a passing car, from a high office building, from a hill some blocks away, from across a rail yard or truck depot—but it is quite another to be right there. In *Townscape*, Cullen notes that the pedestrian should be able to get right up to the water’s edge. It is the immediacy of the contact which is important—the strong psychological contrast between land and water. The contrast creates a tension between the here, the man-made, the present and the remoteness, the infinity, the eternity of the water. This is the excitement of the Piazza San Marco in Venice where the plaza borders directly on the water. When one is in immediate contact with the water, one may also gain that extra feeling of being remote from the city behind—those on Paris’ berges feel removed from the city, while those on the boulevard are still part of it. The tension between land and water is enhanced where ledges and bridges overhang the water, especially if pedestrians can see the water below through cracks or slits. The overhang puts people ‘in jeopardy.’ The walkway across the Brooklyn Bridge, high above the East River, is probably the classic example.

The public should therefore have direct access to the water’s edge itself. A number of obstacles often prevent the immediate experience of the water. A private or public turf may be established: an apartment complex, a private marina, or a single-purpose public installation. There are several ways to allocate space between public access and these various uses. A public walkway or easement can be established right on the shore. This is usually
easier in major new construction, where it is a matter of setting back building sites to provide public space. The proposed controls for Manhattan Landing require a public esplanade 75 to 150 feet wide on the shoreline of the new platform.\(^7\) The San Francisco Bay Conservation Commission requires that new landfill projects provide public access to the water.\(^8\) Alternatively, one can recognize that the public does not need access to every inch of shoreline. Public and private spaces and structures can be integrated, creating a variety of sub-environments and lending activity and interest to the shoreline. This solution requires point access through or between various turfs. The mapped or actual public street can be extended right to the shore. This has been a way of providing access through Battery Park City and of assuring public access to the tip of privately-developed piers, such as Lewis Wharf. A third solution is to integrate public access and restricted private areas vertically. Public walks and outlooks can be on bridges over the private turf, as over a busy shipyard. Or public space can be created atop a building, as a public park is now being created above the vast public sewage treatment plant at 137th Street in Manhattan which extends out into the Hudson.\(^9\) In this case, as in
many others, the single-purpose public agency restricted the intrusion of activities and facilities not related to its mission. Another agency, such as a Parks Department, would have to be given control over the public open space.

We have noted how water puts people in a relaxed frame of mind. People like to daydream, loosen up, meditate, sunbathe, talk, fish, watch and generally spend a pleasant extended period by the water. Some places along or overlooking the water's edge should therefore provide places to sit. Given a chance, people will sit on low walls, the edge of embankments, logs, benches, and steps. Steps down to the water are an especially desirable solution. They take advantage of a sloping topography, deal with the variation in water level of tidal and flooding water bodies, and allow casual, informal, seating choices which do not threaten people's sense of personal space. The steps along the river in Zurich are used by tourists, workers and shoppers.10 There should also be places to stroll along the water's edge and indeed several of the prototype solutions such as the boulevard and continuous strip are designed in this way.
Although people like to spend extended periods of time looking out over the water, wind and weather conditions by the water's edge are unusually severe. The lack of protection means no shade in the summer and no protection from offshore winds in other months. Waterfronts in harsh climates, especially, need protective measures. A range of spaces should be provided to offer climatic protection. The proposed design guidelines for Manhattan Landing require an arcade on the building side of the pedestrian esplanade, while South Street Seaport proposes canopies. Indoor private spaces overlooking the water—cafes and restaurants—also have a role to play. Outdoor spaces on the water's edge, in cold climates, should not be so vast as to create wind-swept regions.

Finally, we should consider the level above the waterway at which public access should be provided. Criteria differ depending on the width of the water. Public access well above a great river or one-sided waterfront provides a commanding vista. But access high above a narrow
River may create a canyon effect and lose the connection to the water. The embankments above the Seine, for example, may be about as high up as one can be without losing the sense of the river. But even at one location, however, variations in level are desirable. Different people—and the same person at different points in time—prefer different relations to the water. Some like to be right down by the water itself with the sense of immediacy. Others like to be higher up, looking out over the water. A well-designed waterfront takes these preferences into account and takes maximum advantage of natural slopes down to the water. A well-designed waterfront area provides all these types of relations to the waterfront, as at Plymouth, England or on the Seine: a high promenade where one can overlook the waterway, steps down where one can walk and/or sit, a promenade right at the water's edge and the opportunity to dangle one's feet over or even into the water.

**Connection to Downtown**

The waterfront district should be connected to downtown. There should be a natural, easy, attractive path, inviting people. The waterfront district therefore has two major axes: one along the waterfront itself, and one to the waterfront. This connection can be encouraged by strengthening the waterfront as a destination, by providing an attractive route between downtown and the waterfront, and by overcoming the psychological and physical barriers along the way, the most notable of which are highways.
Strengthen the Destination

In *The Death and Life of Great American Cities*, Jane Jacobs describes the effect of city borders on adjoining areas and reasons that they should be strengthened and enhanced. Borders—formed by waterfronts, expressways, major institutions—form the edge of an area of 'ordinary city'. They become dead ends for most users of city streets. Because there is nowhere beyond to go to, there is less pedestrian traffic on streets leading to the border. Enterprises which need this incidental business do not prosper on those streets. Transit systems are frequently set well back from the border. A vacuum is created at the edge, which has a multiplier effect on the whole area several blocks in from the border.

Waterfronts are outside the ordinary city. While this may make them ideal locations for railroads and expressways, it makes them poor locations for land uses which depend on attracting people from the ordinary city.

The usual form of rescue for a decayed waterfront vacuum is to replace it with a park, which in turn becomes a border element—usually appallingly underused, as might be expected—and this moves the vacuum effect inland. ... With the temperature above ninety degrees, I was able to find in Corlears Hook Park, a landscaped breezy river-front oasis in Manhattan's heavily populated Lower East Side, just eighteen people, most of them lone, apparently indigent, men. The children were not there; no mother in her right mind would send a child in there alone ... A boat trip around Manhattan conveys the erroneous impression that here is a city composed largely of parkland— and almost devoid of inhabitants.

In short, land uses along the water's edge are likely to be isolated from the upland, 'ordinary' city. Railroads, expressways and similar barriers exacerbate this effect. What implications does this have for land use planning along the water-
Popular attractions should be located there. Activities which have a strong draw will do better than those which rely on 'impulse buying', so to speak. Jane Jacobs describes these activities as 'demand goods'. Magnificent views and handsome landscaping fail to operate as demand goods; maybe these 'should' but demonstrably they do not. They can work as adjuncts only. On the other hand, swimming operates as demand goods. So does fishing, especially if there is bait buying and boating along with it. ... So do carnivals or carnival-like activities. 15

The new development may have to be above a certain critical mass to overcome its isolation. This suggests a very strong image and focus for a mixed-use area, and a large-scale development on fill or platform not only to amortize the site preparation costs but to have sufficient generating power to draw tenants and people all the way from the central office district.

The isolation can also be overcome by extending the upland district toward the waterfront. As the intervening frame area of the CBD is redeveloped and its use by people increases, it can serve as a natural connection between the core and the waterfront. The New Orleans Riverfront development proposal in New Orleans would provide active 'ordinary city' between downtown and the Vieux Carre on the one hand, and the Mississippi on the other.

The key variables which determine how much one must strengthen the destination are the upland land uses, the obstacles in the way, the tightness of the market in the proposed land use, and its natural drawing power.
Path to the Waterfront

A pedestrian path should connect a major route in the core with a major attraction at the water's edge. Connections which are off-center at either end seem to start nowhere and lead nowhere. The Lower Manhattan Plan first ascertained which crosstown streets had subway stations and were major pedestrian routes. They proposed a continuation of these key streets across the highway and out to the community plaza on the waterfront cove.

The path can be enhanced by an array of activities and attractions along the route from downtown. Waterfront planners in Boston conceived of re-development partly in terms of the "Walk to the Sea", from downtown through Quincy Market, then under the Central Artery to Long Wharf. The colorful and kinetic plaza on John Street in Lower Manhattan provides a connection between Wall Street and the South Street Seaport.

The path would also be more effective if the waterfront destination was made visible, by a straight view corridor down the path, by overlooks, or by special signing and details along the way.

Overcoming Barriers

Clearly, one must minimize obstacles and barriers along the way. The most notable of these are waterfront highways which are usually one of two types: at-grade on the water's edge or else elevated and setback (originally in order to allow access to piers and ships).

The at-grade highway can be decked over with a promenade and/or air rights structures. The United Nations complex, several apartment houses and Carl Schurz Park are all built above portions of the East River Drive in New York. This solution provides a view of the water and allows pedestrians to reach the very edge of the
city--although not to have an immediate connection with the water below. It is only practical where land is very expensive and development pressures are intense. Even then, it is usually built in small segments above the roadway. If development is planned outboard of an at-grade highway, as at Waterside on the East River Drive, overpasses may be the obvious solution but usually do not work very well. Again they are best if they continue a major cross-town street, have easy and minimal grade changes, and appear wide and strong.

There are several ways of dealing with an elevated highway, which creates visual and psychological but not physical barriers to cross-movement. One can strive to make the underpass as luminous, attractive, and bright as possible. Buildings can be brought right up to the underpass on either side in order to minimize the 'dead spot'--or even continued through the underpass itself, as with shops. The shorter, and wider the underpass, the more light and airy it seems. A slit between the highway lanes would allow light to filter down. The pillars and girders could be painted a bright color, or as proposed at South Street, the highway could be partially masked by a colorful canopy.

Multi-level, joint developments 'over, under, around and through' the highway have been proposed, so that the highway is essentially encompassed in and hidden by 'ordinary city'. Plans for such developments look very fancy and have been put forward for Lower Manhattan and the Alaskan Way Viaduct in Seattle. One may wonder not only at the expense and coordination involved, but also whether the joint development itself--if it blocks views, and forces pedestrians to enter private space and change grade--might not be as much of a barrier to the casual pedestrian as the initial highway.
Figure 7-2: Decking over an at-grade highway. The East River Drive in New York has open space and apartment buildings atop it. Source: Rapuano The Freeway and The City.
Figure 7-3: Decking over an at-grade highway on the water's edge. A prototype suggested in Rapuano, Freeway and the City.
Figure 7-4: Canopies at South Street Seaport. These serve multiple purposes. They mask the elevated roadway above and to the left, they provide shelter if it rains, and they add color and brightness to the scene.
Another solution is the depression of the highway. This is the most elaborate and expensive of all, but some thought has been given to it in Boston, San Francisco and New York. A ten-year construction period, with consequent disruption to surrounding areas, and a complex maintenance-of-traffic scheme would be required. Such schemes are appealing at least in part because cities have rejected controversial new freeways and the Highway Trust Fund money is still waiting to be used. These extremely costly projects may therefore seem almost free to local officials, which is certainly their seductive aspect. This alternative means that drivers will get no view of the water. The demolition and reconstruction to Interstate standards (to receive Federal funds) may result in a taking of piers and structures alongside the old highway alignment. Leaders of the South Street Seaport observed that the existing East River Drive, for all its faults, at least spared their piers, while a new depressed highway would take up to $\frac{1}{3}$ of their length. In addition, a new depressed highway would probably be constructed partly to gain the potential air rights above it. Major air rights development on a strip above a depressed Central Artery in Boston might cut the waterfront off from downtown even more than the old highway did.

**Upland Views of the Water**

Successfully re-using the waterfront means re-establishing it as the front of the city and relating it in as many ways as possible to the rest of the city. This means that people in upland areas—on the street, in their offices and apartments—should be aware of the waterfront nearby. But the desirability of a waterfront view also means that shoreline builders will try to maximize development right on the water, creating a 'Chinese Wall' which
will block views from further upland. How can this tendency be overcome?

Envelope zoning is one method. Zoning regulations can prescribe building heights in such a way that lower buildings are closer to the water and higher buildings are further away. This maximizes the water view available at all distances from the water.

The narrow side of buildings can be turned to the water. The most damaging 'Chinese wall' effect is created by high-rise slabs which turn their wide side to the water. If slabs are to be built, regulations can require that they be turned perpendicular to the water's edge. Buildings behind the waterfront structure will now have a view of the water, while the waterfront tenants will at least have angular views of the water. If slab buildings have double-loaded corridors, they are naturally placed perpendicular to the water anyway. Or, towers can be built instead of slabs, with four relatively short sides.
Regulations can require the retention of a view corridor. Development on the waterfront is then prohibited on certain sites which provide continuous views from the upland area through the development out to the water's edge. Typically, major downtown street corridors are continued out to the water's edge. No buildings are allowed to block them. The downtown-waterfront axis would be the most critical corridor. In a hilly city, view corridors may be established from key hilltops and overlooks down to the water. Views might be protected from the hills of San Francisco, for example, or from the Carmel in Haifa. At an extreme, only isolated, widely separated towers might be allowed. The waterfront would then remain largely open and visible. Thus Harbor Towers does not block views of the Boston waterfront. It should be noted that unless the city is high above the water and slopes down to it, people on view corridor streets downtown will not in any event be able to see the water, although they may have more of a sense of the water if ships' masts, passenger liners, flags or other vertical features are concentrated at the terminus of a view corridor.
In general, people will merely get the sense of a break in development, of an 'air park' above the body of water. This will increase the image-ability and legibility of the city, but not evoke all the associations of seas and rivers.

**PROTOTYPES**

**The Formal Park**

The Chicago lakefront park system is often cited as one of the best waterfront solutions. By setting private development far back from the water's edge, it provides a large amount of open space for members of the public. The space can be used for active and passive recreation, which is an excellent use for waterfront sites. The great continuous park provides a powerful image of the city, one that has become the symbol of Chicago. It does not block views from upland, but rather enhances them.

Then why isn't this widely hailed prototype as widely copied in other cities? The main problem is one of space. While there may still be vacant waterfront land on the outskirts of a city, it is unusual to find much space on the downtown waterfront between existing development and the water's edge.

This means that the park space must be created by fill, and indeed Grant Park and Boston's park strip along the Charles River were created by filling in old mud flats. But these were at the time secondary waterways, not used for navigation, industry, or other intensive land uses. Creating a large waterfront park today on landfill extending from downtown will seem inordinately expensive to a city government—too expensive to create the landfill and not to have a revenue-generating use which will pay back the costs.

Therefore new open space on the water's edge downtown must usually be created in conjunction with new development which can pay for the space. The West Side Highway outboard alternative would create
a park strip along the water along with the highway and the space for private development.

Aside from questions of applicability and implementation, there are a few other problems with the large waterfront park. Although visually appealing, if it is very wide it may create something of a vacuum between downtown and the water. Its wide open spaces may accentuate the cold and wind during winter in a harsh climate. And it may come to be seen as a soft area for new highways, as increasing traffic on Chicago's Lakeshore Drive threatens cross-movement and the pleasant atmosphere within the park.\textsuperscript{22}

The Boulevard

Another common solution is the boulevard. It allocates space for private development—typically, residential—on one side, while allowing public space on the water side. The public space may range from a narrow embankment to a beach or park. Examples include the boulevards along the Seine, the Tiber, the north side of the Thames between Charing Cross and Waterloo, the streets along the canals in Amsterdam, Michigan Avenue in Chicago, and the bay fronts of Río de Janeiro and Havana. In some places, they derive from the time when the water's edge was used for quays, with docking parallel to the water, requiring a marginal street right along the waterway. They have also been built out into the water, to provide space and transportation between old development and the waterway, as the boulevards and embankments along the Seine were established by Napoleon. And they have been a
solution when the waterfront had never been fully developed but left as flats, beach, rocks or converted to a park.

The boulevard creates a pattern for development and redevelopment which can occur incrementally over many years without threatening the public space on the water. It also creates a strong and continuous image of the waterfront.

One danger is increasing auto traffic on the boulevard, threatening movement across it and the pleasantness of the public space. It is also better suited to residential (or hotel) uses, not to more intensive, commercial activities which may require a less linear and more compact space with at least two developed sides. As such, the boulevard may be somewhat more appropriate to outlying shorelines than to downtown.

On a wholly new development, the public may require an easement or strip along the edge but this might be for pedestrian rather than vehicular use, as discussed in the following section.

The Continuous Strip

When any citizen is aware that he has a choice of walking or cycling for any distance or sitting anywhere along the entire Chicago Lakefront, there is likely to occur an exciting impression of the city, whether or not he exercises that choice. 24

Because people like to walk along the waterfront and because the waterfront creates a visible, highly legible edge around the city, plans have called not only for point access to the water but also for a continuous walkway along the whole waterfront. A continuous walkway has several advantages. It gives the psychological impression of connection. It provides a traffic-free strip for bicycling and strolling considerable distances. It allows access to points which would otherwise be impenetrable to cross-movement, such as the water
side of residential, industrial, or highway uses, which in a city like Pittsburgh are required to be set back some 50 feet to allow a pedestrian strip. And it connects various points of interest within the waterfront district itself. The strip is relatively inexpensive to build and maintain.

But the long continuous walkway which is attractive and logical in brochures and on maps may not prove as attractive in practice. The image of continuity may not mean much to people each of whom uses the strip for only a short section of its length and would prefer a concentration of facilities at those points rather than a simple pathway. Perhaps short promenades, piers or breakwaters may provide strolling space near the water.

When private turfs are set back from the water's edge to allow a narrow strip, they may also inhibit its use. The strip may be so narrow that few activities are possible. The adjoining land use may be noisy and dirty. Access across the turf—eg across a highway running parallel—may be tortuous and discourage people from getting to the strip.

It is important to connect points of interest within the waterfront district but this does not mandate either a pedestrian connection nor one along the water's edge. In San Francisco, planners have suggested a jitney service (or perhaps an extension of the cable-car line) from Ghiradelli Square to Fisherman's Wharf and points further east. Connection by jitney, by boat, by cable-car are all quite attractive possibilities. If there is a pedestrian walkway, it need not always be at the water's edge, for the water is not the only point of interest in a waterfront district. In Boston for example, the sensible pedestrian connection is along Atlantic Avenue both because of its directness and its visual and
historic appeal as a great marginal street. From it, one gains occa-
sional glimpses of the water, has access to each of the wharves, passes
the fronts of most shops and restaurants. The waterfront strip is
especially difficult to establish on a non-uniform shoreline.
On the other hand, the place where a waterfront strip is appropriate
and needed is at Harbor Towers. This private complex blocks off the
end of Atlantic Avenue, first with its intimidating sentry house and then
with its fenced-off area along the water. Pedestrians are forced to
skirt all around the development if they are to reach the point—only
a few hundred feet away—where excursion boats leave from, or are to
go further to and across the Fort Point Channel. At Harbor Towers,
a public easement should have been part of the urban renewal disposition
controls for the site.

A continuous strip on the water's edge need not be applied in
every situation, although it is a way of gaining as much point access
as possible on a new landfill or platform development. If it is to
be appropriate and well-used, a strip should

begin somewhere and lead to something and feature
a variety of recreational uses and visual experi-
ences along the way. 27

Like pedestrian malls, waterfront strips may not work if they are not
related to the whole pedestrian circulation system. To avoid monotony,
the path should have changes in horizontal alignment, providing a
'sequence of revelations'—new views, closed passages, open vistas
and surprises of all types—and may work best on a narrow waterway
or concave shoreline, where the view changes relatively quickly.
The most successful strips, such as the Seine embankment and the Paseo
del Rio Riverwalk in San Antonio, integrate the strip with a variety
of complementary facilities and commercial and recreational development.
Figures 7-5 and 7-6: Where a continuous strip is needed, at the Harbor Towers end of Atlantic Avenue. Walking down the avenue, one first reaches the sentry house (above) which is intimidating, and then the fence on the waterfront itself which physically blocks off any continuous access.
The Non-Uniform Shoreline

One of the arguments for the outboard alignment of the West Side highway is that it will create 80 acres of public open space, primarily in a strip along the new shore, while the inboard alignment would create only 28 acres. What this argument neglects, however, is the type of space and facilities created and how they are likely to be used. The outboard alignment eliminates most of the--currently under-utilized--piers and creates a uniform shoreline. But a non-uniform shoreline, with coves, indentations, piers, and inlets may have special advantages.

An indented shoreline provides sheltered mooring and docking places for all types of craft, and therefore allows pleasure and commercial boating and boat-related activities.

An indented shoreline makes for a rich inter-action between land and water. It is much longer than a uniform shoreline, and people can relate to the water in a variety of ways. At the foot of the dock or cove, one sees the immediate enclosed body of water and also glimpses the greater waterway beyond. The pier thus becomes a form of 'netting', allowing one to see the remote through the near, as through a screen or filigree. The distant scene is brought forward to the viewer. This is especially desirable on a vast body of water, since it enables one to see objects close by across water. As one moves out along the cove or on the pier, one sees things at right-angles. The water becomes a slit in the
land. Boats are docked here. At the tip, one is thrust out into the water, surrounded by it. Here the immediacy and the tension of the water's edge is paramount. This is why people like to get to the very end of a wharf or to the very tip of a peninsula. Thus, the indented shoreline provides a rich and complex environment, each part of which has its own attractions and draws people on, challenging and surprising them.

Finally, where piers or docks still exist, they have a depth of history and associations which cannot be replicated.

On the other hand, there are economic pressures against a non-uniform shoreline. Each lineal foot of masonry embankment is quite expensive, so that a short—ie, uniform—shoreline is less expensive to build. Piers on piling, extending from the shore do not, of course, add as much to costs as extra embankment. In addition to construction costs, shoreline retention and siltation problems are worst on a non-uniform shoreline, and the coves originally proposed for Battery Park City may be eliminated from the plan for this reason. 30

There are a number of ways of providing a non-uniform shoreline. An old pier can be retained, or a new one built. In the West Greenwich Village of Manhattan, residents over the years have 'appropriated' the decaying Morton Street Pier as a public recreational facility, for fishing, strolling, harbor-watching. It is one of the most popular spots on the entire New York waterfront. An inboard alignment of the
West Side Highway would retain the Morton Street Pier and spare a number of other under-utilized piers which might be similarly re-captioned. Old masonry-edged piers require the least maintenance and have the longest useful life.

A breakwater can shelter an inlet. In San Francisco, a long masonry breakwater near Ghiradelli Square provides both a sheltered mooring area for small craft and a place to walk on and fish from. Where the water is of good quality, the sheltered area is ideal for swimming.

An artificial lagoon can be created. In Plymouth, England artificial lagoons have been created for young swimmers right next to the ocean beach for adults.

If land or platform is being extended into the water, then new coves can be created. Battery Park City's plans called for a landfill with several of these coves. At the foot of each there would be a public plaza, the terminus of a downtown pedes-
Figure 7-7: An inlet sheltered by a breakwater, suggested by Livingston and Blayney, *What To Do About The Waterfront*, for San Francisco.
Figure 7-8: An intricate, non-uniform shoreline, with plazas at the foot of docks, again from Livingston and Blayney, What to Do About the Waterfront?
Figure 7-9: Livingston and Blayney's suggestion for an artificial body of water surrounding the Ferry Building in San Francisco. This would provide a public plaza at the foot of Market Street.
Figure 7-10: A sketch of Livingston and Blayney's Ferry Building proposal.
trian route. Project buildings would surround the plaza and extend out toward the water on either side. The Lower Manhattan Plan and the Regional Plan Association both recognized the design advantages of this scheme, the great advantage of which was the public plaza on the water.

The Public Plaza

A public plaza can provide an urban, actively used public space on the water's edge. It has frequently been proposed for non-uniform shorelines, at the foot of a dock or cove. A proposal for the northern San Francisco waterfront suggested retention, rehabilitation and recreational use of a number of finger piers, and the creation of a pocket park between the piers. In such a tiny park people could sit, fish, and watch the activities around them. The Battery Park City notion of a plaza opening out to the water, the Boston waterfront proposal for a 4 to 8-acre park opening onto the 'Great Cove, and the San Francisco notion of a downtown plaza in front of the Ferry Building are all variations on this theme. The location at the foot of the water, the effect of netting, the sense of the water opening up in front, the surrounding activities, the proximity to downtown all make such sites ideal for very urban public open spaces, drawing downtown workers, shoppers and visitors.

Most of the proposals envision a public open space that is surrounded by development on three sides and open to water on the fourth. It is a focus for intense commercial/visitor uses in the surrounding
Figure 7-11: A waterfront plaza, proposed in Wallace, McHarg and Todd, The Lower Manhattan Plan.
buildings. The San Francisco plans envisioned each of these shoreline plazas as the focus for a particular activity district—one for Ghirardelli, one for Fisherman's Wharf, etc. In this way, the development surrounding the plaza is still related to and open to the water but is also set back to create a public space which in turn enhances the development. The proposal by the North End Waterfront Citizens Committee in Boston includes many of these features: a "landscaped pedestrian esplanade at the water's edge"; a public facility for "excursion and ferry boat docking, public landing and marina"; integrated "building heights around the open space to reinforce the historic impact of Boston's once thriving waterfront" and to define the space architecturally; arcades in adjoining buildings, and commercial activity to add vitality; exclusion of automobiles; and a variety of types of open space and recreational areas, including quiet sitting areas, active areas, space for open air live theater and pushcarts and stalls.33

By applying the relevant prototypes and following the major design criteria, one can insure that a downtown waterfront district is indeed turned toward the water and is an asset for the city and the metropolitan area.
8. IMPLEMENTATION STRATEGIES I: THE PUBLIC ROLE

We have now identified the key values that government should strive to protect and enhance on downtown waterfronts. These include public access to, and use of, the water's edge, upland views of the water, and re-use of existing resources.

How are these to be achieved? What legal tools, and, more especially, what organizational and institutional arrangements are best suited to meeting these goals?

After a brief introduction to the public role in development, we consider the legal tools appropriate to assure public access and provide upland views. The main thrust of the discussion then turns to the organizational framework for redeveloping industrial waterfronts. In Chapter 9, Implementation Strategies II, we deal with the public and private arrangements for creating and sustaining a special mixed-use area on a pre-industrial waterfront. The problems of risk, management, and scale differ enormously between major redevelopment and mixed-use restoration.

One should assess these public implementation devices from a variety of perspectives. What is it good for? When and where is it relevant and useful? To what extent is it likely to be effective? What are its costs and byproducts? How easy would it be to adopt? And, once adopted, how easy would it be to administer and enforce over the years?
THE PUBLIC ROLE

In a private market economy, implementation centers on the relationship between the public and private sectors. The public must stake out its claims, its particular areas of concern. It must devise ways to control, encourage or bypass market forces in order to achieve its ends. The public has a variety of powers to draw on: the police power to regulate private action; the power of eminent domain to take private land; the ability to build and operate all sorts of facilities; and the power of taxation, both as a way of paying for its operations and of selectively influencing the behavior of those who are taxed.

These powers are subject to legal, fiscal, and political limits, however. Legally, public actions must serve a (ever-broadening concept of) public purpose, must not be arbitrary or discriminatory, and cannot take private property without compensation. Fiscally, local governments are limited by the ability and willingness of residents to pay taxes and investors to buy bonds, and by the often severe budgetary and debt restrictions imposed by State Constitutions and statutes. And of course politically, government decisions are essentially a set of prizes, controlled by those in power, and limited by the effective opposition of pluralist interests. Their implementation and management essentially depend on the co-operation and often the active support of private interests. Thus, there are serious limits on the extent to which local government can control or compete with the market, can determine that a specific land use shall occur in a given location if there is no market for it there, can allocate scarce resources to one area of the city, can act independently of other levels of government, or can discriminate in favor of or against one particular group.
These limitations have two implications for government policy. First, local government must narrow its area of interest, focusing on those issues which are most critical. Thus in its design control proposal for Battery Park City, the Office of Lower Manhattan Development concentrated on the interface between the general public's use of the project area and those areas of the development which we regard as the proper domain of the private sector. The public... sharply limits the boundaries of its interest... The design constraints... do not affect building form, dimension or placement, except where these attributes are seen as affecting the public interest, rather they create public limits within which the private sector may improvise.2

On downtown waterfronts public policy should focus on public access to the edge; upland views; re-use of existing unique resources; public attractions, activities and events; necessary infra-structure such as transportation systems, land-fill, shoreline retention, utilities and public services; and water quality (a vast subject beyond the scope of this thesis).

Second, local government should strive to gain maximum leverage for its own investment of money, agency personnel, and political credit. This can be done by supporting those actors in the private sector who tend to create a 'desirable waterfront'. They include:

- city residents, tourists and downtown workers as consumers of water vistas, summer breezes, fishing, swimming, activities and events to watch and take part in, seafood, boating, and a unique historic area of the city to stroll through.

- bona fide water-oriented functions: shipping, industry, fishing.
- specialty retailing, restaurants, boat tours and concessions, commercial recreation and entertainment.
- people who want to live by the water.
- historic preservation and conservation groups.

Government can support and thus exploit these forces by: not destroying them; providing space for activities to take place in; improving access to and publicity for the area; compensating for the workings of the real estate market; and creating established interests, alliances and agencies whose overriding aim is to protect and enhance the waterfront.

Public implementation can therefore be seen as the relationship between public and private action. The most effective role for government is to aid and utilize those private forces which, with some assistance, can create and continue to be responsible for a waterfront meeting certain public criteria.

**PROVIDING PUBLIC ACCESS TO THE WATER'S EDGE**

The provision of public access requires special attention by government. Left to themselves, private developers and most special-purpose public agencies would ignore the need for public access because it imposes responsibilities and burdens unrelated to their raison d'être. Public access involves problems of

- insurance, liability for injuries sustained by member of the public.
- maintenance, cleaning up litter and upkeep on facilities.
- intrusion. The value of certain uses, such as luxury residences depends on the exclusion of strangers. Shorefront restaurants and cafes can gain a monopolistic position if members of the public wishing to be by the water must purchase something from them. Strangers may interfere with or pose a danger to the property of private and public organizations.
- money. In most cases, no money is to be made by the provision and maintenance of public access. As for public agencies, budgetary allocations are made for an agency's prime mission, and not for peripheral and incidental functions that they perform.

The city government must therefore take on itself these burdens of insurance, maintenance, protection and financing. It must assign the responsibility either to an agency whose normal mission includes public access and recreation, such as the parks department, or to an agency whose mission invariably includes public access such as a traffic department which presides over public streets. Where public access is essential to a land use along the water—stores, boat concessions, cafes—then the government can count on some private assistance and cooperation.

From this point of view, most of the water's edge should essentially be seen as a form of public property, available to the public. A variety of devices can be used to assert this public claim, such as ordinary or mapped streets, public easements, public ownership, setback requirements, construction of public facilities. Here we will simply sketch out a few situations and the devices appropriate to them.

The wharves on the Atlantic Avenue waterfront are private property. To maintain public access onto and along them, the City mapped the pavement along the edge of the pier as a public street. An actual or mapped street can also be used to control access from the interior to the waterfront. In its controls for
Battery Park City, the Office of Lower Manhattan Development proposed an extension of several of the existing grid's streets into and through the new development. In Chicago and San Francisco, small dead-end waterfront parks are placed at the end of interior streets; thus no private development can block off the water.

A public easement along the water's edge and/or a mandatory setback requirement is an inexpensive way for the City to protect the water's edge. A public easement along the water at Harbor Towers should have been one of the disposition controls for the parcel.

New development out into the water makes it easy for the City to require a public way parallel to the new water's edge. In San Francisco, the Bay Conservation and Development Commission requires public access as a pre-condition for any offshore development. The controls for Manhattan Landing require a 75-foot setback from the water to create a public esplanade. The outboard highway scheme being considered by the West Side Highway Project would make the strip along the edge into a public park. In Paris, Napoleon added quays along the Seine, thus inserting public space between private development and the river. This last scheme suggests the advantages of public ownership of the edge, with improvements including several levels of walkways, steps and sitting areas.

In general, the most enduring and effective system is to establish a pattern along the waterfront. It would define public space on the water and provide space for private developments in increments along this public space. Examples: the one-sided boulevard, typically with apartment buildings inboard and sidewalks along the water's edge, as one finds in Paris and Rome; the Paseo del Rio Riverwalk in San Antonio; the old marginal street with its increments of finger piers; the boardwalk in a commercial recreation
Figure 8–1: The creation of the quays and berges on the Seine. from Burnham, Plan of Chicago.

1785

1830

1885

XV. TRANSFORMATION OF THE BANKS OF THE SEINE IN PARIS.
Chronological views of the Petit Pont and Petit Chatelet, showing the evolution of the boulevards.
area, where shops, stands and amusements get their business from strollers as at Coney Island, Atlantic City or Revere Beach; or the public esplanade proposed for the West Side Highway Project with its parcels of new land for private development. These patterns make for an effective and continuous interface of public and private and can be created and maintained over long periods of time, but many of them eliminate the possibility for an intricate and non-uniform shoreline.

**UPLAND VIEWS OF THE WATER**

Upland views can be protected by envelope zoning, protected views from hilltops, setbacks so that the narrow side of a building faces the water, and extension of the street grid to the waterfront. These are relatively straightforward zoning devices which should be adopted in a comprehensive waterfront district special zoning. District regulations can set specific standards and particular sight-lines which are to be preserved, and provide a legal and planning basis for the restrictions.

As with other restrictions, the problem lies in their adoption and continued enforcement. Developers seeking to maximize the water view in their own buildings may oppose such restrictions. The original plan for Battery Park City provided for low buildings near the water and high buildings further back. Over the years, the program changed toward building more high rises near the river. Although the Office of Lower Manhattan Development's proposed controls do set standards on visual corridors and maintain views at street level, they ignore the need for envelope zoning and the protection of views from at least some interior buildings, by not setting any overall density or bulk controls. Upland, New York City's desire for large-scale development led it to demap streets in order to create
superblocks for the World Trade Center, the Fisher Brothers' building just to the south and the Chase Manhattan Plaza. The result: very few visual corridors still penetrate from Broadway to the Hudson River which is only a few hundred yards away. In San Francisco where views from hilltops are of major concern, the City Planning Department even considered granting density bonuses to those downtown developers whose buildings did not block specific views. This was not adopted for technical reasons, since a building that spares one hill's view might necessarily block another's, but the implication is that the city owes a certain density to developers and will pay for any restrictions by giving them additional density. While this quid pro quo may make some sense in the case of street-level amenities such as arcades which are not rendered valueless by the extra density, it seems paradoxical in the case of protecting views.

The use of mapped and extended streets, on the other hand, is easier to adopt as it establishes a pattern within which development may then occur.

REDEVELOPMENT OF THE INDUSTRIAL WATERFRONT

Public involvement in large-scale redevelopment projects on industrial waterfronts and on bodies of water may go far beyond police power restrictions on public access or upland views. The government can venture into the development process itself, dealing with land assembly, site preparation, financing and/or management, usually in conjunction with private developers. This type of arrangement is most appropriate in very large developments with high infra-structure and site preparation costs, and where the public already owns the land or development rights. This is the typical situation when one is building on landfill, platform or huge parcels such as railroad yards.
Most of the large-scale waterfront projects that we have discussed are joint public-private ventures. Battery Park City was created by a State-established authority which leases the underwater rights from New York City, raises funds from the sale of its bonds to landfill and prepare the site, and then sub-leases specific parcels to private developers to build on. San Francisco's Port Commission attempted to use the same method to create platforms for private development, the lease payments from which would finance new shipping facilities. In Louisville, the public development authority built a vast parking garage on the slope down to the Ohio River, and then leased air rights above the garage to private developers and public agencies.

The public gets involved in these projects in order to get private market forces to do something they would otherwise not do. There are two kinds of motivations. The first is simply to get land developed which would otherwise not be developed, in order to increase the tax base/provide lease payments, spur the local economy and revitalize downtown. The second is to control the product of the development, either to increase its quality and amenities or to lower the rents that it charges; for, in return for public land assembly and/or inexpensive financing, the public gains far more leverage than it could exercise through zoning or other purely negative regulatory devices.

Encouraging Development

The downtown waterfront typically offers some of the largest and best-located sites for private development in a metropolitan area. Why is public intervention needed merely to insure that development takes place? Indivisibilities among development parcels—the need for
coordinated acquisition and development, and for common infra-structure
--make it risky and difficult for conventional private redevelopment
to occur.

Public intervention is sometimes needed in the site
acquisition and assembly process. Where city or state-owned land is
at issue, either upland or on tidelands, the public is automatically
involved. In the case of New York City, for example, the City is
prevented by State law from entering into leases of more than 50 years
to a private party. Since this is not a sufficient period, from the
point of view of lenders, to provide funds for a platform development
over city-owned tidelands, a private developer must take advantage
of the State Redevelopment Companies Law. This allows 99-year
leases but requires that the development serve a public purpose
and that the developer be restricted to a 6% profit. This results,
as in the case of the Waterside development on the East River,
in major public involvement in the project. In addition to publicly-
owned land, eminent domain may be the most effective way of acquiring
properties in multiple ownership or the ownership of utilities such
as railroads which own vast tracts along the water; this is especially
ture if one is trying to build on very large sites.

Public intervention in site preparation and provision of
infra-structure is even more important. Industrial waterfront sites
frequently involve: a) large existing parcels such as rail yards;
b) large areas with many parcels which must be coordinated; c) major
site preparation costs for landfill, platforms, shoreline retention
and extension of all city utilities, services and facilities. These
indivisibilities of site size and infra-structure investments pose
major problems for private developers. Few can operate on the scale
required: can undertake the major planning involved; have sufficient
equity or are able to impress major sources of capital; can afford to make major site preparation investments at the beginning and then build revenue-producing structures in stages over a number of years. Essentially, there are large risks associated with scale. There is risk to the lender who does not want to put a large proportion of his assets in a single project. There is risk to the developer (and lender) who does not want to make enormous investments before any buildings are completed and prove marketable. And there are major cash-flow problems in the early stages.

The public can act as financial intermediary. Its credit or the suggestion of its credit can be used to reduce risk and obtain financing at low interest rates for initial expenditures. It can carry and service these debts in the early years before sale or lease to private sub-developers, begins to pay back its investment.

In this way, the public, often through a development corporation, assumes many of the risks and costs, to create situations in which private developers can then reap profits. This is the rather strange public role in a private market economy.

The public can act at a variety of points along the development process to help it along. The first point is site acquisition. Both urban renewal authorities and redevelopment corporations have eminent domain powers. (Other public development bodies, especially those concerned with lowering rent levels, such as State housing finance agency or Federal 236 program, are not involved in site acquisition. They wait for the developer to come to them with a site).

The second point is site preparation. Urban renewal and development corporations are heavily involved in this stage. They take a large site and transform it into marketable parcels for
sale or lease to developers.

The third point is control over the private development. This ranges from general disposition controls in urban renewal to the New York State Urban Development Corporation's hiring of the developer's architect. Future control is exercised by contract, easement or retention of ownership. In the latter case, as at Battery Park City or Welfare Island, the development corporation retains major control and is responsible for management. Since it is the major investor/lender, the corporation is likely to be a concerned and dedicated manager.

Finally, the public is involved in mortgage financing for the private developer. Under urban renewal, this role was not played by the redevelopment authority, but the private developer was eligible for FHA section 220 mortgage guarantees. This made the renewal program contingent on FHA decisions, and often resulted in lengthy delays. Development corporations and housing finance agencies, on the other hand, use their bond powers to provide financing for the private developer. This is obtained at a lower interest rate, higher loan to value ratio, and longer pay-back period than a developer could hope to receive from a conventional lender. The lower rate is due to the fact that interest on bonds of municipalities and States is not taxable by the Federal government, and that the local and State government, although not officially pledged to their fulfilment, lend their aura to the bonds, making them appear relatively riskless investments. The below market-rate financing gives the public lender great leverage both to attract developers to a project and to control their output.
Subsidy

Through a variety of mechanisms, a government agency can reduce private development costs, and thus subsidize the rents that are charged. On waterfront projects this has largely been done only to assure the marketability of the space, not to make it available to low or moderate income tenants. In some cases, as at Waterside, the provision of government approvals and indirect subsidies was contingent on the developer creating some Federally-subsidized 221d3 or 236 buildings on the site.

Land cost is subsidized under urban renewal by write-down procedures, with the Federal government picking up 2/3 of the cost of the write-down. Where publicly-owned land is to be leased, the rental could be lowered by the City. Again in the case of Waterside, New York City asked only for a combined lease and property tax payment of $400,000, whereas conventional property tax assessments and land leases would have totalled well over $1 million annually.\(^1\)

Site preparation costs are subsidized by Federal government funds under urban renewal, and by the use of municipal and authority low-rate bonds for development corporations. Federal Interstate Highway funds may be tapped to subsidize landfill along the highway for private development.

And, low-rate financing, accelerated depreciation allowances, and specially low municipal property tax assessments are other forms of subsidy.

Administration

An advantage of the development corporation approach is that it is self-financing. A city can create a special authority but need not pledge its credit directly to the authority. The authority can
float bonds and use revenues to repay them without infringing on the city's ordinary tax revenues or debt limit.

Experience of these projects suggests that it is most efficient when a single agency has control over all steps in the process. When several agencies and/or levels of government are involved, the problems of coordination, timing, and differing constituencies and standards increase geometrically. An agency which runs numerous projects may have some advantages over an agency created to deal with a single site. Its credit and access to the capital markets is usually superior. The overhead involved can be amortized over a number of projects. It can theoretically use profits from some projects to subsidize amenities and/or low rentals on others.

Costs and Byproducts

The very advantages of a special authority are also its drawbacks. These authorities are relatively immune from outside influence, partly because their officers have secure tenure but more importantly because they have their own fiscal powers and are therefore not subject to the bargains and concessions of the budgetary allocation process.15

The attempt to insulate these authorities from political and other pressures does not mean that they are wholly isolated, but rather that they are subject to different types of pressure. One of the most powerful comes from current and potential bondholders. Because an authority has no taxing powers, it must rely on its credit standing to raise funds. This creates pressure toward secure investments, high returns (often covering estimated costs by at least 50%), large reserves, and no new investments unless they are very profitable. This determines the kind of projects that the authority is likely to undertake, and may result in many convention centers, sports arenas and other profitable investments.
A second pressure is internal. An authority must either borrow to expand or become a caretaker. Many independent authorities such as the San Francisco Port Commission and the Port of New York Authority have become empire-builders.

Along with these pressures, there are still political limits on the action of authorities. The danger of losing statutory support for its powers will often deter an agency from certain courses of action. The political volatility of UDC's program to integrate Westchester resulted in its cancellation.

The result of this relative political immunity and these specific pressures is that such authorities tend to maximize development within a narrow range of values—which include the agency's mission and its finances, but which exclude external effects. Relative autonomy means relative unresponsiveness. Some agencies such as UDC have been relatively sensitive in considering a range of impacts, while others have been markedly insensitive. But such differences seem due more to the personality and training of the director, than to any generalizable, institutional differences.

If one were to set up a redevelopment corporation for a waterfront, it might best be created by the municipality rather than the State so that it would be more locally responsive. It would work at several major sites and its overall development decision would be subject to outside (e.g., City Council) approval at one point early in the process so that no unnecessary delays would occur thereafter. Within these constraints, a development corporation might be effective in redeveloping the industrial waterfront.
9. IMPLEMENTATION STRATEGIES II: THE SPECIAL MIXED-USE AREA

A number of key actions are required if an old, marginally used pre-industrial waterfront is to be transformed into a special mixed-use area, of the type described in Chapter Six. The existing environment must be protected from demolition and redevelopment. Preservation and restoration must then begin, requiring entrepreneurial skill, adequate early financing, and controls over development within the district.

**PROTECTING THE EXISTING ENVIRONMENT**

Low-rise old pre-industrial waterfront districts near downtown may be subject to major development pressures. The district may be in the path of downtown office development. Even if it is not, downtown-related uses, such as apartment buildings or even parking garages may bid for the land. India Wharf buildings in Boston were torn down to make way for a parking lot. Development pressures discourage mixed-use preservation. The possibility of selling to a developer or building on one's own property in a profitable and intensive way would insure that few owners would ever consider rehabilitation. It was only after a re-zoning amendment to allow high-rise apartments on the San Francisco waterfront was defeated that anyone--owner or developer--would consider a Ghiradelli Square or Cannery as the highest and best use of their property. Moreover, these other uses may bid up the value of the land so high that ardent preservationists cannot afford it. Office developers for example pushed the price of land at South Street, not far from Wall Street, up to $100 a sq. ft., bringing into question the feasibility of restoration.
The threat of redevelopment does not occur in every situation or every city, of course. It is most likely to occur in the largest cities during upswings in the business cycle and office construction building. Where it does occur, however, it is a formidable threat to the possibility of mixed-use preservation.

In the real estate market, a site will not be purchased and re-developed unless the new use will be significantly more profitable than the existing use of the property. The return on investment must exceed the cost of purchasing the site, clearing and preparing it, and constructing new structures at current costs. The differential in profitability is due to increased density of the same use (for example, twice as many square feet of office space on the same parcel of land) and/or to higher rent per square foot because the property is in a higher use (e.g., residential v. wholesaling) or because new space commands a premium over relatively obsolescent old space.3

The differential in profitability is a function of the demand for space in the marketplace. It is subject to governmental regulation, which can restrict the density, use, bulk, and height of any new development. These governmental regulations are exercised ordinarily by zoning and in special cases by landmark or historic district designation and by disposition controls in an urban renewal area. The theoretical answer to the threat of redevelopment is therefore very simple: government can decrease the differential in profitability and thus discourage re-development of the pre-industrial waterfront.

But in practice, this restrictive approach is difficult to adopt and maintain. Land use control regulations are not a neutral tool of city planning, but an extremely valuable prize in local politics. Property-owners, tenants, neighbors, devel-
opers, and other interested parties all compete to determine what the land use controls in a district shall be. In this political competition, local officials—especially in large cities—often see land use controls as a resource that they can use to gain or repay campaign contributions from developers. In areas where local opposition to redevelopment is strong and well-organized, officials may see their advantage in halting it. But in areas such as downtown, where there is little residential opposition and where land values are highest, developers usually have their way. Over time, developers come to take zoning changes in their favor for granted, as serving to insure them in the face of rising costs, a constant, high return on equity ... 4

And it is increases in zoning that offer the highest return to investors and speculators, since they are able to transform property purchased at a low price on the basis of current zoning to developments with large amounts of rentable space allowed by the changed zoning. This is known as 'creating value'.

In addition to the direct political/financial inducements of developers, officials are also convinced by what they see to be the benefits of new development. These benefits include increases in the city's tax base, employment both during construction and after the development is completed, apartments for the middle and upper classes that the city is intent on keeping within its boundaries, and the general prospects of city growth and improvement in the investment climate in the city. Thus, developers will argue the advantages of growth:

Any reduction in the basic floor-area-ratio of 15 would render uneconomic any new building in our great commercial centers, and the growth of the areas would be ended. 5
Growth—channelled and controlled, of course, but still growth—is taken as the purpose of the zoning ordinance:

The elimination in the differential between commercial and residential F.A.R.'s (would make it) impossible to proceed with the orderly development intended by the zoning resolution.

Compared to these prospects and arguments, the potential desirability of a re-used low-rise waterfront district on the edge of downtown, where development pressures are usually greatest, is likely to be seen as somewhat marginal. This is true no matter what type of land use control is involved. For example, historic buildings or districts in the path of downtown re-development are not likely to be designated and protected as landmarks. In Chicago, for example, landmarks preservation has not dented downtown denizens where it counts. The city has not hesitated to acknowledge landmarks—except when they interfered with Loop redevelopment.

In New York too,

historic districts in the path of powerful business interests have been left undesignated by the Landmarks Preservation Commission.

In the case of zoning, a comprehensive history of zoning in the Manhattan Central Business District concluded that if development pressures in an area are strong, then zoning may shape and alter development, but will not stop it. Variances on a case-by-case basis will whittle away overly restrictive zoning. It is far more difficult to try to down-zone (or reduce allowable density in a district). Efforts to reduce allowable density in Manhattan office districts took 30 years, and even then had limited success. For zoning, like government budgets and assistance programs are 'sticky downward'. The strength of vested interests who are used
to a certain level of assistance or official permission will insure that most changes are up rather than down.

Because it difficult—but still essential—to restrict redevelopment, one must carefully fashion strategies which make it easier to adopt and maintain restrictions. For example, it is easier for government to resist increases in zoning than to actually decrease the zoning. Refusal to approve zoning amendments, grant tax abatements on new construction or use eminent domain powers to aid in site assembly are all effective ways by which governments can discourage major re-development. Another way to make restrictions easier to adopt is to provide some compensation for some owners and developers. Thus a down-zoning amendment might provide a grace period before it goes into effect; those who have built first in an area may support more restrictive zoning to assure them of a monopoly position. This path of course might endanger the most valuable structures in the district. Compensation might also mean opening up another area to development at the same time that one was closing off the pre-industrial waterfront. In New Orleans, planners recommended a riverfront development to relieve pressures on the Vieux Carre. Zoning in an adjacent area might be increased while it was being decreased in the target area.

These are all procedural steps. The most effective strategy is to have local interests in an area who are committed to its preservation and who will oppose redevelopment. Vested interests in an area will be 'sticky downward' as it were against demolition and redevelopment. The best active support will come from those who are living in an area or who are making money there currently, whether they be tourist establishments, restaurants, industries, shop-owners or initial re-developers. Creating and encouraging these interests is the most effective defense against
wholesale change. For example, a neighborhood whose residents are politically organized against redevelopment will frequently succeed. Since there are usually few residents on the waterfront this may suggest getting residents into the area as quickly as possible. In the case of historic district designation, unrestored districts are not likely to be designated because no local interests are fighting for designation and because courts might be reluctant to do so. Courts have generally upheld landmark and district controls on the basis of 1) maintaining property values within a district, and 2) promoting tourism in the city. It is unlikely that they would uphold restrictions on the use or demolition of unrestored buildings which did not have a present economic role.

Creating local interests in an old waterfront district is therefore a matter of careful timing. The Boston waterfront urban renewal process illustrates this situation. In the early stages of renewal planning, the City was very dependent on the wishes of interested developers. It was easier to come up with a plan than to find a willing developer. If someone already owned a major site in the area, he would be listened to very carefully. On the southern edge of the waterfront area, Theodore Berenson owned Central and India Wharves. The planners had slated a marina, hotel-motel and some luxury apartments for this site. But Berenson was not interested in running a marina and felt that hotel-motels required too much equity financing. Luxury apartments seemed more attractive. To make the most value on his site, he pushed the Boston Redevelopment Authority to increase the number of units to be allowed there from 800 to 1500. Although waterfront planners wanted to avoid such a large-scale, dominant high-rise development, there were no major interests to support
them. The result: two 40-story towers, where the planners had hoped for nothing taller than 20 stories.

Shortly thereafter, Karl Koch purchased Lewis Wharf partly to rehabilitate the old granite buildings and partly to gain riparian rights for a large-scale offshore development on pilings. Koch went ahead with the rehabilitation, still keeping his long-range proposal in mind. But the planners stood firm against this proposal. They felt that high-rise offshore development in the very center of the waterfront would eliminate the view and sense of open water; more important, they could successfully prevent development, because the waterfront area development process was already under way. As time went on, Koch found that the rehabilitated apartments and stores promised to do very well. Although the rate of return would not match that on the high-rise development, it was still substantial. As the years went by, and Koch fought for and succeeded with his rehabilitation project, his view of the waterfront began to change. He saw the general potential of maritime-commercial-low rise residential development, with boats tied up at docks to create a whole nautical atmosphere. He became a vested interest against the further destruction of waterfront views and old buildings, which contributed to the historic and nautical image of the area.

In time, the residents of these two developments—Berenson's Harbor Towers and Koch's Lewis Wharf—became ardent defenders of these same values. They enjoyed the old waterfront atmosphere and fought the B.R.A. plan of offices and hotel, arguing instead for more restoration and re-use of a cleared 8-acre parcel as a large waterfront park. Early development,
in short, helped create local interests who would oppose intrusions threatening the perceived quality of the environment.

The problem thus becomes one of timing. How to ward off the threat of redevelopment while getting residents and shops into the area who will become the most effective opponents of redevelopment? The protection of the existing environment may therefore be intimately bound up with starting the restoration process in the district.

Before we turn to the question of 'starting up' the special mixed-use area, we should make mention of two devices sometimes suggested for protecting historic areas from adverse development. These are development rights transfers and listing on the National Register of Historic Places.

**Development Rights Transfers**

A city could permit the transfer of development rights over old low-rise structures which have been designated as valuable or historic buildings to other sites in the downtown area. The great attraction of this scheme is that it provides large amounts of money to owners if they keep the old buildings. It can therefore be used to provide substantial funds for preservationists such as the South Street Seaport Corporation.

As for preventing redevelopment however, the city is merely permitting a transfer to take place. Whether it does depends on the attitude of the land-owner toward preservation and the potential value of his property. One might therefore suggest that zoning limits on an historic area be kept low to discourage redevelopment and make acquisition by a preservationist group less expensive. Once this had occurred, the city could raise the zoning to give the preservationist organization more development rights to sell.
The other attraction of development rights transfers is that they seem to allow the City to have its cake and eat it too. The City can retain the old lively historic district and still get the tax revenues and jobs from new development. It avoids the dilemma of either destroying the area or preventing growth. It is, however, impossible to get something for nothing—unless someone else or somewhere else is paying. In this case, development rights transfers are purely a reaction to other government-sponsored regulations. They are a way of dealing with zoning much higher than existing buildings in one area and zoning limits which are set below market demand in another, receiving district. But presumably there is some reason for the current zoning limits in the receiving district. Density is likely to be added precisely where it is already highest, putting strains on the city's transportation system and utilities. By making the assembly of adjacent parcels less critical, it will speed up the development process in the receiving area. The property taxes of each new square foot of space are visible and attractive, but the incremental costs are usually long-term and relatively hidden. Moreover the current zoning limit may be tolerable only because it is not expected to be fully used on all sites. With transfers, the city may become more fully built-up to the total limit; and perhaps the limit, in that case, ought really to be lower.

**The National Register**

A pre-industrial waterfront can be registered as an historic place with the National Trust on Historic Preservation. This has no effect on private redevelopment but would influence any Federal action in the area, including Interstate highways.
urban renewal, Federal mortgage financing, and perhaps even permits or statutory amendments which enable construction in navigable waterways.

Any Federal action with a significant effect on a registered district is subject to mandatory review procedures at the State and Federal level. The Federal agency must try to find some feasible alternative to the action or else try to modify it so as to limit any adverse effect. If no compromise can be reached, the matter goes to the Advisory Council of the National Trust. Although its recommendations are officially advisory, the Council can serve as an effective political forum for opposition to the action and can help cancel such projects as the Riverfront Expressway adjoining the Vieux Carre in New Orleans.

Registration thus creates potential frictions, delays and resistances to Federal or Federally-aided projects which might threaten a pre-industrial waterfront, and might therefore be a useful protective step. To be effective, registration requires a local watchdog group to keep track of and oppose Federal actions—in the same way that municipal land use controls require local vested interests who will support them.19

RE-USING THE AREA

Cultural Attitudes

Because of America's social, political and economic history, its values have generally stressed new construction and starting fresh rather than maintenance and rehabilitation. The lone voices crying in this wilderness have generally been those of historians, history-minded patriotic groups, and bohem-
ians who flock to picturesque old neighborhoods. The idea of renovating old waterfront structures came to fruition around 1960, perhaps spurred on by architects and architectural critics of the late 1950's who, like Ada Louise Huxtable, stressed the beauty and value not only of old "historic" buildings but also of early American industrial architecture—mills, factories, warehouses, wharves. The idea spread slowly from city to city, as local civic, architectural, planning and historical groups and developers picked it up. It was only within such an environment that mixed-use waterfront renovation was possible, both to oppose major development in such areas and to spur developer interest in re-using them. Moreover, the popular and commercial success of a re-use project in one city would spur imitators in other cities. When the sponsors of South Street Seaport were arguing with skeptical officials and bankers, they could point to the success of Ghiradelli Square. Given supportive cultural attitudes, a whole series of other ingredients are necessary to make a specific project successful. Transforming an old and neglected section entails very high risks and therefore requires entrepreneurial daring, sources of capital and mechanisms to control and thus limit risks within the district.

The Entrepreneur

Development in a market economy tends to proceed in two ways or, often, stages. There are entrepreneurs who open up virgin territory by inventing or importing a new marketing device. They are drawn by the prospects of very high returns on equity. They create value by transforming property to a new use. The high returns compensate them for the risks of being first and of trying something novel. Perhaps in addi-
tion, such entrepreneurs are attracted by the psychological and prestige rewards of being an adventurer and creator. On the other hand, many developers and almost all lenders prefer the other type of development, which is the imitation of successful projects. They try to minimize risk by duplicating a formula of success and investing in an area where other investment has paid off. Thus, in the early 1960's, the first office buildings in downtown Boston since the 1920's had to be financed largely from equity sources outside Boston. It was only when these rented up quickly that lenders were anxious to invest in other office projects downtown.

Mixed-use, pre-industrial waterfront development requires the first type of actor—an entrepreneur, a risk-taker, an enthusiast. Successful mixed-use developments were all created by such people, some on the public and some on the private side. Karl Kortum who was a moving force on San Francisco's northern waterfront was committed to a vision. He dreamed of square-riggers tied up once again on his city's waterfront. He began his effort by squatting in an old WPA-built bathhouse which he hoped to convert to a maritime museum. William Roth, the developer who undertook Ghiradelli, tried a wholly new sort of development. Peter Stanford, President of the South Street Seaport Corporation is a self-confessed "fanatic". Committed to a vision of a lively historic district and anchorage in Manhattan, he disregarded the conventional wisdom which said that his ideas were foolhardy. And even a public-sponsored and controlled development program, such as the Boston waterfront renewal project depended on unusual risk-taking private developers such as Koch to make the project a reality.
Whether this kind of leadership comes from government, from a non-profit organization or from the ranks of developers—and it is best for a given project if it comes from all three—it has to be there. Otherwise conventional wisdom will have its way and nothing will be done.

The initial development within the district—the pier at South Street, Lewis Wharf, Ghiradelli—then hopefully is so successful in gaining publicity, drawing visitors and/or renting space, that other commercial interests will be anxious to repeat its success throughout the waterfront district.

**Financing**

Over time, a special mixed-use area can become an economically viable, self-sustaining district. Once rent levels increase to a certain point, further investment will flow into the area, as it did in San Francisco after Ghiradelli worked out. The problem is initial financing to go with the entrepreneur.

Conservative lenders are concerned about the novel approach, the surrounding area and what is happening to it, and—often—the small-scale, limited equity nature of the applicants for funds. When Koch wanted to buy and convert an old warehouse on Atlantic Avenue in 1960, commercial lenders "told him the time was not yet ripe to invest in the waterfront area", and forced him to temporarily abandon the idea.²³

Government can aid in the search for capital. The public, for example, can get into the lending process. It can establish a revolving fund, at low or no interest rates for owners who wish to upgrade their property. This is likely to be most effective if individual properties are quite small
and the rehabilitation of a number of properties is likely to create the bandwagon which lenders will then be eager to jump on. Public loan guarantors, such as FHA mortgage insurance, can be almost as effective. The restoration of Lewis Wharf depended on FHA-insured financing under section 220 for renewal areas. If public lenders and insurers are not to become conservative investment managers themselves, and thus preclude the very types of projects that need their support, the role of the public in accepting special risks must be clear. Revolving funds should be seen as a grant to a whole area to be administered wisely but not niggardly; perhaps it should be regarded as a leaking fund. Otherwise the bureaucrat becomes totally risk-averse since he has everything to suffer from losses on risky projects but cannot gain benefits from their profits.

Government grants are also possible. The Department of the Interior, for example, provides 50% matching grants to State governments to be distributed for the acquisition and restoration of buildings on the National Register. Although this program has been under-funded, it provides another good reason for registering a pre-industrial waterfront district.

As we have mentioned, the single most attractive and plentiful source of funds at the beginning of a project may be the sale and transfer of development rights. We have already explored some of the problems with this approach. Here, let us briefly recount how development rights transfers became the major source of funds for South Street Seaport.

While plans for an urban renewal/historic preservation program in the South Street area were being formulated, Atlas-McGrath, major office developers began to eye the same blocks as an extension of the Wall Street office district. They offered about $30 more per sq. ft. of land than the Seaport could afford--
since even under urban renewal the city was merely to use eminent domain to acquire the property which would then be bought at full value by the Seaport whose admission charges and sale/lease of rehabilitated structures would have to cover this amount. Atlas-McGrath probably hoped that their large investment and ownership of major parcels would be accepted by the city as a fait accompli; the restoration plan would be ignored or sharply altered. But despite their arguments for office development on the site, the Landmarks Preservation Commission, heeding the City's role in establishing a renewal area for preservation, designated the area as an historic district.

Thus the structures had been protected. But how was the Seaport to get the funds for acquisition and restoration that it needed. The Seaport, the City and Atlas-McGrath worked out an arrangement. Jacob Isbrandtsen, of the Seaport, would go into a joint venture with Atlas-McGrath to develop 1 million sq. ft. of office space 1 block from Schemerhorn Row. This density was based on the transfer of the Seaport's zoning rights over Schemerhorn Row. In return, the joint venture would make an additional cash payment to the Museum and guarantee that Isbrandtsen's 1/2 interest would pay the acquisition and restoration costs for two historic blocks. The City's role was to close off streets in the Seaport area and allow Isbrandtsen to transfer the development rights above those streets as well. Five banks then lent Isbrandtsen $12 million against the future sale of other air rights. The transfers thus provided the major source of initial capital for the project.25

Government can encourage financing of restoration by making it more profitable. It can do this by altering its normal tax policies and by establishing a special rehabilitation
code. Property tax assessments are at least theoretically increased when owners improve their property and/or earn higher incomes on it. This may discourage rehabilitation, especially when new construction is offered a special tax arrangement as a percentage of estimated gross income. By offering partial tax abatements on designated landmarks in their existing condition, and guaranteeing not to increase assessments if the property is renovated according to certain standards, the City can make landmark buildings into more lucrative investments. Another way to encourage investment is to decrease the cost of rehabilitation. This cost is partly determined by the City, which sets code standards for structures. City building codes generally require standards in materials and construction that are higher than those found in old buildings. Old premises are not required to be upgraded unless they are rehabilitated. Thus, rehabilitation work may make a unit subject to far more stringent requirements than formerly applied. This results in exceptionally high renovation costs. The sharp threshold discourages rehabilitation. A step-wise increase in standards for all buildings and/or a special rehabilitation code for old buildings may make rehabilitation more competitive with new construction.

Finally, government can encourage private financing in an area by taking steps and making public investments which will generate confidence in the future of the area. New public facilities, open spaces, an aquarium or other major attraction, restoration of a municipally-owned building, improved transportation access to the area, removal of an
eyesore or obstacle such as an old rail line—these actions may stimulate private investment in the area. Just as important, public controls on the future of the whole area are likely to reduce uncertainty and encourage re-use and restoration of individual properties.

Controlling the District

The model we have suggested for restoring a whole pre-industrial district is to begin with the project of a single entrepreneur. Its success would then create a bandwagon effect throughout the district. Unfortunately, the contemporary state of and uncertainty hanging over the rest of the district may threaten the viability and financial feasibility of the initial project. The entrepreneur may be faced with the prisoner's dilemma. If he puts a large investment into improving his property and no other owners do the same, then he is likely to get a low return on his investment. Customers may not be willing to venture through a decaying, dull, semi-industrial section to reach his shops and restaurants.\textsuperscript{26} Retailers who are afraid of this may be reluctant to sign leases. Lenders will be anxious about the future of the surrounding area.

There are several ways of dealing with this problem. One is to create an initial project which is so large or magnetic that it can survive no matter what happens or doesn't happen in the surrounding blocks. Perhaps Ghiradelli Square was large and strong enough to be self-sufficient. Or, re-use can begin at the edge of the old district, drawing on an already successful adjoining area. Similarly, one might build out gradually from an early use which is still an attraction—such as Haymarket.\textsuperscript{27} But if these strategies cannot be used—
to some extent, even if they can--the entrepreneur needs some kind of assurance or control as to what will happen to the rest of the district. Urban renewal plans provided that kind of assurance (and the mortgage guarantees which might turn those assurances into loans). Each developer within the plan area knew what would happen in the rest of the area, what developments would go where, which streets would be opened and which closed, and how public and private improvements would be staged.

Instead of urban renewal, a single initial entrepreneur might control much or all of the entire district. In the Vieux Carre, a private non-profit development corporation was proposed which would purchase deteriorated structures, restore and re-sell or re-lease them, some at a loss in return for high standards of rehabilitation, low rents or non-profit tenants. Others would return a limited profit. Profitable buildings would subsidize the unprofitable ones. The concept rests on the recognition that because of the prisoner's dilemma, potentially profitable renovations will not be undertaken by private developers. With a plan and operations throughout the district, the corporation could make each building into a better investment. South Street Seaport is following a similar course, leasing land and/or buildings to a variety of users and transferring funds from one building to another. The approach is likely to be more effective at South Street than in the Vieux Carre because 1) the entire district is much smaller; 2) the corporation controls almost all of it either through fee simple or 99-year ground leases from the City; and 3) it is involved at the beginning of the district's restoration, not when many owners, shop-keepers, developers are already established and might resist controls on what they could do with their property.
Finally, as we indicated in Chapter Six, one must be concerned about the eventual future of the district after restoration is well under way. It is at this point that negative control devices may be effective. City designation of the area as an historic district will result in specific controls on the exterior facades of buildings and on any new construction. Carefully drawn zoning ordinances, combined with design review procedures, can control the scale, roof-line and other important attributes of new construction so that it will fit in better with the old. These devices and code-enforcement and demolition-by-neglect ordinances are likely to work at this phase, since money is to be made, there are potential buyers of property, and a considerable number of owners support the purposes of the regulations. and can help serve as a watchdog on change in the area.

Other sorts of control and public policy--such as single ownership by a non-profit corporation--may be necessary to deal with the thorny problem of staged authenticity.

With these various public control devices, local interest groups, entrepreneurs and single owners concerned with the long-range future of the whole area, the public can help create a viable, self-sustaining and valuable special mixed-use area close to downtown.
10. Reflections

The examination of American downtown waterfronts leads to some reflections on the relevance of the values stated at the beginning of this thesis--continuity, incremental growth and adaptation, management and creative use of resources. I still feel that these values are extremely important to the quality of life within a large city, and that special areas, such as historic waterfront districts, which manifest them can play an important social and psychological role for modern city-dwellers. But these values are more applicable to some areas of the waterfront--and of the city in general--than to others. The legacy of the past, the structures, traditions, activities and images which have come down to us and the possibilities for capitalizing on these determine which sections should be preserved and re-used. The pre-industrial waterfront has such a legacy and can be turned to current use in the city. It is therefore an area worth fighting for, against the pressures of private development. But other areas, without such a usable legacy, and with major indivisibilities such as large parcels of land and structures and high site preparation costs cannot be redeveloped incrementally. They require some form of large-scale effort, some form of starting fresh, which, however, recognizes other public values in the city.

An attractive legacy has little chance of survival unless it has an economically viable use. This means it is relatively easy to preserve actively and continuously used areas such as Beacon Hill, Haymarket or Chinatown; the public's role there is protective--to not destroy it by government policy or by allowing speculative private redevelopment. It is much harder to revitalize an area which has fallen into dis-use, as pre-industrial waterfronts had. There, one must actively seek out new uses, pay for the costs of restoration and conversion, and dramatically change the run-down image of the area.
In this process, one must deal with the prisoner's dilemma—the interdependence of investments within a single area. This does not mean that one must wipe the slate clean and start fresh but that there must be a way for actors and investors in an area to agree on a common future for the entire district and to take collective action, without drop-outs and free riders, to achieve that future. Some controlling mechanism is usually necessary, such as single ownership, urban renewal controls or a non-profit corporation, in order to minimize risk and help make the first efforts in an area successful.

This re-vitalization may threaten to go too far, by over-capitalizing on a single image, bidding out all other occupants and uses, and becoming a purely visitor and entertainment attraction. By their efforts to turn around a failed area—a classic problem for which planners have thought out many solutions—they may arouse forces of money, popularity and bowdlerization which then overwhelm them. If one thinks only in terms of an end-state, when the rehabilitation and restoration is completed, without considering the future process of succession, one may ignore these problems and complications. To deal with these problems, some organization concerned with the long-range future and quality of the area as a whole is necessary—whether this be a non-profit corporation, an organization of local residents and merchants, or a landmarks preservation commission. At bottom, "this problem of the self-destruction of outstanding success", as Jane Jacobs puts it, arises because there are too few successful districts in the city. "The demand for lively and diversified city areas is too great for the supply." 1

Both in districts which should be preserved and those which should be wholly re-developed, the key problem is to protect public resources from private expropriation. The waterfront is a special, scarce resource in the city. When its potential is recognized, private interests try to control the resource and then rent or sell access to it at a premium to
others. Without government controls, high-rise buildings along the water's edge would block the view from the rest of the city, while the ground near the edge would become an exclusive turf for the tenants of the complex. The difficulty is that within the government itself, forces for private and public use compete. Major developers wield significant financial and political power in the city, but beyond that, fiscally hard-pressed city governments are attracted by the possibility of higher property tax revenues and lease income. Compared to the need for funds for various city services, the value of public open space on the waterfront or of a low-rise lively district near downtown may seem somewhat marginal. This situation can be dealt with in a variety of ways. The public can focus its attention on limited portions of the area or specific aspects of development, such as public access to the water's edge. It can create situations where private interests—landlords, shopkeepers, marina-owners—are led, on their own behalf, to support public goals. And in the long run, the sources of revenue for local government could come from higher levels of government instead of from local property taxes. Such a change, usually advocated on grounds of equity among municipalities, would also eliminate many of the distortions in local land use policy and controls, distortions which are really forms of 'fiscal zoning'.

These issues surround the great challenge of the American waterfront. The decline of shipping, industry and wholesaling along our waterways creates a unique opportunity in the history of American cities. Not every generation has such an opportunity. It is a chance for the city to turn outward to the water, once again. This chance should not be abrogated for short-term considerations, either for putting new nuisance uses there because the waterfront is already developed in that way or for creating new turfs which wall off the water's edge from the rest of the city.
The city can turn outward by locating land uses which take special and positive value from the two kinds of images associated with the water—the historic image and the cultural/psychological associations with water. These land uses should make the images available to members of the public. The water's edge should be lined with a variety of environments—closed and open spaces, historic and new developments, grand vistas and intimate views, active and quiet areas—which would allow the edge to become a locus for public events and activities in the city. The downtown waterfront is especially important, both because of its history and its proximity to the employment and cultural center of the metropolitan area. But outlying waterways, not specifically discussed in this thesis, are valuable resources too. From a policy point of view, their highest and best use is generally for recreation and/or mixed-income housing, such as Gateway National Park in the New York Harbor or the Urban Development Corporation's Harlem River housing-park development on the shoreline of the Bronx.

One can then imagine the cities of the future which are fortunate enough to have originally located on the water. The presence of water—its sight, smell and breezes—and activities on and along it would be part of the daily experience of city dwellers. It would provide visual and mental relief from the man-made city. In the ever-changing, faster-paced life of the city, the water would be a timeless element.

This thesis has really been concerned with two sorts of 'edges' in the city—the edge of history and the edge of the sea, and the places where those two interact. These edges enlarge and deepen one's experience of life. They allow one to hold, in the words of Boethius, "the whole fullness of life in one moment, here and now, past and present and to come", to deepen the present moment with intimations of the past and with the eternity of nature. Nabokov likens these two edges to each other:
That yielding, diaphanous texture of time, was, by contrast, especially welcome to the mind, just as a sea view from a window exhilarates one hugely...3

Separately and together, these edges—properly preserved and controlled—can refresh the individual, mirror his dreams, and remind him of the wider horizons of the soul and the spirit.

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