THE REVITALIZATION AND REDEVELOPMENT OF URBAN WATERFRONTS

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ABSTRACT

To clarify the waterfront concept and to give a brief explanation of waterfront, to define the problems in urban waterfront development, to formulate the planning and design criteria for redevelopment process according to its characteristics, to impress the necessity of urban design in waterfront redevelopment projects, to form a general base for how a waterfront development project has to be done are the basis of the study.

The aims listed above is achieved by the subject's consideration in two approaches including the theoretical and the pragmatic approaches. The sensitive and an intensive literature survey, including detailed examination of the experiences of the developed countries and the applications in Turkey, is done for the formation of the theoretical base and the pragmatic approach is reflected as in the form of a case study in İzmir. The different approaches to the problems of the waterfronts and the strategies and policies developed for the revitalization of these areas are determined with a detailed examination of the evolution, characteristics of the waterfronts and the applied projects.

The regeneration projects give clues about how a waterfront should be redeveloped. This study proved that the determination of the characteristics of the city, functions and the users, potential and constraints within the project area and an efficient urban design study are the factors required for a successful regeneration of the waterfront areas.

Consequently, a comprehensive planning and design approach, provision of public participation in predevelopment stage, good programming, management and efficient implementation decisions will make the abandoned waterfronts liveable, healthy, and enhanced places for the citizens and economically viable for the city itself.
Bu tezin oluşumu suyun doğal bir kaynak oluşmasına, kent ve kentinin zenginlik kaynağı olması inancına dayanmaktadır. En çok talep alması nedeniyle hızlı bir yıpranma içinde oluştu, eskime sürecinin önlenmesi, kentsel kiyının tekrar kente kazandırılması çabalarının ve başarılı-başarısız projelerin gerçekleştiriliyor olması ve en önemlisi kentlerimizin de yıpranma süreci içinde girmiş olmaları, bu çalışmaya daha da ileri götürmemde etken olmuştur.

Kentsel kiyılar 2. Dünya Savaşı’ndan sonra gelişmiş ülkelerde teknolojik ve endüstri alanındaki gelişmeler sonucunda yıpranmış, terkedilmiş alanlar olarak ortaya çıkmışlardır. Demiryolları ve karayollarının yapımı ile ulaşılabilirliğin artması kentin ve kiyıların terk edilmesi sürecini başlatmıştır. Otoriteler kentteki ekonomik çöküşü durdurmak amacıyla kiyı alanlarının yeniden canlandırılması kararına vararak, kiyılardaki sorunların çözümüne yönelik olarak strateji ve politikalar geliştirilmiş, planlama ve tasarım kriterleri oluşturulmuştur.

Yıpranma sürecine giren bu alanların yeniden kente ve kentiye kazandırılması çabaları başarılı/başarısız yenileme projelerini doğurmuştur. Dolayısıyla, kiyı kavramına açıklik getirmek, kentsel kiyıların gelişim ve değişim sürecinde etki eden faktörleri ortaya koyarak, oluşan sorunları ve çözüm önerilerini, planlama düzeyinden kentsel tasarım düzeyine kadar üzerinde durulması gerekli politika, strateji ve tasarım kriterlerini belirleyerek, kiyı böl格尔imizin oluşmuş yada oluşacak problemlerine çözüm bulmak ve araştırmayı destekleyici örnek bir çalışma yapmak hedef olarak belirlenmiştir. Bu amaçla, kiyı alanlarının gelişim süreçleri, doğal özellikleri, gelişmiş ülkelerin soruna yaklaşımları, uyguladıkları politika, planlama ve tasarım yöntemleri, kiyı idaresi ve yönetim sistemleri detaylı olarak incelenerek, bu alanlarda gerçekleştirdilen projelerin özellikleri ortaya konmuştur.

Kentin karakteri, kullanıcı ve kullanıcıların, alanın potansiyel ve sınırlarının belirlenmesi, bütün bir yaklaşım ile planlama ve tasarım yapılması terkedilmiş kiyı alanlarının kazanılması için gerçekleştirilecek projelerin başarısı için gerekli faktörler olduğunu ortaya koymuştur. Kıyının düzenli ve sağlıklı olarak yapılmasını üzerinde etkisi yoğun olan fakat birçok projede gözardı edilen bu etmenler, kentsel tasarımın detaylı şekilde uygulanmasıının bir boyutu olarak gündeme gelmiştir.
Ülkemizde gözardı edilmesine rağmen, kentsel tasarım süreci içerisinde halk katılımının sağlandığı, projenin programının, idaresinin ve tasarımının etkili olarak gerçekleştirildiği uygulamalar, kıııların kente ve kentlere kazandırılmasını etkin bir şekilde sağlayacaktır.
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Chapter 1

INTRODUCTION

Water has been the most important factor in the growth of the first settlements and civilizations on bays, along rivers for food production and defence. The surplus of food required transportation and trade activities in many settlements. So, water became the first type of transportation with a trade activity and small ports on waterfronts.

The increase in water transportation with the construction of steam ships and the increase in water oriented retail activities improved the water's edge in many coastal cities. The waterfronts has been the hearth of the economy and social integration.

The improvements in transportation and commerce caused changes and developments on the waterfront. The increase in shipping industry and transportation facilities affected the development and growth of the ports. The development of railroads made the transportation of goods easier and rapid than water transportation. Also, in proceeding years, the construction of highways and the increase in number of automobiles relocated many people. Therefore, the intensive use of waterfronts by industrial uses and transportation facilities and easy access to different parts of the city caused the decline of the inner-city. Additionally, the construction of the commercial airports speeded up the decline. These functions threatened the waterfronts and consumed what the water and land produced. The water pollution became the major problem.

Many people relocated causing urban sprawl. The movement from the inner-city to the outer zones cause the recession of the economy. The technological changes and industrial improvements repositioned the port activities. Therefore, the waterfront lands became deteriorated and derelict. The abandoned warehouses, ports, wharves, decks and piers became the problems of the local and federal authorities, as there was decrease in population and economy.

The post war period has been the time period of the revitalization of the obsolete waterfront areas. Beginning with USA, the coastal cities in Britain and
in Europe, the authorities developed waterfront regeneration projects in order to attract people and made them return to the inner-city.

The rediscovery of the potentials of the waterfronts increased the liveability and enhancement of many inanities. The political, economical, physical and social structures have been reflected in varied redevelopment projects. These projects had different characteristics as the coastal had different cultural, architectural and planning backgrounds.

The regeneration projects' common aim was to increase the quality of life by the creation of diversity and variety in the inner-city, on abandoned waterfront land with a public authority in the leadership, also with public participation.

The reason of this study is to learn more from the developed countries' experiences in planning, design and management, as Turkey is facing with the same problem and will be facing in following years. Therefore, a detailed analysis of regeneration process applied in different countries from planning to implementation period is made. It can be said that with an intensive theoretical base, efficient urban design should be realized for successful developments.

1.1. The Methodology

The clear identification of this thesis is supplied by two basic approaches: The Theoretical Approach and The Pragmatic Approach.

The theoretical approach is formulated by the limited written resources as it is considerably a new issue. The difficulty of defining the limits of the subject in a many dimensional, broad content directed the thesis according to the availability of the theoretical knowledge.

The different approaches and applications to the issue in many developed cities are generally based on the administrative, managerial and financial status of the project. The design guidelines are rarely mentioned. The unavailability of the urban design concept encouraged this thesis to develop new strategies and methods for successful redevelopment projects.

The pragmatic approach is based on the theoretical knowledge gained from the literature survey. The detailed examination of the different approaches
to the subject and the experiences gained from the redevelopment projects abroad and the case study in İzmir form the pragmatic base of the thesis. As a coastal city, İzmir has developmental problems with the urban waterfront. The effects of the changes and the improvements in foreign countries and the changing demands and trends in social and economical life affect the urban waterfront. Various applications take place in different parts. The ecological and physical structure are being diminished by intense development just along the water. Increase in pollution rates, proposals of master plans, the lacking social benefits, administrative problems in planning policies make İzmir be in trouble with its urban waterfront.

Urban waterfront in İzmir faces with water pollution, unbearable smell and the visual pollution, due to the untreated wastes that are directly discharged to creeks and to İzmir Bay, high density and high rise residential and office developments rather than open green spaces and other public activity areas. Therefore, in order to reduce the water, air and the visual pollution and to increase the visual perceptivity, in order, the treatment plants should be constructed and greenery and public facility areas should be supplied along the waterfronts.

In Central Business Districts, along waterfronts the developments have to include parks and squares for pedestrians within the office and residences and in adjacent areas to CBD on different parts of the waterfront where residential and commercial uses are dominant recreational, cultural or a mixed-use developments provide healthy, enhanced and liveable environments. Therefore, the provision of social benefits make the development more successful. So, the area where social benefits can and should be supplied in priority is being determined as the project area for development. The aim is to provide both a daily and a year around used waterfront site including both social and cultural values in a residential area.

Current planning strategies are not supportive in waterfront development and master plans do not include detailed developmental regulations for efficient applications. The lacking urban design studies in urban waterfronts prevent complementary and continuous improvements.
Finally, the theoretical and pragmatic approaches are given in 7 chapters in total. The first chapter includes the methodological base and the definition of the waterfront and the reasons for waterfront localities as to clarify the conflict in meanings. The following four parts give theoretical information about the subject.

The second chapter gives information about the evolution period of waterfronts, especially the port cities, from first settlements along the river to the modern cities of today. The factors that had effects on the development of ports were described. North-America was taken as the base, as the first improvements has taken place in North-American cities.

The third chapter defines the characteristics of the waterfront, both the land and the waterbody, that should be considered in planning and design period.

The fourth chapter explains the waterfront phenomenon in developed countries and in Turkey. It provides an overview to coastal zones and an overall planning process. The different approaches to waterfront planning, management, regeneration and design. The problems and the factors of problems related with the coastal zones in Turkey is also explained in detail with examples.

The fifth chapter gives information about the basis of the regeneration process. The planning and design issues and criteria are explained. The requirements for a successful regeneration project are determined.

The sixth chapter includes a case study in urban design scale which is developed for the shipyards' are in Karşıyaka, İzmir. A mixed-use waterfront project is proposed within the consideration of the demands and requirements of the public and the city. It is obviously understood that regeneration is urban design in its base.

The conclusion forms the last chapter of the thesis, stating the prons and cons of a redevelopment project and the experience gained as a result.
1.2. Definitions

Many people can be confused with the terms related with the water’s edge. In order to understand what the problem is, the correct explanation of these terms must be given.

Waterfront has different definitions made by various people. According to Erden Kuntalp, it is “the part of land that surrounds every water body as sea, lake and river. Waterfront is the land which requires water”. (Kuntalp, 1972, p.76).

Cevat Geray have told that the geologists defined it as the land where the geomorphological objects and shapes occurred as a result of the deposition and erosion effect of waves or the land where the waves could reach at maximum distance at land direction. (Geray, 1976, p.67).

Many books on waterfronts use the term “port” instead of a city which has mainly port activities on its waterfront. A port is defined as a town or a city with a harbour, especially one where customs officers are stationed. This term was developed in first periods of the port development in waterfront cities.

In the book “Water’s Edge” edited by Botswick H. Ketchum, the waterfront is defined as the coastal zone and the definition combines demographic, functional and geographical considerations.

"The coastal zone is the band of dry land and adjacent ocean space (water and submerged land) in which land ecology and use directly affect ocean space ecology, and vice versa. The coastal zone is a band of variable width which borders the continents, the inland seas and the Great Lakes. Functionally, it is the broad interface between land and water where production, consumption and exchange processes occur at high rates of intensity. Ecologically, it is an area of dynamic biogeochemical activity but with limited capacity for supporting various kinds of human use. Geographically, the landward boundary of the coastal zone is necessarily vague....the seaward boundary has been defined as the extent to which man's landbased activities have a measurable influence on the chemistry of the water or on the ecology of marine life". (Ketchum, 1972, p.15).
Figure 1.1 below gives the schematic diagram of the coastal zone.

inland

shoreland

tideland

continental shelf

Figure 1.1. The Schematic Diagram of The Coastal Zone

According to Ann Breen and Dick Rigby "the water's edge in towns and cities of all sizes is the waterfront. The water's body may be a river, lake, ocean, bay, a small creek or canal". (Brenn, Rigby, 1994, p.10)

Douglas Wrenn defines the waterfront as the port areas of large metropolitan regions and the small resort towns with active harbours. (Wrenn, 1983)

In the Oxford Advanced Learner's Dictionary of Current English by A.S. Hornby, in 1974 the terms are given as following;

Coast: land bordering the sea; seashore and land near it.
Shore: Stretch of land bordering on the sea or a large body of water.
Waterfront: Land at the water's edge. Especially the part of a town facing the sea, the harbour, a lake etc.

Waterside: Margin of the sea, a river, lake, etc.
Coastline: Shoreline, especially with regard to its shape.
Waterfront is explained as "the part of a town", and the coast has a general definition that it is the whole land that borders the waterbody. So, the term "waterfront" will be used to prevent the confusion.

As it is seen, Erden Kuntalp considers only the water's edge as the meeting point of water and land. The other ones include both the land and the water ecosystems. The two ecosystems and the effect on each other must be reflected in the definition, because the water's edge or the waterfront is the meeting or intersection areas of the two ecosystems. So, the protection of the environment can be provided with the protection of these ecosystems and with this property the waterfront appear as the source of natural poverty. Although the ecological dimension is important, waterfront, as defined by Breen and Rigby and also in the dictionary, is the edge of water in towns and cities. So, it must not be a raw land but a developed one.

The schematic diagram explains the meaning of the waterfront.

As it is mentioned, the term "water's edge" has a broad meaning. It includes sea, lake and river's edges. These can be both rural and urban. If it is an urban one, it is called as the "waterfront". An urban waterfront must have an active role in the city. So, the terms, coast and the waterfront must be distinguished. For a coastal zone and a water's edge to be a waterfront, a planned development is required on these areas. Development process makes a coastal zone or a water's edge a waterfront.

As it is defined above, waterfront is the point where the properties of sea and land unite by development in towns and cities. Different functions get advantage of this property and attracted by this natural beauty. Among these, residential and tourism areas take part and also without disturbing the nature visually and functionally can be used and benefited from. But also, after growth of industrialization and the improvement of technology with increasing transportation facilities, waterfronts became the place of ports and harbours. Transportation, residential, tourism and recreational facilities, commercial and trade activities make use of the waterfront. It was and is a source of activity without any consideration of environmental pollution, the interaction of two ecosystems.
1.3. The Reasons for Localities on Waterfronts

Many uses have localities on waterfronts. They strictly demand land in these areas because of some advantages of the waterfront. The water caused the growth and development of many activities. The listed activities below, have rooted from being at the water's edge.

1) Making use of water products.
   In early ages, people hunted near water and caught the animals that came to water's edge.

2) Defense.
   While constructing their villages the junction points of rivers and hills that were surrounded by any water body have been chosen. Even being along river, did not prevent them to make defense and by moats they used water as a defensive element as in Babylon's.
3) Ports and harbours.
After having permanent settlements, the increase in number of products required and later improved the trade activity. They have constructed harbours and ports to have contact with others in different cities especially to have trade and social relationship. This was accelerated by the specialization of villages and towns.

Figure 1.3. The Walled Port Of Ostia
(Source: S. Gallion, S., Eisner, "The Urban Pattern, City Planning and Design", Van Nostrand Reinhold, USA, 1996)

4) Construction of Shipyards
Growing appreciation of trade and being in social contact improved the transportation activity. Therefore, the need for more ships occurred and Shipyards were constructed.
5) Marine Transportation.
Industrialization and the wish of having trade and meeting others encouraged the development of marine transportation.

6) Location of Commerce and Industrial Activities.
Industry and commerce have chosen the water's edge as it occupied the center.

7) Occurrence and Development of supporting functions.
Taking the advantage of easy access, the increase in the residential areas and other urban facilities occurred with the development of harbour.

8) Having the natural importance and beauty, the waterfront acted as recreational activity point.

These various kinds of functions located at the water's edge. All locational choices point out the importance of the waterfronts. It is the cause and the base of the occurrence and location of the functions mentioned above.

Consequently, the edge of the water, whatever the body is, very important and valuable both in sea and land direction. It cannot only be considered only as a unique line or as our laws say, as an area at a permanent width from the sea. Also, it changes from city to city, even region to region. The building and population density, specialization of the city affect the determination of the waterfront area.

As mentioned above, it can change from region to region, city to city, and also according to the properties of the cities it can be more wider or narrower. The waterfront usage of İzmir cannot be compared with Aydın's. İzmir has its administrative, commercial etc. facilities at its edge. But in Aydın which has a beautiful holiday resort as Kuşadası, tourism makes the waterfront active and liveable. So, waterfront is shaped according to facilities, and direct and same limitations from top to each different city cannot be true and acceptable. Also, again in the same city for example Konak, Karşıyaka and Gülbelbahçe can have different waterfront uses so that the waterfront area must be defined according to the properties of the city and cannot be at the same width as our laws describe.
Chapter 2

HISTORY OF WATERFRONTS

Water acts an important role; forms our lives and shapes our settlements. It had changed and affected the evaluation of the cities and many other things all over the world.

Water was the first form of transportation and in most part of the world it has had an effective role in growth of the communities on bays, on rivers where navigation was possible and at strategic points on the ocean and along rivers.

The earliest commerce activity, having relation with transportation, was a water related one. But with the development and construction of railroads in the 19th century, the transportation and commerce became easy and expanded through the inner city. The importance has been shifted away from the waterfront that has once been the entrance, commercial and cultural point of the city.

As the transportation network continued to evolve, the highways became dominant and preferable for travel and transportation. This improvement, also, affected the urban form, making the residents and other workers locate at the periphery, causing the urban sprawl. So, urban waterfront has been left for the marine facilities related with commerce and ports. However, this situation also changed and recreational and cultural facilities took place on waterfronts.

2.1. Historical Perspective

Life and activity have started at water’s edge. For many decades, the waterfront acted as the heart of the cities and involved different cultures. So, they are really special cultural resources. The ability to provide diversified opportunities for economic development, public enjoyment, enhancement and public identity already made and again today makes it unique in its potential.

The commercial activity mentioned above, have changed a lot with changing the use and nature of waterfronts. Rapidly improving technology
caused the port facilities of cities to become obsolete and urban waterfront was
deteriorated with underutilization, lack of investment and being rather old.

So, the development of urban waterfronts; sites, buildings, piers become
necessary to supply the economic growth, recreational and cultural activities.

2.1.1. Effect of Water in The Creation of Cities

In the creation and development period of the cities, four basic issues
played an effective role. These can be separated as physical and non-physical
factors. Non-physical factors can be examined in three parts. These are;
- Economic Factors
- Military Factors
- Personal Wishes (Gürel, 1970)

Physical factors include the geographical and topographical conditions.
Cities preferred to locate on flat areas, on slopes, on hilly areas, in valleys, on
the watersides. In geographical factor, we will mention about the waterside
cities below.

Geographical Factors:

In ancient times, people preferred to live where they could get and
produce their food easily. Water, forest and other places of visual and aerial
beauty were the effects. To have a location at the edge of sea, river, provided
great advantages to the cities in their geographical locations. So, many big
cities were developed along the rivers. For example, Rome along Tiber, Paris
along Seine, Rotterdam along Meuse, Anvers along Esquet, Vienna along Tuna
are some of these.

Waterfront cities have an additional characteristics as being on the
water's edge. Water provides advantages to the city. An outlook for the city, an
additional communication and transportation possibility, recreation activity with
green areas and an attractive city center on the waterfront are the advantages.
Besides these advantages there are disadvantages also. It is not an important
one but affects the form. The development occurs in a semicircular form
towards land. (Özdeş, 1960)
The enhancement and the relaxation effect of water attract people and many roads open up to the waterfront. From great cities on oceanfront to small ones around lakes all have peaceful, restful and enjoyable properties and lengthens lives. The Great Channel in Vienna, the promenade at Rio de Janeiro has such qualities.

Economic Factors:

The transportation and surplus of goods and products increased the importance of the roads. Intersections of important commercial highways and deltas and estuaries of big rivers are economically attractive potent for the creation development and improvement of the cities. To be near sea or a river empowers the cities because waterways connect all waterfront cities and encourages them to have contact with each other. The ease of communication and transportation made cities to improve rapidly.

Military Factors:

It is the geopolitical factor. It is also the defence factor resulting in the physical structure. Settling on high points and near waterbodies, the cities protected themselves from the enemy attacks. They defended themselves with moats.

Personal Wishes:

The desires of emperors, kings and sultans created cities in history. These cities sometimes were on the waterside. İstanbul, İzmir etc. are some of these.

2.1.2. Evolution Period Of Settlements And Impact Of Water

This section is needed to make easier to understand the change in usage of waterfronts from early periods to 20th century.

It is vital to live in harmony with water. It is a source for physical survival and mental inspiration. So, in early ages, people did not have the technology to change the nature and so, lived in harmony with it, with minor changes. The development of more advanced technology was the beginning of humanity’s influence on the natural environment and, therefore the start of
environmental changes. This continued up to 19th century. Then the impact of technology began to threaten the environment.

Mesopotamia, Indus Valley, Northern China and Egypt are the earliest urban evolution in the world. The civilizations were the most successful ones in the world adapting to the environment. These four hydraulic urban civilizations based and owed their survival to water.

These earliest civilizations developed in the great alluvial valleys of the Near East and the Far East. They are located:
1) In Egypt (Along the Nile),
2) In Mesopotamia (Along Tigris and Euphrates)
3) In the Valley of Indus River
4) In northern China, in the Wei River Valley. (Morris, 1974)

For example, Ur, an earliest Sumerian city in Mesopotamia was one of these cities. It was typical of the Sumerian capitals located along Euphrates. It was a walled, oval shaped city. (Figure 2.1). It stood on a place that on the western side, Euphrates, a wide navigable canal to the north and east. Two harbours to the north and west provided protected anchorages and it is possible that a minor canal ran through the city area. The river was used for both transportation and especially for defence.

Like Ur, many earliest and medieval cities located on watersides. Miletus, originally situated on the southern side of the River Meander, Cesky Krumlov in Czechoslovakia, on the north of the river Vltava, Le Havre in France are some important cities of early and medieval ages' waterfront cities. (Prienne, 1956)

The evolution of settlements has been in a sequential process starting at the river's edge. This evolution includes Nomadism, seminomadism with seasonal settlements, Villages of different types, regional activity sites, towns, cities and ports, metropolises and megalopolises. (Golany, 1995). The water’s influence can be described as following at each stage.
Figure 2.1. Ur, General Layout Plan of the Period 2100-1900 BC.

Figure 2.2. The Plan of Miletus
A: The Castle and Its associated Town
B: The Lower civil town around its market square, surrounded almost on all sides by the Vltava.
C: Later development across the river
D: Artificial Moat

Figure 2.3. Plan of Cesky Krumlov

Figure 2.4. Le Havre, The Map of 1838
Nomadism is the oldest presettlement form of socio-economic and social management. In Nomadism (Palaeolithic Period (stone Age)), food gathering and hunting were the basic activities to survive. In this period, water edges, especially the river, has been used as hunting sites for food gathering. Hunting usually took place near the valley’s river where the animals watered. In advanced Palaeolithic period after the domestication of animals, the water’s edge became the center of settlements. (Golany, 1995)

The evolution from Nomadism to seminomadism was encouraged by the discovery of agriculture and its possible storage, which led gradually to semipermanent settlement and later to permanent ones. In this period, water has been only the hunting place and the site for their shelters.

Seminomadism is the period between the end of the Palaeolithic and the beginning of the Neolithic era. While nomadism has three important parts as the source of water, the source of food for animals and shelter, seminomadism added agricultural production, storage and marketing sites to the settlement. These all were related to definite locations. It was the period in which the agriculture and trade have begun. At first, the settlements were semipermanent but later turned to permanent ones. (Golany, 1995)

In this period agricultural activity have taken place near water. The waterfront was again the place for hunting but later with the development of permanent settlements became the central activity point. First seasonal villages were developed. The evolution of permanent ones took place in regional activity site.

Regional Activity Site provided the bridge between seasonal and permanent settlements. It developed because the economy of seminomadic tribe was a combination of a self-sufficient economy, inherited from the purely nomadic society and an open one related to the market of others. The need to market wool, milk, cheese and meat or conduct religious or other ceremonial events to others, required to develop activity sites. These sites were more than a trade center but a site for assembly or religious events and for cultural activities, festivals, dance, display of handicrafts and races and other celebrations. The rise of services and these activities led to the development of permanent settlements.
Therefore the villages occurred. Mesopotamia is the first place of civilizations that gave rise to the village. In the 18th millenium B.C. in north Mesopotamia village and urban development took place along the Tigris, and Euphrates river in the south. Also in Indus valley, village forming communities existed in 3000 B.C. (Golany, 1995)

Agriculture affected the rise of the village. It was the major element of development. (It was the beginning of the Neolithic era). It had to be considered the long and short term production, suitable soil and water needed for agriculture.

River valleys were the most suitable places for agricultural villages to evolve. There is suitable soil with alluvial deposits located along the rivers. So, the rivers were the primary secure water resource for the development of agriculture.

During this period, among different types of villages, there were fishing villages located near rivers and lakes within the valley. They were the earliest villages to develop in the Neolithic era. Besides fishing villages, mining and agricultural villages were the types of other activity sites.

By time villages became productive and needed regional centers for their common activities. The base of its formation contained the economic needs, the needs for transportation and the interaction of villages developed in the region.

The regional activity centers were permanerit. The specialization of villages in agriculture and handicrafts caused the increase of products and urged the trade activity, so they became permanent. It was geographically central, easily accessible and comfortable and provided adequate space for marketing, for ceremonial events, assembly, worshipping and for other common activities. In many cases, this regional growth center was near the river or a major road where active transportation take place. In this period many small ports have been constructed. At first only one ship or a ship like machine could have been launched, later with the increasing transportation facility and contact between the people the number of ships and the area and the quality of the ports have changed. The main function of its inhabitants was nonagricultural but the center participated in the agricultural activity.
As stated above, the permanent settlements developed with the agricultural production and the discovery of storage of goods with the improving transportation, and acted as a catalyst for the occurrence and the improvement of town. The regional growth center generally formed its center. It served as the trade center for villagers. Therefore, some people moved to these places in order to get benefit from the economic opportunities.

2.1.2.1. The Growth of Port Cities

In his Valley Theory, Gideon, S. Golany say that nomadism seminomadism, fishing village, wood villages, mining villages, regional activity sites, towns, cities and ports follows a sequential period as stated above. (Golany, 1995)

The river plays an important, activator role in the development of settlements. Especially, in fishing villages food gathering and hunting were based on water and, river also was used for transportation and for drinking water. Later on, with the development of permanent settlements few huts occupied place along the waterfront.

After the development of fishing villages, in a sequence, the kinds of settlements listed and explained above evolved. "After the development of the city, when the region as a whole was economically and administratively mature, and surplus of goods were occurred." (Golany, 1995, p.65). At this stage, to import and export this surplus, ports and port cities began to function.

Up to this point, the evolution of settlements has taken place along rivers, valleys and the river’s watershed but the expansion through the estuaries of the rivers, meeting point of the river with the sea, introduced sea as the new frontier. So, cities began to develop at the estuaries and deltas, to serve as a port for exporting and importing goods and culture.

The development of ports and their effects in cities will be mentioned in following subjects in detail.
2.2. Role Of Waterfront in Urban Development

Early settlements tightly depended upon the water. The movements of materials, products and people have all been supplied with the help of water transportation and protective harbours that have been constructed according to climatic factors. Harbours on rivers and on sea provided security and accessibility. They served as the contact point both for social and economic aims. The waterfront was essential to urban growth and development in all ways.

Figure 2.5. Evolution of Human Settlements along The River in a Valley (Golany, Gideon, S., "Ethics and Urban Design", Wiley, Canada, 1995, p.60)
It is necessary to mention about the Atlantic Coastal Seaports, in order to understand the role of waterfronts in a city's development period, as they are the first examples.

The importance and the incentive power of water occurs first in Atlantic coast. It can be seen that water gives life to cities and people. Along the Atlantic coast five seaports had been established in 18th century. They became the linkage point with Europe and each had been the metropolis of their regions. Ports affected their lives and improvement. (Tunbridge, 1988)

In the beginning of 18th century, in USA coastal seaport development spreaded along the Atlantic Coast. Ports affected the small cities and made them the metropolis of their regions. So, small cities can get bigger with the waterfront development. They had developed a commercial activity, urban amenities and a civic spirit. They only differed from each other in graphic setting and the nature of their hinterlands. They all had sheltered harbours which all of them adopted to the ocean going vessels. (Colquhoun, 1994)

The locational choice depended on one thing in these cities; safe harbours. As they were the focal points of activity, having safe harbour meant many people and ships visiting the harbour for different purposes. "It was the place where necessary provisions were received and distributed and outgoing cargo packaged and loaded." (Wrenn, 1983, p.45)

Besides this transport facility and being a market place, the waterfront had been a performance place. It served as the social interaction point and ideas were exchanged at these places. "In every colonial port the waterfront was an important meeting place and a symbol of community strength." (Wrenn, 1983, p.49) People gather, participate in events and make the water's edge liveable.

North America has both coastal and inland ports that affected the urban development. So, the changes on waterfronts will be handed beginning with the coastal seaports and later the inland ports.

Coastal seaports involve Boston, Newport, New York, Philadelphia, Baltimore, Charleston and Savannah in Atlantic Ocean, and Vancouver, Seattle, San Francisco and San Diego in Pacific Ocean.
The Atlantic Coastal Seaports had been built in 17th century. They had direct links with Europe which is 3000 miles away. They were different from each other as mentioned that the geography and the nature of the hinterland affect the characteristics of the waterfront. Ports and harbours were the hearth of these cities as can be said in common. Transportation of materials and good was the main activity. On the other hand the waterfront was the meeting point of all cultures. (Geddes, 1973)

Boston is on the east of North America and was connected with the mainland only by a narrow neck washed by tides at high water and during storms. Having a safe harbour, the development of shipbuilding and seafaring trade formed the economical growth of Boston. Also, it was the distribution center of merchandise for the whole region and trade activities with Europe, especially with New England was through Boston and this activity on waterfront promoted the economy and the accumulation of resources made the city more richer. As a result, this richness reflected itself through shops, warehouses and offices along the waterfront, though the other coastal cities have suffered from Boston's increasing trade activity. (Savitch, 1995)

NewPort was one of the cities suffered. It stood an Rhode Island and had a fertile lad in its hinterland, so, agricultural products were the subject of commerce. New England had hard and infertile land in hinterland and demanded these agricultural products. The demand was supplied by Newport merchants and also extended their trade activity.

At this point, it can be clearly understood that New England was in trade with the Atlantic coastal seaports and had docking, storage and cargo handling facilities. Therefore, they had secure, independent and viable transportation activities. So, the water and waterfronts were the base of their life and economy.

New York (previous name was New Amsterdam), Manhattan, had a different development period. It had a natural and safe harbour in addition with fertile land and an access by the Hudson River through inland. It had direct import from London and Bristol and also had relation with the settlements located along the river. There was an expansion along the river for economical fertility. In this case, the waterfront was the means for supporting urban growth
and development. Charleston shared the same evolution period as New York. It had a direct trade with English or Southern European ports. (Stearns, 1993)

Philadelphia became the second important city following Boston. It had a remarkable commercial and cultural activity owing to its waterfront, as it was the catalyst for economic prosperity. The main reason of this economical growth was the accessibility into the back country by construction of roads. The marketing of goods imported from other countries became more available by this way. (Wrenn, 1983)

We have found out one other role of waterfronts at this point; the improvement of the overland accessibility of the waterfronts. This makes the city advantageous in both economy and urban growth. If the lifeblood of the city was the commerce, the waterfront was its heart. The location and the quality of the port was directly related with the emergence of the city.

As regards, the Gulf and Pacific Coasts, the location and protective, safe harbours were also important. The pattern of urban development along coasts especially the early development of major cities as San Francisco and San Diego are very significant. The important thing is the fundamental relationship between a suitable harbour and urban expansion. The cities developed more slower than the Atlantic Costal cities, moreover there was not an urban development until almost 1700s. The reasons were,

first;
- the longer distance and hard to ship by the sea to Europe,
second;
- the exploration facilities taken place in North- South and Central America but not in West. (Wrenn, 1983)

San Diego was the first to be explored in 1542. Later in 1700s the Spanish vessels sailed to San Diego to supply missions established there. It was many years later the trade activity had taken place.

San Francisco was explored in 1579 but the city was not developed for many years till 1776. It was a potential port city. Later on a harbour and landing facilities were built by Spanish explorers.

The search for safe, protective and deep water harbours and access to navigable waters influenced the location of all developments. Seattle was
founded in 1850 in this context. The deepest and desirable port of Seattle supported the development of the city.

The gold rush in Western America affected these cities. Commercial wharves, piers and regular services between ports became inevitable.

Besides coastal ports, it was mentioned that there were inland ports that affected the urban growth and development in America. These ports occurred with the development of railroads, highways. People when migrated to west for gold over highways, the inland waterways were chosen as transportation route from center to port cities. So, the cities along the rivers became the point of commerce, and trade became more effective.

The migration of settlers increased the population of the riverfront cities. The riverports became attractive as the result of shipping facility. In these cities, taverns, wharves, storage buildings located along the riverfront.

The introduction of the steamboat let the urban growth either. The steamboat offered tremendous savings in time, risk and cost. The trips became shorter and the export became dominant in riverfront cities.

In the Great Lakes the construction of canals provided the use of steamboats. A network of canals were built to develop all the towns. (Lawrence, 1997). So, the rivers, canals and steamboats supported the urban development in port cities.

2.3. Impact of the Railroad in Waterfront Development

It is stated above that the railroads had an impact on the development of inland riverfront cities and of course ports. The impact on the role of waterfronts can be explained in two parts. first one was the competition between the first port cities and the increase in the importance of many urban waterfronts and the second was that "it opened up areas commercially unapproachable by water, thus diminishing a city's need for water access", (Wrenn, 1983, p.43), and also "it handicapped some portcities that could not accommodate the spatial requirements of the railroads along their waterfronts". (Wrenn, 1983, p.75)
Although many cities had a thriving port that caused the urban growth, the railroad became impressive because "the railroads were usable at all seasons of the year, the speed of delivery offset the relative cheapness of shipping by boat, and most important of all, land routes could reach areas commercially unapproachable by water". (Wrenn, 1983, p.40)

However, the railroad development resulted in loss of importance of port activities. When the railroad was unable to approach to the waterfronts the warehouses were constructed away from ports and newer industrial and warehouse facilities occurred. So, the use of waterfronts became lesser.

2.4. Evolution of Urban Waterfronts in Portal Base

Urban waterfronts obviously have affected the settlement and growth of some cities. Also, have been affected with the dynamic economical and technological changes. In this situation the political changes and the loosely related ideas and actions of politicians and other entrepreneurs made waterfront development also disjointed and incremental.

Many things affected the formation of ports. "The development of a port was the result of many technological improvements, growing sophistication in land and especially water transportation, continued population growth, the production of a surplus of goods, improvement in political management advances in trade activities, and the readiness to move from a regional self sufficient economy to an interregional economy." (Golany, 1995, p. 125) With the magnificent economic growth of the ports and cities natural environment was relatively sacrificed and open waters and waterfronts meant only transportation and, the equilibrium between nature and man, diminished. The unlimited demands of humans spoil the sea and land ecosystems.

As mentioned in topics above, ports were the base of the waterfront cities. To understand the changes in urban waterfronts, the port development period will be mentioned below.
2.4.1. Port Development Pattern

Under this topic, the development of ports are explained in eight periods. Each period has different characteristics according to the evaluation of the waterfronts.

First Period:
The existence of a safe harbour suitable from passenger and cargo ships encourages the establishment of a port. Within the harbour, a place where the construction of wooden jetties was possible has been founded. Ships then anchored offshore and cargo was transported to the jetty by smaller boats. This is all at waterfront and "it was nothing more than where primitive inland trails converged at the location of the jetty". (Wrenn, 1983, p.43) Later, a street pattern was needed to support the access to the port. Throughout this period, people had direct contact with the natural shoreline. The waterfront was easily accessible with natural beauty.

![Figure 2.6. First Period of Port Development](Source: D., WRENN, "Urban Waterfront Development", Urban Land Institute, USA, 1983, p.10)

Second Period:
In this period, rapid growth and development of the settlement affect the waterfront and the physical change can be seen in significance. Instead of
wooden jetties of the first period, a larger pier was built to allow ships to deck. The grid street pattern began to be felt with the filling in of the buildings in the street grid. To stabilize the shoreline and to improve the anchorage facilities, seawalls and bulkheads were constructed at the waterfront.

At this period, the rapid growth and expansion of the settlement did not affect the main access to the waterfront. The settlement had a direct relation with waterfront with a shoreline road providing primary access as in the previous period.

Third Period:

With the great expansion in population and facilities, the settlement was in the way of becoming a city and its waterfront began to serve as a port. The development of the port was the result of the increase of the maritime commerce. Also, it affected the urban development both in size and activities. The existing shoreline road became a busy street providing services, supplies and office space for merchants and the shipping trade.

The main access to waterfronts increased to two or three with the growth in size. Warehouses began to be built along the waterfront and shoreline road blocking the visual access from inlands.
Fourth Period:

The use of steamships increased the commercial activity. The wooden piers gradually left their places to bigger docks made of stone and fill material. By filling out into the water to expand docking and storage facilities, the distance between the city’s center and its shoreline was significantly increased.

The rapid expansion of the waterfront and its growth as a port facility precipitated the formation of a governing body to manage shoreline activities.
Fifth Period:

Ports had great importance and continued to grow up. More warehouses were built to supply the needs of commerce and other port facilities. Railroads and railways were introduced for transportation of goods. They required a great amount of space at the waterfront to service docks and install tracks, so more land was created with fill material. This filling operation and increased traffic at shoreline prevented the citizens to reach to the waterfront and to make use it.

At this period the natural beauty and the direct contact of inhabitants with water disappeared/were limited. The city center have been severely affected with the increasing distance from the waterfront.

Sixth Period:

The expansion of the city affected the original shoreline road. It became functionally less useful as the distance to water increased.

Figure 2.10. Fifth Period of Port Development
(Source: D., Wrenn, "Urban Waterfront Development", Urban Land Institute, USA, 1983, p.10)

At this period,
- the central city detached from the shoreline,
- the waterfront was congested and difficult to manoeuvre through.

To get over the congestion a new elevated highway was built near the shoreline with limited access to the city. Offices and stores along the old shoreline road were consequently converted to warehouses.
Seventh Period:

This period involves the consideration of two paths from which was chosen in the development period of the waterfronts.

1- The case of Declination of Shipping

In this situation the shoreline remained unchanged and the old buildings along the old shoreline road were demolished for the sake and widening process of the expressway.
2- Increase in Shipping Facilities

As the shipping has been the important activity in the city, the port activity became wider and more industries entered to the city. So on, the wider piers were needed and constructed to supply the needs of these new industries and port activities. So, shipping, ports, wider piers just had the same meaning with the waterfront.

Figure 2.13. Seventh Period of Port Development
(in Case of Increase in Shipping)
(Source: D., Wrenn, "Urban Waterfront Development", Urban Land Institute, USA, 1983, p.11)

Eight Period:

In this period, the direct effects of industrialization can be seen clearly. The elements of industrialization like trains, cranes and ships and their required spaces caused incremental changes in the waterfront. The size of these elements increased the scale of the waterfront and its character too much.

This kind of development process of waterfronts was economically preferable but the ugliness and the loss of the visual attractiveness made people leave these areas as they were for industries and not liveable as in the first periods. The accessibility, human activity areas and recreational facilities had great role in the human use of waterfronts.

Industrialization also changed the cargo loading in ports. Containers were being used to carry cargo. They are the metal boxes, in size of a small
truck body. Containerization speeds ship loading so, the traditional cargo handling, known as break bulk (loading of the individual small packages on and off the ships) was stopped.

![Image of a port](image)

Figure 2.14. Eight Period of Port Development
(Source: D., WRENN, "Urban Waterfront Development", Urban Land Institute, USA, 1983, p.11)

Container ships to serve efficiently require acres of land and more back up space is needed. Also the storage of the containers caused the expansion of the waterfront land. So, many of the break bulk piers that had been used before became unusable and fell into disrepair. Some manufacturers began to leave the city and the railroads were less used and suffered by the decline of manufacturing plants. Railroad yards on the waterfront were allowed to deteriorate as the result of old age, neglect and disinvestment. They became a ghost area- a deserted, inaccessible place having a depressing effect.

This change in old port area, governments and private developers decided that this area could be used for public. As the ports had a commercial failure, the waterfront area can be opened to public use for recreational, residential and commercial activities.

Later on, a new container port was developed out of the city with more space was available. So, without disturbing the shipping activity the waterfront added to the city as a liveable space.
2.5. Metamorphosis of Waterfronts

In every individual city, the waterfronts have different evolution periods. The changes in waterfronts vary from one to another as the city's age, size, location, climate and the diversity of water related uses and forms of governmental interventions are different. So, the metamorphosis of urban waterfronts can be qualified as follows. The first two will be explained below and the other two will be given later.

- Physical Alterations
- Changes in Environmental Quality
- The Different Functions
- Jurisdictional Responsibility

2.5.1. Physical Alterations

The need for physical alteration of urban waterfronts was rooted from the technological innovations affecting the transportation along the waterfronts. It was an endless process of change - filling operations. (Ketchum, 1972) For example, at the early stages of waterfront development, the riverfront cities extended their port facilities to the filled parts and built warehouses on these areas. The need for new locations for new waterfront facilities and new land for these facilities by filling in the land to meet the demands of enhanced activities caused the waterfront dimensions that they have expanded. These alterations were the result of demands of technology and social life caused different alteration schemes to occur. The waterfront configuration, as have been altered, indicates the development of waterfronts. The industrialization and the expansion of waterfronts densely developed areas caused pollution and deterioration of the environment. Almost every port operation generated pollutants and the waste generated by shipping and commercial fishing operations pumped and discarded directly into the water.
extended their port facilities to the filled parts and built warehouses on these extended parts of waterfronts. The need for new locations for new waterfront facilities caused the creation of new land for these facilities by filling in the harbour.

The change and expansion in maritime activities caused the waterfront areas to get larger through the sea in order to meet the demands. This situation reached enormous dimensions that they have expanded the shoreline farther and farther into the harbour, that the sea deepened much they built a protective breakwater offshore. These alterations were the result of landfill.

Besides breakwaters, seawalls were constructed to control mud slippage and to allow filling in the mud flats and to improve moorage conditions along the waterfront. (Ketchum, 1972)

These kinds of alteration at waterfronts were the result of demands at these urban areas. Change in technology and social life caused different activities to occur. The waterfront configuration, so have been altered in response to the social and technological factors. If could not adopt to change it lost its economic power in the city.

2.5.2. Environmental Quality

The environmental quality of the waterfront has been directly affected and worsened with the rapid industrialization and the expansion of waterfront to locate competing activities. This densely developed areas caused pollution in the sea and the deterioration of the environment. Nothing about pollution control has been emphasized. The pollutants and the waste generated by shipping and commercial fishing operations pumped and discarded directly into the sea.

The industrialization was the base and the cause of deterioration. The elements of industrialization like ships, railroads, grain elevators, processing plants etc. caused detrimental effects. These were dense air pollution, greater noise and congestion, destruction of waterfront ecosystem -both land and sea, destruction of fish habitats-, and improper waste disposal. Also, the intensively
utilized waterfronts were visually unpleasant and physically uninviting. The surface of water frequently was covered with thick oil discharged from ships and the shoreline was full with trash and solid wastes.

Besides, the absence of modern sanitary system resulted in unpleasant situations and environments. The waterways were open and directly went to the sea and the bad scent spread to the whole city. The unbearability of the waterfront made people to escape from the sea and destroyed the water-land ecosystems. (Alyanak, 1994)

Furthermore, the rapid urbanization accelerated the erosion and sedimentation because of not having any precautions. So, it was resulted in flooding and drainage problems.

Not only industrialization and technological changes but the location of the city also affects the quality of water. The effect of pollution and the deterioration of water quality are different in different cities when their locational choices were considered. The seaports if they are open to sea have less deterioration problem as the tidal action helps pollutants become less effective by dilution and distribute the open sea. If the tidal action is considered for the riverports it can be seen that the riverports are extremely unlucky that the tidal action cannot reach to rivers. The agricultural pollutants, nutrients and domestic wastes cause problems. The rapid deterioration of the water quality becomes inevitable.

The decrease in water quality can be in three ways. These are:

• Deoxygenation of water by organic matters originating from untreated sewage. The "divided residues, either suspension or coating the lake, the river or sea bed, become so densely clothed with bacteria, fungi, and predatory protozoa, that these absorb most of the oxygen from the water, causing an aerobic conditions in which only a few specialized organisms can exist" (Doğan, 1994, p. 357) So, much of the worst- quality water is associated with urban areas.

• Greatly enhanced nutrient levels, especially inorganic forms of phosphorus and nitrogen. Water entering towns may already carry a considerable burden of nutrients originating from agricultural land, but large extra amounts are added by sewage treatment plants most of which are
only designed to remove organic matter and other suspended solids." (Doğan, 1994, p. 358) So, as a result, algal growth occurs which causes the water to be green, which covers the entire surface of the river, lake etc. When the algae die, their decay can produce deoxygenation, and the water becomes brown. The reason of this result is rarely the rain water drainage and mostly fertilizers, animal droppings and vegetation in agriculture.

- The third form of pollution is the content of suspended solids. Toxins (industrial contaminants as lead, zinc, copper, nickel etc., untreated saline mine water from coal mining areas, and mothproofing agents in textile works, un-ionized ammonia from coking plants are the main factors of pollution in waterbodies, mainly the rivers. (Simonds, 1994)

Bays are much more luckier than rivers but pollution is again the problem. The unfiltered industrial and residential disposals are directly given to sea and create unliveable and scenty areas. The inner bay, also the middle bay in İzmir, have been extremely polluted by this way.

2.5.3. The Functional Changes On Waterfront

The characteristics and requirements of a city determine the functions on waterfront. The urban waterfronts served commercial, shipbuilding, transportation and defense functions in the early periods of urban development. Later, with the growth of small towns to big cities the commerce, shipping and industry have chosen location on waterfronts. The railroads served these functions. The water transportation began losing its importance with alternative transportation methods. The decreased need for water transportation areas encouraged the location of recreational and residential units on these abandoned areas. So, as mentioned in previous subjects, the functional change occurred with the development of railroads.

In addition, the specialization of waterfront cities occurred. Many waterfront areas transformed to depots, industrial uses and warehouses. The easy access, technological improvements were the cause of this situation. So, the demand for accessibility resulted in the construction of the highways. The commerce and recreation have chosen place along these highways. So, pedestrians were disabled in reaching to the waterfront.
Against this industrial growth on waterfronts with the City Beautiful Movement many parks, plazas, walkways along the waterfront have been designed providing beautiful and liveable public spaces in the city. (Breen, Rigby, 1994) The basis of this movement was the beautification of the city and the increase in environmental and public quality in an intensively developed city.

The increase in the number of automobiles in 1950s has caused great parking areas on waterfront land. Following the World War II, the functional change occurred with the construction of airports. (Figure 2.16) The urban shoreline served for the great land requirement of this function. However, the unbearable noise and other related services resulted in environmental problems and conflict between the uses. Additionally, traffic congestion caused by airports made other uses locate on other parts of the city, but later, the demand for this function has been decreased.

So, ports and transportation facilities serving these areas became obsolete. In many cities, waterfronts became the places of parks, green spaces, residential districts and recreational areas with the repositioning of the industrial uses and the related functions that served them.

2.5.4. The Renewal of Jurisdictional Responsibility

The different and changing waterfront uses in different time periods required changes in laws and the responsibilities on these areas. So, many public organizations, agencies, governmental institutions for the development, management and the protection of the natural and historical resources have been established.
Chapter 3

CHARACTERISTICS OF URBAN WATERFRONTS

The development and redevelopment of urban waterfronts require a reliable knowledge of the characteristics of the area. Different characteristic form different kinds of urban waterfronts.

Urban waterfront is the interface between land and water, and this name, as defined in previous sections, is applied to the port areas of large metropolitan regions and also refers to small resort towns with active harbours, commercial fishing villages and many medium-sized industrial cities located along navigable waters and many cities located on lakes. They completely vary in type, size, age and character.

The unique characteristics specific to each waterfront should be known for a successful development process. This procedure involves the data collection related with the area. The geographical location, urban context and government jurisdictions must be considered. The dynamics of each factor must be carefully handled.

Therefore, the characteristics of waterfronts will be examined under the main titles; geographic location, urban context and government jurisdictions. (Wrenn, 1983)

3.1. Geographic Location and Physical Characteristics of Waterfronts

Waterfronts are the natural resources and have different and unique characteristics as they vary according to the waterbody that they locate along. So, each waterfront has a unique geographic location and it affects the physical form and cultural heritage of an urban waterfront that many cities first settled along the rivers, on the estuaries of the rivers and had a very long historical past and cultural and physical values. Geographical location involves the environmental characteristics of the area related to water, land and climate. In order to get a detailed information about the geographical location, it is
necessary to learn more about waterbody and land resources of the area and the climatic factors.

### 3.1.1. The Properties of The Waterbody

Waterbody is an important factor in determining the development type on waterfronts. Waterfronts are generally chosen location on different types of water bodies, on coasts, along rivers, alongside bays, coastal inlets and at the terminus of shipping channels. The dimensions and configuration of the waterbody, the water resource dynamics and quality of water affect the waterfront use in addition with the design and development of the area.

If a waterbody has larger dimensions, the range of potential water-related uses will be greater too. A coastal bay provides many alternative uses although a riverfront cannot, because it is more narrow and shallow. The greater range of water-related uses also have the probability of having competition in between. (Simonds, 1994)

Besides the dimension of the waterbody, the water resource dynamics have also great significance in development period. The fluctuations and wave actions, tides are especially seen in coastal seaports and affect the development. In such a case breakwaters and other elements are required to protect the waterfront from direct effect of waves. (Lewis, 1988)

In inland waterways, the water level fluctuations play an important role in development. The melting snow and heavy rains change the water level and if they are in severe limits, it is clear that the development should be limited for safe riverfronts.

The problems caused by high water levels and floods can be controlled by some design elements. The development can be in elevations or seawalls, with land filled in behind can be built to lessen the effects of fluctuations.

The character of urban waterfronts is also affected by the water quality as mentioned above. The type and concentration of chemical pollutants, dissolved oxygen, temperature and salinity of water have to be found out for complete inspection. The cleanness of water provides the innovative and
Appending development projects on waterfronts and attracts many people. The clearer the water the most significant waterfront uses enhanced people.

3.1.2. Properties of The Waterfront Land

The land as a resource and its characteristics are important in the development period. The ownership, the amount of waterfront land, its condition and its configuration form its characteristics and have to be examined in detail for development.

The amount of waterfront land affect the contingency of the uses that will locate on this land. The over demand on these areas resulted in filling in the water and by this way more waterfront land was supplied for new uses. However, creation of additional land caused environmental problems and influenced the water and land ecosystems. So that, in some sensitive countries it was stopped filling out into water. On the other hand, the extension to water is fixed but the width of the waterfront land depends on different factors, and changes from city to city. These inland boundaries can be determined generally by,

1- Topographical units (hills etc.)
2- Physical Barriers (Railroads, highways, etc.)
3- Jurisdictions/Legislations

These three features help the configuration of waterfront land, as mentioned above, and determine the type and size of the uses. In addition to these the configuration also affects the pattern of urban development and causes changes in urban form in these areas. The city form figures out with the characteristics of waterfront land. "Coastal seaports generally follow an urban form where either part of the cities perimeter is bounded by the shoreline and growth occurs farther inland, or the body of the water penetrates in land and the city gradually envelops it." (Wrenn, 1983, p.25).

San Francisco as seen in the figure 3.1. has great areas of waterfronts and waterfront development is linear and has a convex configuration. This
provides the city to have more shoreline areas and minimum distance to water’s edge.

Baltimore, again in figure 3.1, has a limited shoreline as compared with San Francisco. The city is located along the waterways and the city’s linear growth is limited with and depend on the channel’s or harbour’s sizes. So, the urban form develops according to the waterbodies.

![Figure 3.1. Shoreline Configuration of Baltimore and San Francisco](Source: D., Wrenn, "Urban Waterfront Development", Urban Land Institute, USA 1983, p.25)

In addition to the coastal cities, there are inland waterways and cities as mentioned in previous subjects. These inland ports include both riverfront cities and cities on lakes.

The city can be on both banks of the river or be located on the intersection point of two or more rivers. The first one configures the linear expansion, the second one provides more shoreline. The cities located on
lakes generally have inland growth and limited shoreline areas. These are figured out in 3.2.

Figure 3.2. Growth of Cities along Rivers, Lakes and Cities

One other important effects of the issue that will influence the development on waterfront is the condition of this land. The availability of the land for new or additional development requires knowledge of the condition of the area. The bearing capacity and the erosion problems are the basic issues that have to be considered. There can be alluvial deposits and poor materials that are unsuitable for developments. In these waterfront lands the bearing capacity should be heightened with some construction materials or the foundations and bulkheads left from previous uses must be empowered for new uses.

Additionally, there are also dunes on many undeveloped, natural coastal zones that require great care and preservation. Winds form the dunes and many grasses live on them. "Dunes are only little sandhills, formed by waves and wind and, where unstabilized, extremely vulnerable to these selfsame
forces. Yet there are grasses, sedges in Europe and marram in the USA, which are the pioneers of these environment. They are astonishingly tolerant to high salinity, extreme glare, soil’s lacking humus, and uncertain and oscillating supply of water (Ketchum, 1972, 63). The formation of dunes can be seen in figures 3.3. and 3.4.

The wind carries the sand towards inland providing many grasses grow on the other side. The sand deposition increases as the wind continues to carry the sand inwards forming the dune as a hill. The dune grass changes character with the protection from the wind and grows. The sand is deposited in front of the dune provides again the grass growth in this part, causing the formation of the secondary dune. The plants begin invading the back part of the first dune providing land for development and new dune grasses cover the front part of the secondary dune. Grasses stabilize the dunes as they tightly hold the sand with their roots.

For a sensitive development, the tolerance and the intolerance of the land in various parts should be supplied. The first part is the beach which is mostly tolerant to human use such as fishing, sunbathing, etc. The second part is the primary dune and intolerant to any kind of movement as walking, because it prevents flooding and huge storms. The zone after the primary dune is the trough and it is tolerant. The development can take place but the ground water should be considered. The groundwater is important for dunes for the growth of the grasses. If the fresh water level decreases the salty water causes the death of the plants. So, infrastructure should be considered carefully in case of development. The inland dune takes place later and is also important for defence. It is intolerant for development. The backdune is the most available land for development supplying fresh water and the plantation, housing units, recreational facility areas, etc. can be situated. The last part is the bay which is productive and should not be filled any more. Many living organisms can live up to 200 m. away from the water’s edge. Recreational uses, without any building construction, provides the enhancement of this part. (Figure 3.5.a-b)
Figure 3.3. The Formation of Dune - The First and The Second Stages
As sand accumulates on the dune, wind removes sand in front of the dune.

Thicket and woodland plants invade the rising backdune sand under the protection of the growing secondary dune.

The established dune-grass community initiates primary dune formation.

Thicket and woodland communities advance north and south behind the secondary dune.

Mediterranean conditions allow dune-grass communities to spread seaward.

The secondary dune is stabilized. Dune grass is replaced by plants not requiring sand deposition.

Salt spray is reduced by the primary dune and ground level rises. Xeric thickets replace dune grass.

Woodland is established behind the stabilized dune.

The primary dune is established and the secondary dune is stabilized.

Figure 3.4. The Formation of Dune - The Third, The Fourth and The Fifth Stages
Figure 3.5.-a The Tolerance of The Dune For Development

Figure 3.5.-b The Tolerance of The Dune For Development
3.1.3. Microclimatic Variations

Another basic issue that affects the location of waterfront development is the climate, especially the microclimate that has an effect on uses and forms of urban waterfronts.

The microclimatic changes vary city to city creating different forms. Furthermore, the microclimatic effects like changes in temperature, precipitation, wind, including water level fluctuations, erosions and siltation rates, intensity and duration of storm, etc., and their majority or minority cause relative variations on different waterfronts. For example, hard wind conditions and cold temperature require the intense use of waterfront wall enclosed lands or prohibit some uses during sometimes of the year but if the weather conditions are just the opposite and there are less variations, often the loose development takes place and many uses demand on waterfront land to benefit in economical means making use of the soft weather conditions. As a result, in all seasons, they can be used intensively.

The gain and loss of heat both in water and on land also determine the development potential of the area. The large temperature changes between land and waterbody cause onshore and offshore breezes. The heat gain and loss of water and land in night and daytime have significant effects. The colder the waterbodies, the colder the waterfront and vice versa. When the waterbody is colder than the land the warm air on land rises and the cold air replaces it and consequently causes onshore breezes. If the land is colder and the water is warmer the reverse occurs and cause offshore breezes.

Consequently, in addition to winds, fog and mist can be seen and these temperature differences on both land and water can determine the potential uses and their location.

3.2. Urban Context

Development opportunities on a waterfront requires the examination of urban context, and its dynamics. Urban context means "the unique set of relationships on linkages that exist between a city and its waterfront."
urban context mean more than simply the location of the shoreline within a city; it encompasses the pattern of land and water uses, the constituency for these uses, historical and cultural resources, access and circulation and visual quality". (Wrenn, 1983, p:28) That is to say, the land and water uses define the urban context.

Two parameters are used basically. These are:

- The type of use
- The water dependency (The Ministry of Municipal Affairs, 1987)

**Type of use**: Involves the classification of traditional urban waterfront development. A waterfront can be an industrialized, a resort or a commercial area but often is composed of a mixture of commercial, industrial, residential, recreational, and transportation uses. The type of these unique uses or this composition determine the urban context.

**Water Dependency**: On the other hand as a second parameter, water dependency acts an important role in defining the basic distinctions between the waterfronts. Water dependency can be examined in three categories. These are:

1- Water dependent uses

These uses must be located on water. Their life and continuity are based on having location on waterfront. Ferry, port terminals for commerce, passengers services, the marine construction and repair facilities, the marinas, cargo terminals are some uses that depend on water.

2- Water related uses

These uses can live away from water but the waterfront location provides support in many ways. That is, "if real coast savings or revenue advantages can be attributed to a waterfront location (Unrelated to land rents and costs), the use is considered water related." (Wrenn, 1983, p:28). This type of uses include single user terminals, seafood processing plants, petroleum handling and processing plants, parks, public resorts, aquariums and restaurants.

3- Uses that are neither dependent nor have any relationship with the water resource.
These uses have the location at a suitable and considerable distance from the shoreline. This category includes hotels, apartments, private residences, warehouses (not for waterborne commerce) and retail sales.

The first two parameters that define the urban context require efficient urban infrastructure. In order to determine the type of use on the traditional or previous waterfront uses infrastructure may not be sufficient for the new ones. As understood, according to types and water dependency unique use or the combination of uses vary in different waterfronts.

![Figure 3.6 Water dependent Use - A Marina](Source:The Ministry of Financial Affairs, "Urban Waterfronts, Planning and Development", 4, Canada, 1987)

3.2.1. The User Groups

Water constituency gives information about the urban context. The characteristics of user groups, their habitats and their demands on waterfronts determine the characteristic of the area. In this respect, we can mention about two constituencies in a waterfront city. These are primary and secondary groups that have relation with the waterfront. (Colquhoun, 1994)
Primary Groups have direct relation with the water and use the waterfront as residential area, working place, recreation resource.

Secondary Groups are indirectly related with water and also occasionally go to the waterfront. However, they consider the water’s edge as the public place and are sensitive to it.

In addition to these constituencies, sometimes a special constituency occurs for specific features of the waterfront. It is a small and a community group.

The major waterfront uses determine the profile of this group on residential waterfront areas. The residents emphasize the need for public safety and quality of life issues and influence the development in basis of property values and urban amenities. When recreation is in subject environmental conditions will be important. Water quality, traffic congestion, public access and maintenance of open space are some examples that are given importance by primary constituency.

Although primary constituency prohibits unhealthy developments on waterfront for a unique use, the user group, on their behalves prevents other but similar uses to locate on waterfronts. This is obviously an opposing attitude on a limited waterfront area.

The secondary constituency has an indirect relation with water, but it can be effective in determining the waterfront policy. Socio-economic characteristics of an urban population, national differences etc. determine the profile of this group and as each city has different characteristics they also vary. (Colquhoun, 1994)

In addition to its effectiveness on policies, this group becomes more and more active when vacant waterfront lands and viability of existing uses are in question. It can either change the project or delay it.

There is another but local, special and small group of people affecting the waterfront development process. Their aim is to protect the physical and cultural properties of waterfront land and shoreline in case of a harmful development project.

In consequence, all these constituencies help the waterfront to be developed healthily and can change the urban context easily.
3.2.2. Historical Preservation on Waterfronts

Waterfronts are historically and culturally unique and significant places. These historical and cultural features, resources are different in each city depending on the age and the location of the city, and they have great impact in determining the urban context of the urban waterfront. The resources include; military installations, fishing facilities, markets and trade centers, shipping terminals, warehouses and municipal buildings. (Gezim, Kiper, 1991)

These features may be reused or not, in a redevelopment project taking the historical importance, condition and ownership into consideration. If they are sound old buildings, adaptive-reuse takes place for uses that will be economically viable in the area. This process also may be supported with restoration. (Gordon, 1996). For example, a historical warehouse can be redeveloped for a unique use for mixed-use containing offices, residential units and commercial space. The interiors are adopted to new use/s and the exteriors may be restorated to revitalize the historical heritage of the waterfront. For example, in Boston, Union Wharf which was built in 1840, a granite warehouse has been converted to residential and office condominiums.

(Figure 3.7)

These adaptive use of historical and cultural features enhances the waterfront and gives information about the old physical environment in the city.
3.2.3. Access to Waterfront

The liveability of a city depends on the transportation system. Accessibility from one point to another is an important factor that determines the location of uses and rents. So, waterfronts being a public place, should be easily accessible for both land and water transportation. Here, we have to explain what the accessibility is. Accessibility is a function of travel time, distance and comfort. Physical, institutional and psychological barriers affect the accessibility. (Robert, Wagner, 1980)

Three barriers cause problems and slow down the access and even prevent it.

Bridges, tunnels, highway systems across waterways and along shorelines and railroads are kinds of physical barriers. (The Ministry of Urban Affairs, 1987). They prevent or make harder the access to waterfront and reaching to the water's edge becomes impossible. The construction of these features is encouraged by the availability and the underutilization of the waterfronts. In the end, this situation reached to dramatic and unbelievable levels in many of our waterfront cities. Bridges and tunnels affected the water
transportation and the street patterns that serve it. They became completely obsolete and new roadways were needed to support the tunnels and bridges. So, water transportation lost importance and became unfeasible because of the great demand on bridges and tunnels and new highway systems.

Railroads that have been serving shipping and industrial facilities, for many years, are one of the physical barriers. They separate the compatible functions from each other and block the waterfront. (Ketchum, 1972)

In addition to previous physical barriers, waste water treatment facilities, utility structures along the shorelines and electric generating plants restrict the access to waterfront.

Institutional barriers are second kind of barriers that affect the accessibility. These are the military installations and government research facilities. Although, if it is possible to reach to water's edge in physical meanings, it is forbidden because of governmental and military reasons. As understood, the base is the economical, legal and political conditions and also depend on the special use. For example, in our country the military services along waterfronts prevents the direct access to waterfronts.

Psychological barriers are generally the results of the two types of barriers mentioned above. Also, the safety of the area and the activities can be psychological barriers. The removal of the physical or institutional barriers cannot attract people to waterfront as people adjusted to their being there. This is a psychological barrier and can be removed only by changing the public's image of the waterfront as an inaccessible zone.

3.2.4. Visual Properties of The Waterfronts

Waterfronts have visually impressive characteristics and provide relaxation in the chaos of the city. Visual character is a function of its visual resources and the viewer response to these features. (Gordon, 1996) Four main issues determine the visual character of a waterfront.

• Form
• Texture
• Vegetation
The form, texture and special features usually make waterfront attractive. The composition of the waterfront features give a visual character to the waterfront. The vertical elements that sit on shoreline or sometimes frame it, affect the view. The configurative contrast between land and water influence the perception and in a way, changes the image of the waterfront.

Texture, the visual texture is the part of the visual character. The kinds of surface materials used in the area such as brick, granite, wood, steel and glass have respective perceptual effect on people. Also, the movement of flags and boats on water make people to enjoy the visual texture. (The Ministry of Urban Affairs, 1987)

Vegetation, by softening the hard appearance of the physical structures on waterfront, enhances the visual character. Waterfront parks are rarely the natural shoreline vegetation give relieved characteristic to the area.

The special features found along water's edge may be marinas, ship repair facilities, ferry buildings etc. As they are different from other uses, they take more attention along waterfronts and affect the visual character.

The physical characteristics, form, texture, vegetation and special features, are not the only determinants of the visual character. They form the physical base but the perception of public and the viewer response to these physical components are more important for its liveability.

Viewer response is a function of two variables consisting of viewer exposure and viewer sensitivity. They are both dependent to the visual stimuli.

Viewer exposure changes with the position of the observer in relation to a city's waterfront. Distance, elevation and movement of the viewer make the visual character changeable. The range of vision increases with the increase in the height of the point of observation. The distance to waterfront increases or decreases the ability to see details of an object. While moving, for an observer the smaller the distance, the greater the ability to see the details. (Lynch, 1967)

Viewer sensitivity refers to the perceptivity of different viewer groups to the visual environment. People perceptualize the visual environment according to their opinions, values, preconceptions and experiences and of course, they
are not identical. All of them influence their impression of a waterfront’s visual resources.

3.3. Jurisdictional Character

Government jurisdictions are needed for the ease of management and development of the waterfronts and these jurisdictions are again part of the characteristics of waterfronts. The jurisdictional responsibility should be clearly identified not to cause gaps and problems in implementation period. Many agencies, governmental organizations and institutions, special purpose government groups give the waterfront a jurisdictional structure. These groups vary according to the jurisdictional character of each country. (The jurisdictional character of different countries on development will be mentioned in following parts.)

In this respect.

• Federal Authorities
• Local Authorities
• Coastal Zone Authorities
take part in the administration of the waterfront areas. (Colquhoun, 1994)
4.1. Coastal Planning and Management in Developed Countries

Coasts are natural resources that both have renewable and non-renewable resources. In many countries legislations and some other regulations are done for the protection of the coastal zones in both physical and aesthetical meanings.

Therefore, under this topic, the experiences of developed countries will be mentioned beginning with USA which is the pioneer of the coastal planning and regeneration.

4.1.2. Planning and Coastal Zone Management in USA

Urbanization, industrialization and technological changes cause problems in many cities and in waterbodies. The increase in pollution level, habitat losses both in land and water, the intensively developed cities increased the public attention on these areas. The environmental sensitivity reflected the emergence of the issue and many laws were prepared for the protection of the ecological balance.

In different levels, the development process is handed by different agencies in USA. They have different characteristics and responsibilities. These are explained in following subjects.

4.1.2.1. Federal Agencies

Federal agencies get on the administration of the programs on waterfronts. In USA, these agencies listed below administer programs, but some have direct regulatory responsibility.

1. The Office Of The Coastal Zone Management
2. The Economic Development Administration
3. The National Park Service
4. The Environmental Protection Agency
5. The Department Of Housing And Urban Development
6. The Department Of Transportation
7. The US Fish And Wildlife Service
8. The US Army Corps Of Engineers (Krieger, 1979)

The most important ones are the fourth, seventh and the eight ones.

The Environmental Protection Agency (EPA) is responsible for the protection of water quality of the water bodies and determination of the quality of dredge spoils and the side into which they are to be placed.

To maintain and enhance the fish and wildlife resources and to protect the rights of the public to use navigable waters, The US Fish and Wildlife Service takes responsibility. A developer’s aim must be to reduce potential disturbances providing mitigating measures, in order to get permission for development.

The last and the most important agency is the US Army Corps of Engineers. The agency’s duty is to build and maintain jetties, channels and other public works and administer two regulatory permit programs. One of them is about the activities affecting navigable waters and the other is same with the EPA to regulate dredge and fill activities and all these are authorised under different laws. The agency permits development only in case of the continuation of the public interest in the area. So, the developer should protect the environment and fish and wildlife resources and consider the benefits - costs of the project, flood protection, recreation and other influencing features.

The other agencies’ involvement in the waterfront development depends on the type and the funding commitments in a particular city. They do not function in all types of developments. Generally, in this concern, The National Environmental policy Act (NEPA) and The Office of Coastal Zone Management give responsibility to each federal agency in different conditions. (Lawrence, 1997)
4.1.2.2. State Agencies

State agencies in USA are directly involved in managing urban waterfronts however, federal agencies hand it in a broad framework. The implementation, administration and guidance of environmental protection and control of critical land areas are done by state agencies with state waterfront management programs.

State, while preparing programs has to

- identify permissible land and water uses
- identify coastal zone boundaries
- designate geographic areas of particular concern
- detail organizational arrangements
- determine implementing authority.

(Wrenn, 1983, p.36)

As each state has different characteristics, and unique waterfront areas, the programs made by the states include individual priorities.

"Each coastal zone management program deals with urban waterfronts in a way that reflects the major issues facing the state. It is important to know that distinctions exist in terms of use priorities, boundaries, permitting requirements, and the implementation process." (Wrenn, 1983, p.37)

4.1.2.3. Local Agencies

Local agencies include county and city offices. They are responsible for administration of land use regulations, health, safety and fire protection and provisions for public services such as roads, water, sewer and utilities.

4.1.2.4. Port Authorities

"Port authorities are an established management structure common in commercial harbours throughout the nation. In most cases, these are public agencies specially created to manage local port operations. Port authorities normally have broad legal powers, including bonding authority and eminent
domain and often function as entities separate from local government. They are created either by state legislation as state-level departments or as independent special authorities.

A port authority serves as an overall management structure, with responsibility for publicly owned port terminals, as well as regulatory control over privately owned operations. In addition, a port will have land use planning authority for properties within its jurisdiction." (Wrenn, 1983, P.37)

4.1.2.5. Coastal Zone Management

In 1972, in order to create livable coastal areas and to overcome problems created by the intense development pressures and poor plans on the waterfronts, resulting with habitat loss, erosion, unregulated development, decrease in accessibility and increase in the conflict between the user groups, the Federal Coastal Zone Management Act (CZMA) was enacted. This showed the increased interest in control of uses on the waterfront and development of resources in order to restore and enhance for present public use and for future generations. (Beatley et al., 1994, Owens, 1992)

The responsibility of CZMA is on the federal agency and states are not involved in the program, as there is no requirement for their participation. However, many of them developed programs before. Federal government formulates aims and objectives and a method for the preservation of the coastal zones and provides technical and fiscal assistance to the states and make suggestions related with the development policies.

States request funds through CZMA and get grant from federal government 200000 dollars per year, and can only get for two years. The second years grant depends on the progress achieved in the program. The lacking authority and a sufficient organization within the jurisdiction, the federal approval of funding can not be granted. Also, the state has to identify and map the resources and make a detailed site analysis for the management program. After the approval of the states program financial and technical assistance are provided in accordance with the state's efficient administration on the program. (Brower, 1991)
The federal government provided 46.8 million dollars for this aim in 1990-1991. The managerial assistance was 35 million dollars. Also, for the public use of waterfronts, the acquisition of land is done by the federal government. (Eke, 1995)

In addition, many other organizations and institutions having local members, participate in the management program.

The development issues are formed by the public participation and the piecemeal solutions of each state. There are different management programs are prepared for each and great importance is given to the preservation process.

4.1.3. Planning and Development Process in England

In England, neither a law nor a drawn plan exist. The plans are written and they determine the regional policies and objectives, but nothing is mentioned about urban design scale. The local authorities prepare local plans for their regions and these plans include detailed land use. However, the local authorities' responsibility on administrative control causes problems.

"...The emerging cascade of planning policy for the coast of England demonstrates, particularly, that coastal issues are receiving greater prominence in development plans than they did in the past and that planning authorities are developing more integrated approaches to the coast. ...The planning authorities have a 'land by the sea' rather than a truly 'coastal approach, and that this stems from the limits of local authorities' administrative control." (Taussik, 1996, p. 397)

The coasts as a whole possessed by the kingdom and 1/3 of the coastal land is under preservation.

Federal government provides assistance for preservation. The Ministry of Environment is in charge of local authorities. The local authorities only have responsibility on land. The in-water studies and developments are done by different organizations.
4.1.4. Planning and Development Process in France

In France, the coastal zone problem is handled in three stages. These stages are national, regional and local scales of planning and development.

Planning, Preservation and Development Law enacted in 1986. Before, the preservation was made available with permitting development only just near the existing settlement. The law proposed a 100m. shoreline. Only public use areas were permitted on this zone. In addition the law declares that;

1) Construction of roads is available 2 km. away from the water’s edge.
2) Provincial authority has the right to give permission for construction.
3) Digging is not permitted on the coasts and dunes. (Eke, 1995)

There is also an institution that buys the coastal lands to increase preservation, transfer this land to local authorities and gets finance from the national budget.

The detailed plans are the basic equipment to solve the problems of the city and the coasts but the affect of inevitable technological changes made both the coastal lands and the plans obsolete.

4.1.5. Planning and Development Process in Spain

As in Turkey, the increasing effects of tourism sector in Spain, in last 35 years cause the destruction of coastal areas, in both natural and physical structure. The forests, natural dunes and wetlands etc., were sacrificed to tourism for hotel and resort housing developments with speculative aims. Water pollution, erosion of the sandy beaches destroyed the ecology of both water and land.

In order to protect the coasts, The National Coast Law was enacted in 1988 and proposes a 100 m. of public use zone on coasts. According to the special features of the zone it can be increased to 200 m. in addition.

However, the gaps in laws and the lacking co-operation and oppositions between the central and local authorities provided a base for the private and individual developments on waterfronts without an approval.
4.1.6. Planning and Development Process in Italy

Italy, as Spain, sacrificed her natural coasts to tourism sector. The potentials of Mediterranean countries are the main reason for this result.

There are two types of authorities in the planning process. The regional authority is being given the responsibility of preparing the regional plans and the local authorities are to prepare the local plans to protect the natural environment. Local plans are deficient for the preservation because of the absence of adequate data related with the characteristics of the coasts needed in the planning period. Central authority prepares special plan for some parts of the coast, especially, for tourism activity such as marinas. Although some interventions are made, no construction is permitted within 300 m. Consequently, it is clear that no detailed studies are done for effective management and development of the coastal areas.

4.1.7. Planning and Development Process in Denmark

Denmark has water pollution generally with the effect of industrial factors. In addition it has flooding problem on coasts.

The problems and plans are handled in national, regional and local scales. National scale plans are pertained to the Ministry of Environment, in regional scale regional councils and in local scale local authorities are responsible with planning and management.

The regional and local plans are renewed in every four years, so, that they can determine the changes.

Until 1994, there was no coastal law in Denmark, but the work has been successful done by the Physical Planning Institution which is under the authority of the Ministry of Environment. The prohibition of the construction of secondary housing units has been done to prevent the transformation of the coastal areas to urban areas and tourist area has been stopped. The preservation of the 3km. of shoreline, on which only recreational facilities can take place, and 100 m. (increased 300m. in 1994) of sea from the water's edge is prohibited for any construction. Also, the maximum height of the buildings...
which will be constructed on a shoreline is determined as 8.5 m. This applications are for the undeveloped part of the coasts, but in urban centers urban design projects are done within the characteristics of the city. The most important factor in successful development is the Denmark’s being a small country. It provides gathering detailed information about the whole, therefore, a rational plan can be made. (Eke, 1995)

4.2. The Waterfront Phenomenon in Turkey

Urban waterfront phenomenon in Turkey has begun in 1950’s with the increasing changes in newly developing country. New trends in coastal planning, the increase in tourism sector, the approaches and implementation in planning affected the development of waterfronts in Turkey.

4.2.1. Planning, Design and Regeneration Process on Urban Waterfronts in Turkey

Turkey is a developing country and every thing on every subject is newly being learnt by experimentation. The importance of waterbodies, sea, river and lake, is just being understood in 1990’s.

Urban waterfront is a natural, economical and cultural resource that has to be preserved and cared with great importance. Turkey has an undefinable potential in demand on waterfronts. The waterbodies has been being used for about 80 years; in previous years for agriculture but after 1960’s for only tourism.

The waterfront usage has begun in city centers with the development of harbours, ports, warehouses and silos in these areas. The increase in industrial uses, easy accessibility from other regions and transportation opportunity, the attraction of water in psychological meaning, increase in population as the result of improving industry and the water’s provisions (waste discharge place, so, no treatment plants no expenditures) to the all other uses
with industry made these areas more attracting and also more expensive to live in next years (pollution problems of waterbodies, high population, densely used urban waterfront lands, absence of places to take breath in, open spaces and recreational areas for public use, construction of buildings as a rocky wall as a barrier all around the water's edge). In addition to these improvements, in late 1960's the development of the tourism policy for the improvement of the tourism sector related with the coastal areas injected a new approach to the coastal cities. The policy supported the development of hotels, motels and other tourism related activities and the resort houses. The change in economical base and this policy speeded up the development of the coastal areas and also, spoilt the nature. Nothing is mentioned in the tourism policy about the public rights and public use on these areas.

The cities have not been finished their development period yet and some functions, although are very dangerous for the health of the waterbody do not leave their places, as being near water provides many opportunities. Therefore, not much information can be given about regeneration, as it has the meaning of giving or injecting life to the obsolete, abandoned, vacant land (Oxford Uni. Press, 1979). However, although the development period is continuing and many people and functions are directed to waterbodies, there are some waterfront areas that are tightly wedged and squeezed with residential areas, some functions that have to be replaced because of the problems they caused in the hearth of, especially, the big city, such as shipyards, harbours, industrial functions. These areas require more open spaces, entertainment, recreation and cultural facility areas for relaxation and enjoyment in the crowded city. Additionally, the historical cores of the waterfront cities again being squeezed with high dense development need to be considered with great care. So, the historical cores and the narrow land between the high buildings and the waterbody, the vacant and obsolete lands that occur with replacements need regeneration. As it is required in the cores of the big and overdeveloped cities, the municipalities has the authoritative role on the development of these areas without a totalitarian approach to the whole waterfront but with partial, unintegrated designs made by various architects and urban planners. The filling process is being done with the aim of serving to public along the water's edge.
The planning process has a very short past but there is not much thing can be said about regeneration process.

4.2.2. Coastal Zone Management in Turkey

The coastal laws, regulations and constitution mention about the importance of the coastal development but plans can not be efficiently applied and also, the two dimensional approach to coastal planning and design causes the deterioration of these areas. The waterfronts as natural resources are left to disappearance.

Many institutions have responsibility and right to make policies or the coastal areas. The lack of knowledge of what each organization has about the properties of the uncertainty of the boundary of their responsibility zones and its characteristics cause problems.

Local Governments (municipalities and provincial authority), Ministry of Tourism, Ministry of Forestry, General Directorate of Highways, The Ministry of Public Works and Development are some governmental institutions that can develop policies and make plans for the sector which profitable in their cities. They have different approaches to planning and development of the coastal zones.

The local governments with the approval of the Development Law code 3194 has been given the authorities. In addition to the municipalities, the provinces and the authority on other zones of the city (on especially rural areas). Their plans made to develop their regions caused the determination of the coastal zones. The insufficiency in knowledge and the lack of economical support resulted in the intensive development for tourism facilities.

The development demand on resort housing units and holiday resorts put pressure on the local governments. The lack of development plans and the implementation and the approval of piecemeal plans on coastal land caused difficulties in following years in the integration of these plans as a master plan. The urban fabric concept was not even mentioned about.

The Ministry of Tourism had many implementations on coastal zones relying on the Tourism Encouragement Law, code no:2634 which has been approved in 1982. It stated that the ministry had authority in planning,
programming, managing and budgeting the coastal land which was declared as tourism development area. This land was rented to the private developers for many years with low rents. This was the result of the populist tourism improvement policies. The grants and other financial supports for the development has been supplied for improvement of the national economy.

Ministry of Culture has the authority on the preservation of the natural, historical and archaeological heritage areas with The Cultural and Natural Resources Preservation Law Code no: 2863. The intensive pressures on the natural and historical sites on waterfronts for tourism functions make these areas harder to preserve.

Ministry of Environment has an authoritative role on coasts and in water. The preservation of the natural life within the preservation of water pollution is in responsibility of the Ministry. It has to force industrial plans and intensively developed residential districts, etc. for the construction of waste treatment plants.

The Ministry of Agriculture: The regulation approved in 1989 related with the use of agricultural lands for different functions than agriculture encourages the tourism activities on this land on coastal zones, although there is an agricultural production on these productive areas.

The General Directorate of Highways and the General Directorate Of Harbours and Airports have the authority to search for localities for harbours and airports on coastal zones. The approved decisions of these directorates affect the planning and encourage the functions to have localities in adjacent areas. The harbours and airports create great potentials for the development of coastal zones.

In addition to these governmental organizations, except the coastal law some other laws has explanations related with the coastal areas. These are:

- 618 Harbour Act
- 2863 The Preservation of Cultural and Natural Resources Act
- 2510 Housing Act
- 3194 Development Act
- 2872 Environment Act
• 2873 National Parks Act
• 2960 Boğaziçi Act
• 2634 Tourism Encouragement Act

Besides these laws and organizations there are some international projects supporting the Coastal Laws for the success of coastal zone management. These are:

1) Mediterranean Action Plans
It was signed in 1975 by the countries that have coasts on Mediterranean Sea. The aims are:
• To determine the pollutants and to observe and search for the changes in pollution level,
• To make legal contracts,
• To develop an integration plan for the improvement of social and economical structure with environmental protection in harmony.

2) METAP Coastal Zone Management
It studies on south-west Mediterranean coastal zone. It aims
1) To improve sewer and solid waste systems
2) To propose a new policy and organization and structure for the health management of coastal zones.

3) Blacksea Co-operation Project
The aim is the preservation of both the natural environment of Blacksea and the coastal zones. It was signed by 6 countries in 1992 which have coasts along Blacksea. World Bank other institutions support its studies.

4) The National Committee of Coastal Zone Management
Its aims are:
• to support the studies on preservation of the coastal zones and to increase co-operation between universities, governmental and public organizations for this aim.
• to support and to participate scientific studies and to make publications about the study.
• to create a center for gathering of data and information that will improve CZM.
• to determine, analyse, make studies on the problems caused by the functions on coasts.
• to make the public conscious about the preservation and usage of the coastal zones and to carry out and support educational programs.

5) Tourism Management Project in Mediterranean and Agean Seas (ATAK)

It first began in 1989, with the name Southern Anatolia Environmental Project, and financed with unrequited technical assistance by World Bank, for the determination of the deficiency of the infrastructure that cause/can cause environmental and water pollution. (Eke, 1995)

6) The Blue Flag

The Blue Flag is given the most clear waterfront.

4.2.3. Legislations Related with The Coastal Areas

Turkey as a developing country has very short historical past in coastal planning. The rapid development process began in 1960’s and the coastal law which aimed to create livable and orderly developed urban waterfronts has not been developed since 1972.

There are two main principles of coastal planning that were absolutely based on. These are;

1) The land ownership,
2) The limitations on the usage of the coastal land.

During the Ottoman period, the coasts had been possessed by the government and this was later first in Arazi-i Kanunname-i Humayun (1858), in Mecelle, in Medeni Kanun (1926 and in Constitution of 1961 directly or indirectly had been accepted that the seafronts, lake and the riverfronts all belonged to the public. (Güner, Kiper, 1991) On the other hand all this legislation trials have meant nothing in developing capitalism period because the economic system prevented all.

In all laws it is based on that the coasts are for public use, it is a public property and has to be developed within the public rights and interest. In these laws the coastal land are always limited in length in land direction. For better
In all laws it is based on that the coasts are for public use, it is a public property and has to be developed within the public rights and interest. In these laws the coastal land are always limited in length in land direction. For better understanding of the evaluation of the legislation process and its effects on coastal areas will be given in order.

1858 Arazi-i Kanunname-i Humayun

Everyone has right to benefit from coast and its property is owned by the government. It has permitted the filling operation for gaining private land on coasts.

1876 Mecelle Law, 1234-1237-1264

It states that the coasts are for public use and the government owns its property.

1926 Civil Law code no 643

This law also expresses that the coastal property is possessed by the government. It has been given the first legal definition and the preservation concept on coasts.

Deed Law code no 2644

Part 8 permits land fill through the sea with the aim of gaining private land. In following years, the landownership was prohibited on filled areas.

1933 Building and Road Law (Yapı ve Yollar Kanunu) Code 2290

It states that the shoreland, of land 10 m. in width from the water’s edge, on seafronts and lakefronts is for public use.

1957 Development Regulations (İmar Nizamnamesi) Code 40

The land 30 m. in length from the waterbody (any waterbody) has to be saved for public.

1966 National Coasts Law (Milli Kıyılar Kanunu)

It has not been legalized. It stated that the band minimum 10 m. in length has to be declared as the national waterfront.

1972 Development Law Code 6785 and Parts 7 and 8

The law states that the determination of the distance of construction to coastline will be done with development regulations. If no detailed plans exists for a settlement, the width of 30m. of land from the coastline has to be
separated for the public use. In 1970 the central government announced that in
sea and lakefronts where no detailed plans exist, the historical and tourism
potential areas had to be preserved, not soled, rented or given the rights to
governmental institutions.

Although it was legalized in 1972, it has not been applied since 1975
because of the absence of development regulations. According to this
regulation, nothing has been permitted in 30 m. for the provision of the
continuity of the natural coast for public use.

1982 Constitution, Parts 34-43

In the constitution, it has been declared that the coastal land was in
responsibility of the central government and public rights was more important,
than the personal rights in these areas.

1984 Development Law code no 3194 and Coastal Law code no 3086.

The Development Law provided municipalities to make and implement
plans. The central government gave authority to local governments, to
municipalities and to provinces. Th authority change effected the coastal cities.
The insufficiency of definitions and of public rights concept caused the law to
be cancelled in 1986.

The coastal Law stated that everyone has right to benefit from coasts but
there were some exceptions. The law also permitted the construction of some
plants that had to locate on coasts, such as industrial functions related with the
water product, tourism, educational and sport areas and some other functions
that required coastal locations. The secondary public use areas on coasts were
transformed to private developments. Also, the filling process were made
possible and the Ministry of Public Works and Development has been given the
authority for giving permission and approval of the plans. It stated that the
preservation area on the shoreland had to be minimum 10m. in width in a region
where a detailed plan existed, and in other areas this distance was increased to
30 m., but nothing mentioned about this preservation band in places where no
settlement existed. All private buildings which were constructed before 1972
have provided amnesty and the coastal functions, such as harbour, marina etc.,
and economically effective industrial and tourism facilities, developed before
1983 were decided to be preserved.
This law has had negative effects on coasts. The permission was given for some uses that can deteriorate these lands.

In 1986, it was declared that some of the sections had to be cancelled. The cancellation would cause deformations in the whole law and the law itself cancelled as a result.

In order not to create gaps in implementation, Notice Code no 110 was approved. It aimed to work with making use of the previous laws and regulations, so it combined 3086 and the Parts 7 and 8. It limited the functions which would be located on shoreland (tourism facility areas, harbours piers, infrastructure which are required by the public and useful for the preservation of these lands) and on land filled areas (parks, playgrounds, roads, parking areas etc.). Consequently, compared with other laws, it limited the functions on coastline, on shore and on filled areas. It also made arrangements on administration and approval of the plans related with the determination of the coastline and filling process and increased the penalty values.

It was cancelled in 1989 and the last coastal law code no. 3621 was approved.

The law preserves all waterfronts and shorelands of seas and lakes and public open green spaces on coasts. It states that the preservation of the first part of the shoreland about minimum 20 m. in width in where a detailed plan will be done in a short time period, min. 50 m. where no detailed plan exists and min 100 m. where no settlement exist.

The coastal land is in public property and the government protect its characteristics and everyone have right to make use of it. It also mentions and gives detailed information about the daily use and facilities on coasts and the piecemeal development.

It provided only the individuals or small groups to benefit from the coasts, and therefore, public rights was not considered. However, in the time period between the two laws, the absence of a law created speculative and intensive developments, especially against the public rights. The local detailed
plans were applied and included assistance to the private sector for tourism investment on coastal lands to get more profit from tourism sector in economical meanings.

This law, although aimed to preserve public rights on coasts, the misinterpretations of the law caused inevitably ugly results. The "public rights" concept were handled in economic sense and many natural zones were rented to private sector with this aim, but the result was the disappearance of the natural green public zones as parks, picnic areas, beaches etc, for the sake of hotels and other tourism facility areas.

It was cancelled in 1992 and the Coastal Law code no:3830 was approved in 1992.

**1992 Coastal Law Code No:3830.**

It is the law which is in force. Many coastal development and management in various countries was examined for the preparation of this law. The result of the examinations shows that in many developed countries there is a clearly determined coastal band. For specific natural and cultural coastal zones are preserved as a hole, but the width and the usage of the shoreland in the region where the development is proposed are determined by the planner, considering the physical and social structures of the region or city. This is rational and a totalitarian approach in planning.

The coastal law should be flexible as all coastal land in Turkey has not involve the same characteristics. They require different planning approaches because of geographical, developmental and social differentiation. Also, the rational planning requires detailed information about coasts. The lack of base maps and other maps in different scales make it impossible. So, the lack of knowledge causes deterioration of our coasts.

With this law the width of 20m. in previous law was increased to 100m. and the 50m. where no detailed plan exists was also increased to 100m. This was the result of the examination of the developed countries, but the lacking issues prevented success on our coastal developments. The shoreland to be preserved is accepted as 100m. in width. Nothing can be made on the first 50 m. except walkways and recreation facility.
In filled areas, the law permits the construction of infrastructure related with water and land transportation and recreation area including parks, playgrounds, open sport areas, restaurants, cafes, administrative buildings, picnic and entertainment facility areas.

This law can be said as the most embraced law that widens the concept of preservation of natural and historical values of waterfronts and gives clear definitions related with planning and implementation. The sensitivity to the issue is mostly performed with this law and it is based on the public rights and use on waterfronts.

The analysis of these laws showed that the public rights have to be considered as the base point of developments and planning. In laws very limited area of coastal land through land direction has been declared as the preservation zone, but the success in coastal zone planning, is directly related with the width of the band on shoreland.

4.2.4. Problems and Reasons of Problems of Urban Waterfronts

The rapid increase in industrialization and urbanization with the increase in technology caused problems on urban waterfronts. The problems and their reasons can classified as following:

- The great priority given to tourism sector,
- The policies and deficiencies in legislations related with coastal areas,
- Change in structure of, holiday habits of and the movements in the society,
- Natural and historical preservation on historical waterfronts,
- The problems related with the local governments and other ministerial and organizational problems on developmental and managerial authority on waterfront land,
- The private land ownership and its causalities formed with the economic system,
- Lack of public interest and organizations and the absence of social and cultural accumulation which support the application of precautionary measures on waterfronts for the sake of public,
- The economic system
are the bases of the problems on waterfronts. Also, they have inevitable effects on planning and design.

4.2.4.1. The Problems Caused As The Result Of The Priority of Development

The historical places and natural beauty of Turkey attract many people from abroad and inside. Foreign tourists make use of most beautiful natural and historical features of waterfront cities. So, the unique characteristics belonging to Turkey excite and attract many tourists increasing the usage of waterfronts.

The tourism was seen as one of the most important sector in Turkey's economical development. (The other is industry). As the situation is like this, all investments were made on coastal areas for national and international tourism activities. Generally, hotels, holiday resorts, marinas etc. which prevent public use of and access to waterfronts and public right on these areas were constructed along waterfronts for only specific social group, as shown in figures 4.1, 4.2.
Figure 4.1. Hotels in Antalya
(Source: Ş., Vanlı, "Tatil Yapıları ve Bir Ulkenin Mimarlık Yaşamı" Ege Mimarlık, 24 Mimarlar Odası İzmir Şubesi, İzmir, 1997, p.29)

Figure 4.2. Marina in Marmaris
4.2.4.2. The Problems Related With The Change In Social Structure And The Movements From Winter Location To Summer Location

The change in social structure, the movements in summer from winter locations to water’s edge, change in holiday habits were resulted in the transformation of natural waterfront resources to a high density development in waterfront cities. The increasing levels of income, education, cultural values of the community cause an increase in demand for waterfront location. The people living in the chaos of the congested city need relaxation. The water’s power to enjoy people is the main factor for waterfront choice. The result is the rush to these beautiful resources.

4.2.4.3. The Problems caused by Private Land Ownership and Speculative Aims On Waterfronts

The private ownership and speculative aims on waterfronts also caused problems and increased the value of land. In order to get maximum profit from this valuable properties, the profit making functions were constructed without considering public rights on these areas.

4.2.4.4. The Problems Created by Resort Housing Development

The resort housing (summer houses) problem is the result of the change in holiday habits. The people to have a cheaper and a longer holiday prefer to own a house in waterfront cities. It has a history of about 80 years but showed itself in the second half of 1950’s. The transformation of agricultural land and small housing units to secondary houses have taken place in 1970’s.(Toplu Konut İdaresi Başkanlığı, 1996).

From that time to today, it had a rapid increase and all resorts is full with secondary housing units. They occupy a great land without offering green areas and open spaces for public and have a disturbing and annoying view in
some of our cities. Figure 4.3. shows the development of secondary housing in some waterfront cities.

Figure 4.3. The Secondary Housing Development

4.2.5. The Problems Related with The Policies, Legislations, Organizations and Governmental Institutions

The policies, legislations and the conflict between organizations, local governments and central government are one of the factors that cause problems. The lack of communication, responsibilities, lack of knowledge of each other make the problem harder to solve. There is not a totalitarian approach in policies and the waterfronts all over the country are handed separately. The different planning and development policies at different scales and the application of legislations considering the whole coastal areas, both rural and urban, same can not solve the problem but make more complex.
4.2.4.6. Environmental Problems of Waterfronts

Cities have been mostly developed on waterbodies. So, the environmental and historical heritage require preservation. Water provides the continuity of life and also used in industry, agriculture, production of energy, fishing, transportation etc. It can also be supportive in esthetical, cultural, recreational facilities. It has to be kept clean in order to benefit from water and its products, else, it can be very dangerous for human health and in aesthetical meanings.

As known, waterfronts are natural resources and involve renewable and non-renewable resources. The living things and the products of waterbodies need special care in the planning, design and development process and later. The environmental problems of waterfronts are the results of some basic issues. These are rapid urbanization, increase in population, secondary housing, lack of infrastructure deficiencies, technological changes and improvements, industrialization, the increase in number and quality of the vehicles, marine transportation and the private land ownership on waterfront land. These factors have direct effects such as air pollution, water pollution, crowded and dirty places, and indirect effects as the loss of biological resources both on land and in water.

The environmental pollution has different characteristics in developed and underdeveloped/developing countries. Rapid technological and industrial improvements cause pollution in developed, industrialized countries, but in developing and underdeveloped countries the haphazard development, incoherent economies, inadequate planning policies etc. affect environment. In order to overcome the problems, the subject should be discussed and handled in economical, political and ideological base. (Keleș, 1993)

The intensive development on coasts destroys the ecological balance in both in water and on land. The most important part of the sea for living organism is the first 100 m. from the coastline. This land in water is being diminished by the functions on coasts. The increase and decreases in the degree of ph, CaCO3, the percentage of total salt, Cl, SO4, Na, organic
structures in soil cause ecological death. Also, the plants on sanddunes that tightly hold the soil disappear. In addition to the problems in soil, the increase in turbidity (mg/lt) and ph values can be seen. (ERDEM, et al., 1994)

4.2.4.7. The Problems caused by The Economic System

The economic system of a country determines the usage of all the resources in that country. (Kartal, 1979). As mentioned in previous subjects, the waterfronts are also the important resources that a country has. Therefore, the effect of the economical system can be strongly felt on these areas as well as the other urban land in both social and physical structure of the cities.

The improving tourism activities affected the economy and it is the important factor of the economical changes since 1970’s. The transformation of the social structure to capitalist society with the change of economical base had changed the use of all urban land and the waterfronts. The developing capitalist period in Turkey had a direct affect on the property values on urban waterfronts, and the changing social demands, social structure and holiday habits. (Kartal, 1979) All the legislation trials on the urban waterfronts, to protect from disaster, have meant nothing in this economical system period because they were blocked off.

Now, it will be better to explain what the capitalism is. Capitalism is the economic system in which the production tools belong to private ownership and there is the freedom and right to an agreement between two or more owners for that production tool. (Oxford Uni. Press, 1979). In this system, the owner of the production tools has only the aim of getting maximum profit. By this way, the landowner has the right and wish to maximize his profit form his land. So, the waterfront lands became a trade good in spite of the regulations on these areas. This is the result of the economic system.

Nevertheless, it also determines the social groups in the community. The clarity of the different income groups is also the result of capitalism. The high income group is one of them and has an accumulation of capital and changing habits according to what they own. The change in their leisure time and holiday habits and preferences affected the waterfronts. There occurred a great
demand on these areas. The change caused by the economical system in social structure determines the new form and change in physical structure.

That is to say, capitalism is/was and will be the base and cause of our deteriorating waterfronts and can not be prevented with legislative efforts.

In addition to the information given above about the effect of the economic system, it is necessary to mention about other countries for a clear understanding of the situation.

Capitalism is effective in western countries, mainly developed countries as England, Sweden etc. and it reached to its mature period in these countries. When they are compared with Turkey, it can be clearly seen that the maximization of the profit gained from the real property is the main aim but nothing unpleasant about waterfronts can be met because nobody (an individual person) has speculative aims on waterfronts, as they get much profit from production instead of less from speculation. So, they invest their capitals in production emphasizing the properties of the mature capitalism. (Kartal, 1979)

In Turkey on the contrary, the system can not be described as a mature one. There are speculative aims on land and higher profits are gained with speculation on waterfronts as Turkey has great tourism potential, but only in summer. So, these areas are generally used for not production but for consumption. As a result, the national capital which is required for new investments for public interest on waterfront land or in other parts is not used effectively.

Therefore, capitalism differentiated the income groups and changed their habits. The personal benefits became more important than the public rights on waterfront areas and legislations could not solve the problems occurred. However, even the public organizations became effective on any decision on these areas and get positive solutions, so that the ownership rights on land can not impress the public rights.

The effect of the economic system is seen in both social and physical structure which also includes the environmental protection. Under these circumstances, the disability of the protection of the waterfronts occurs. The natural environment is also a profit making tool as the aim is profit.
maximization. Unless the public rights on environment is objectively handed the aim of the preservation of the environment can not be achieved. The discharge of industrial wastes to rivers, seas or to lakes cause water pollution and can damage non-renewable resources and life in water. This must be the problem of the whole city or country and the whole public, but the aim of personal profit maximization prevents this.

4.2.5. Suggestions on the Development and Planning of Coasts

1) A totalitarian and rational approach should be improved.
2) Organizational structure should be redeveloped. There should be cooperation rather than any conflicts and disagreements in between.
3) The preservation of the ecology, historical places and public use and rights should be basic aim.
4) Integration to the urban fabric should be supplied in designs.
5) Making use of developed countries experimentations in coastal planning, management and budging.
6) The local governments that has the authority in planning and management of coasts (waterfronts) have to come to an agreement and develop their coasts in integration with each others.
7) A detailed analysis of the existing situation and characteristics of the coasts, from Artvin to Hatay should be made for gathering more and correct information, with a more realistic approach to planning.
8) Public interest, public participation and other public institutions should be involved in decision and planning period.
9) All strategies, policies and design guidelines should include; land ownership patterns, the properties of the coastal line and the hinterland zone and the quality and quantity of the public areas in these areas.

4.2.6. Functional use of Urban Waterfronts in Turkey

Turkey has a great seafront area which is about 8259 km. in length. This value includes the lengths of the coastal lines of The Agean, The
Mediterranean, The Black and The Marmara Seas and the islands. 27 cities make use of being near sea.

The Aegean Sea Coastal Length: 2805 km.
The Aegean Sea Coastal Length: 1557 km.
The Aegean Sea Coastal Length: 1190 km.
The Aegean Sea Coastal Length: 1634 km.
The Aegean Sea Coastal Length: 1064 km.

In addition to these, there are also 50 natural and artificial lakes, and about 30 great rivers flowing through many cities.

Therefore, there is a great potential in Turkey for waterfront uses. This potential and the great demand on this land have already been and today, again are the subject of development period of urbanization and industrialization. The ease of accessibility, increase in tourism and trade, change in social and economical structure forced the waterfronts to develop, and later to redevelop with obsolescence of these areas in order to satisfy the needs of both public and the city itself.

The waterfronts are basely used for many activities. Ports and marinas, beaches, military service areas, shipyards, fishing and trade activities, warehouses and storages, industrial functions and their service areas (supporting functions, such as residential areas, commercial areas, educational facilities, etc.) and recreation facility areas are of some kinds of uses that prefer localities on waterfronts. However, many other uses occurred for this locality with the tourism policies developed in 1960's. The secondary housing areas filled the agricultural lands along the sea transforming the green view to a concrete scene, of course without a sufficient infrastructure. The development of big hotels, motels and the holiday resorts on the natural waterfronts is the other result of tourism. From the cities on south coast to the ones on the west have many great hotels developed just near the sea.

These functions vary according to the characteristics of the cities. For better understanding of the localities of functions on coastal areas, figure 4.24 will be helpful.
Coastal cities on Mediterranean Sea can be listed as following from east to west direction:

*Hatay, Adana, İçel, Antalya And Muğla.

The Aegean Coastal zone involves:

*Aydın, İzmir, Balıkesir, Çanakkale And Edirne.

The Marmara involves:

*Istanbul, Tekirdağ, Çanakkale, Balıkesir, Bursa and Kocaeli.

The Black Sea coastal region involves:

*Kırklareli, İstanbul, Kocaeli, Sakarya, Bolu, Zonguldak, Bartın, Kastamonu, Sinop, Samsun, Ordu, Giresun, Trabzon, Rize and Artvin.

The examination of the tourism facility map shows that the tourism potential has limitless in southern coast. The density of the functions is very high. 10 of the 13 marinas exist in this region. Tourism mostly affects the southern coastal zone. 9 camping, 9 caravan camping, 2 harbours, great number of hotels, recreational and historical places, natural beaches, holiday resorts, secondary housing developments, agricultural land in some parts, service and camping areas of some governmental institutions have localities.

The Aegean Sea has the longest coastal area but a little weaker than the southern coast as the sea water is a little bit colder. 3 marinas, 4 caravan camping and 9 camping areas, 2 great national parks, other tourism activity areas, agricultural land and also secondary housing areas form the functions.

The Marmara coasts are not varied in functions. It acts as a transition point between the Black sea and The Aegean sea, which makes it polluted than the others. It occupies the 6 harbours. Shipyards, Maritime Military zones are other functions and on the south coast there are also caravan camping (2) and camping areas (4).

The Black Sea is coldest of all seas and the physical of the coast (lining of the mountains parallel to sea) and microclimatic properties make this region less used by the tourists. Not the sea, but other features on land encourage the potential. Natural sites, historical places are of some. Transportation activity mostly takes place, so that 8 harbours serve for this aim. It is interesting that no marinas exist on the Black Sea coasts.
The rivers in urbanized, industrialized and more populated cities are polluted by wastes. The industry, settlements and agricultural land lies along the rivers. The industrial disposals, domestic wastes, agricultural wastes, etc. destroy the rivers' natural environment and quality of water. However the situation is like this in many cities in west, the river in many other regions are used with recreative aims. (Rafting, fishing, etc). Adana, Antalya, Karaman, Giresun, Erzurum and Muğla have water recreation in the rivers flowing through their boundaries.

Generally, industrial functions choose location on rivers in order to get water and to discharge their wastes.

Many dams were built on rivers to supply the needs of agricultural land and drinking water for the city.

In Turkey we have 50 lakes. They are generally away from the urban centers. There are two types; the natural and artificial ones (lakes formed by the dams). Some of the natural lakes recreational functions around and house many birds as in Manyas. Some have dense salinity and salt production industries locate near these lakes. As many of them are away from dense development they are not polluted as well. Fresh water provides many opportunities for the people. The artificial ones are generally used for watering the agricultural land around.

4.2.7. Waterfront Development in Various Cities in Turkey

The cities on western and southern coasts have great tourism potentials having natural and historical values. In many cities, the waterfronts has never been developed taking the preservation regulations into consideration. The populist policies of that time, the economic system, the lack of coastal zone management program, and the absence of an authority on coastal zones left these areas to their faith.

The tourism policies (in 1960's) and investments to increase the international tourism are on the contrary of the other urban planning policies on urban waterfronts. The blanks and insufficiency of the coastal legislations caused the deterioration of these areas. The image of the cities, the aesthetical
values, views obtained from the sea and the physical structure have been changed with the construction of marinas, secondary houses, high-rise buildings as a wall and the highways as a barrier along the waterfront. The increased property values also increased the construction of the 8 storey buildings and the gardens were destroyed for the service areas of the industrial uses and building construction co-operations. The high dense development cause a monotonous and an annoying scene on these areas.

After all, the developments took place without integration to the neighbouring sites and became isolated places. The lack of a totalitarian planning approach and the lack of importance given to the basic urban design issues on waterfronts and the conflicts between public and personal rights and again the conflict between the governmental institutions (municipality against other institutions or vice versa) caused the formation of irregular, unplanned settlements and cities. This situation also affected and minimized the area of public and open spaces in the city, on water's edge for the whole community.

The figures 4.4, 4.5 show the inevitable situation of this kind of development.

Figure 4.4. Hotels in Belek- Antalya
(Source: "Hotel", Turistik Oteller Birliði Yayını, 2, İstanbul, 1996)
Unplanned/planned rapid growth within the knowledge of local governments is completely the result of the populist policies as mentioned above. Infrastructure and the other services required for the rapid growth are not in parallel with the developments. Consequently, all resources belonging to waterfront are being consumed in these cities.

4.3. Regeneration in Developed Countries

The cities in developed countries have some physical and social problems that occurred with the industrialization period with the increase in accessibility, with easy access by motor vehicles and increase in public transportation 1920’s and 1930’s. During 1960s and 1970s, the city center was invaded by the industrial plants and commercial activities and many middle and
high income groups left the city, preferring to live in the suburbs where no congestion existed. They left great areas of urban dereliction, vacant buildings, unemployment and poverty. Many people were left in the city center with no jobs available, especially the poor.

Decentralization to the suburbs and the losses in the inner-city population created abandoned and obsolete areas. In order to stop the movement to the suburbs that cause recessions of economy, governments decided to make interventions by regenerating the deteriorated parts of the inner-city. Upper and middle class population relocated in the inner-city where a satisfactory conditions and a liveable environment were available after the regeneration process.

Regeneration became an important issue for many developed countries in USA, England and in Europe. There are different types of organizations that have roles in regeneration. These can be "Top-down Corporations, established by the central or local government, and Bottom-up local neighbourhood group. For successful projects there has to be bottom-up organizations but a leadership at the level of the central government is needed to provide cooperation between the organizations that have roles in the regeneration process. (Colquhoun, 1994)

Waterfront in one of the places that required regeneration with the changes in technology, industry and commerce activities. The abandoned warehouses and derelict ports and docks have been the part of regeneration process in big cities which wanted to increase its economic life. So, the waterfronts became the savers of some cities as many tourists were attracted to the inner-cities.

4.3.1. The factors of Regeneration

Regeneration is an important process for a city to revive the economy in the inner-city. The problems and factors of problems should be supplied for a good and a realistic regeneration process. "Successful urban regeneration cannot therefore, be achieved in a vacuum. It requires cities to produce a comprehensive strategy based on local needs and opportunities. It also needs
commitment and flexibility of approach to respond to new opportunities and changing circumstances as they arise. It also requires the uneven economic growth between the innercity and the outer areas to be controlled by planning at metropolitan/regional level". (Colquhoun, 1994)

The factors in many developed countries, in mostly industrialized cities that affect the physical structure are the facts, that show regeneration is needed in various parts of the city. These can be listed as following:

- **Economical and social background** (The decline in the innercity economy and return to the city center from suburbs)
- **Poverty and unemployment in the innercity**. (The need for working places for the poor and the immigrants)
- **Housing** (The need for social housing for the poor, the unemployees, the ethnic and minority groups, young people who want to establish their own home, etc.)
- **Homelessness** (The need for pleasant housing and environments for the homeless young people)
- **Education** (The need for educational services for different ethnic groups in the innercity in order not to make the education harder for the teachers and for the students who spoke several different languages.)
- **Health** (The need for healthy environments for the people living in deprived areas in order to get rid of the diseases and to increase the physical and mental health.)
- **Law and order** (The need for humanized and safe environments created against the crime and vandalism.)
- **Transport** (The impact of highways, raised highways and the need for underground transportation for a safe and healthier life.)
- **Dispersal of retailing** (The need for pedestrianized shopping areas in the central city which are accessible by public transport with the removal of the large department stores to the suburbs.)
- **Re-use of old buildings** (The possibility of using old, vacant buildings for different uses, conservation)
- **Leisure and culture** (The need for recreational, sport and cultural areas in the innercity for a good quality of life to attract inward investment.)
• Land use and ownership (The need for acquisition of land for new development and for effective use of land.)
• Green issues (The need for ecological and sustainable cities.) (Colquhoun, 1994).

4.3.2. The Issues That Help Regeneration Process

The factors that have political bases can help the regeneration.

• Planning at metropolitan and regional level can control uneven economic growth.
• The regeneration of housing requires investment in the inner city. There has to be well developed housing districts for rent and sale which are affordable by the local community.
• A new concept for work for unemployed people.
• A realistic approach to the land ownership and land values.
• The priority in government policies should be given to the regeneration projects.
• Good design with effective planning and urban design for the image of the city.
• A balance between the public care and private enterprise.
• An enlightened leadership which must start at the level of central government.

In addition to these, creative thinking and responsible commitments by the people who have the authority, create achievements in pleasant, successful developments.

4.3.3. Organizational Framework in Urban Regeneration

Many organizations take place in regeneration process and many approaches exist to the organization of urban regeneration. Below, there are some suggestions related with the organizations.
“1) That which perceives the problem in terms of the efficiency of service delivery by government agencies and free enterprise. Solutions are seen to depend on increasing the efficiency of bureaucracy and free enterprise by the use of managerial expertise.

2) That one of the self-help anarchist who is also concerned with services, but argues that they should be locally rather than centrally administered. The quality of the service in terms of the recipients is seen as more important than the actual goods delivered. It also argued by some that centralized systems are in any case incapable of delivering services to a diversified market. The solution is to encourage small-scale self-build projects.

3) The Marxist approach which is insists that there can be no solution until government gains control over the free flows of capital in the private sector. Solutions depend on the political mobilization of the working classes.

4) The approach of the pragmatists and realists who consider that a timid piecemeal solution is inevitable, and who are primarily concerned to work out precisely what is and what is not feasible within the existing political framework. Some people in this camp even insists that the problem is not political at all.

5) The view put forward mainly by people working on the ground that the solution lies in encouraging local grass-roots activity, because existing central and local government are incapable of, and/or uninterested in, coping with the needs of poor and deprived. The most important thing is to desire of local people to control their own lives and work, and the need for them to ‘discover their own humanity’. Policies should aim to achieve people’s aspirations rather than the other way round.

6) The view of those who reject the bureaucratic encumbrances of government controls, and believe in the encouragement of small scale free enterprise activities, both community and capitalist inspired.

7) The view of the ‘one-off fixers’, who want to put in consultants, decide on priorities, timing and budget, and then send a task force in to do the job.”

(Pahl, 1977, p. 297-298)

For a good organization some factors should be supplied. These are:

- An initiator,

- An assessment for the economic potential to prevent impractical, nonfundable and impossible solutions.

- A strategy that has mostly two or three parts and has a clearly defined targets.

- A proper legal and financial framework that prevents conflicts between the developers and the planning authorities.

- A sensitive approach to local people. Their hopes should be learnt.
An aim of raising people's living standards, widen their choice, improve housing, environmental and economic conditions providing public participation. (Colquhoun, 1994)

4.3.4. The Effect of Urban Design in Regeneration

Regeneration is a process that has to be considered in urban design scale. Urban design forms the hearth of the regeneration and a survival tool for the city (Barnett, 1984). The importance of urban design can be explained with the definitions given below.

"Urban design is a part of a visionary building process, a focus for community action, and an affirmation of confidence in the potential of a place which is attractive to business investment”. (Maccormac, 1993, p.3).

The integration to the urban fabric, creation of livable places and the increase in public quality can be provided with only urban design with three dimensional solutions. The local characteristics and the requirements of local community should also be determined with a realistic design.

Urban design is an effective tool in improving the characteristics of cities. In four ways, urban design can help the cities. These are:

1) Quality (Improve quality of life in city)

2) Transport (Efficient public transport in the city, adequate car parking in downtown and good links to the national highway system).

3) Open Space (The good relation between the parks, plazas and open and closed green space)

4) Townscape (The good designed and efficient townscape elements)

The design quality should be considered at first and given more important. The qualitative approach to design and to regeneration make people more enhanced with the development. For a better quality, the design guidelines for regeneration should be as following:

1) In relation to buildings, landscape and public places, a sound mechanism for maintenance is crucial to preserve both amenity and investment.

2) Shotgun marriages between architects and developers are a recipe for disaster. Developer/architect competitions should be
encouraged where there viable. Good architects need to seek it out up-and-coming developers and actively sell their skills.

3) There should be a considerable diversity in architectural approach, but within a strong urban design framework.

4) Landscape should be a key ingredient in early preparation of a design framework for a development.

5) Defensibility should be high on any design check list. It's no use producing a good-looking building in or landscape if it has pockets of indefensible space which are an invitation to crime and vandalism.

6) Effective mechanism to maintain well-designed buildings and environment are a good investment, but are too seldom adopted. In landscape at least, this is best achieved by including provision for the first five years' maintenance in the capital budget.

7) Conservation should be regarded as an integral part of the planning process, on a par with, for instance, density - not as "the cream on the top".

8) Continuing public involvement is a prerequisite for good appearance and amenity, especially in housing. Poor communication is a recipe for disaster in urban regeneration projects.” (Aldous, 1988, p.14-17)

4.3.5. Regeneration Process in USA

The redevelopment and regeneration projects are handled by the local governments as mentioned in previous parts. Federal government provides finance for technical assistance and the state governments have the responsibility to find a developer for the design and implementation. For this aim, it establishes a development authority that will manage and redevelop the derelict areas in success.

The regeneration in USA has two branches.

1) Revitalization of the downtown areas,

2) Neighbourhood renewal and housing. (Gordon, 1996)

Housing activity is more significant in developed cities than the others and is handed to a more wider extent and many housing regeneration projects have been done.
4.3.5.1. Waterfront Revitalization

Many downtowns are located on waterfronts. Therefore, downtown revitalization includes the development of the waterfronts. The port cities of the past have obsolete waterfronts today. The migration of shipping industry to deep waters to function better, the loss of smaller, locally based institutions and the growth of large shipping organizations caused decaying and decline of the waterfront areas in 1950s. Generally, festival market places were designed for the increase in economy. (Breen, Rigby, 1994)

The private/public partnership is chosen for the investment in regeneration. The ratio is generally 1 to 4.5 or 1 to 6.5. This partnership between the local government and the private sector is a very important and efficient factor in revitalization. This was explained as following:

“The magic recipe for urban revitalization...seemed to consist of a new kind of creative partnership...between the city government and the private sector...relatively few strings were attached. It also seemed to consist in a frank realization that the days of the urban manufacturing economy were over, and the success is consisted in finding and creating a new service sector role for the central city. Bored suburbanites would come in droves to a restored city that offered them a quality of life they could not find in the shopping mall. Yuppies -or young urban professionals- would gentrify the blighted residential areas close to downtown, and inject their dollars into restored boutiques, bars and restaurants. Finally, the restored city would actually become a major attraction to tourists, providing a new economic base to the city.”
(Hall, 1994, p. 47)

Consequently, revitalization of waterfronts brought new life and employment to the city centers. Also, the developments encouraged tourism facilities on the waterfronts.

4.3.6. Regeneration in England

The need for regeneration in England was first occurred in 1972 with the obsolescence of the innercity areas. The governmental interventions to the issue has been directly related with the encouragement of private sector to be
involved in the regeneration process. Many agencies and a large number of 
30funding measures have been established for this aim. These agencies were 
30semi-autonomous and centrally accountable institutions. These affected the role 
of the local authorities. In addition to the agencies mentioned above, National 
Urban Regeneration Agency (NURA), for the provision of greater funds to the 
agencies to solve the innercity problems, and The Urban Development 
Corporations (UDC) for uplifting the derelict industrial areas on the waterfront, 
in the center, have been established. (Taussik, 1996)

UDC's responsibility zone included water related features as derelict 
docks, rivers, sea, estuaries and canals. The development control and the 
compulsory purchase powers made the UDC owner of much of the land in their 
responsibility areas.

UDC got funds from the government for the acquisition, purchase and 
reclamation of land and to improve the environment and the development on 
these areas. The local governments were disabled in their works as they 
could not get more grants for other municipality services. It was said that UDC 
was non-democratic as it was not in relation with the local governments and 
the local community for their requirements. (Savitch, 1995)

4.3.6.1. Waterfront Revitalization

The waterfront development gives clues about the regeneration policies. 
There are mainly riverside and dockside developments. UDC is in charge of 
many urban waterfront regeneration projects. The mixed-use developments 
take place including housing, offices, workshops, hotels, small warehouse 
units, leisure buildings as cinemas, cafes, restaurants, etc. The quality varies 
although there is no shortage of finance. The reason of this is the priorities of 
developers and financiers being more important than the design qualities, and 
public needs.

There is a market-led approach to the regeneration process. "Funding 
from public resources is largely only available to support private sector 
development and a small amount by housing associations. The social tasks are 
concerned with bringing derelict land back into use and in this way to
strengthen the urban economy as a whole. Few of the projects have had any objectives which involve a local community.

4.3.7. Regeneration in Europe

The industrialization and technological changes also affected the European countries and cities. The replacement of old industrial plants caused derelict lands. Same problems occurred but the solutions were different than the USA's and England's. In Europe, there is a strategic planning and greater public investment on the regeneration areas. On the contrary, in USA and England there are market-led approaches and market forces on these areas.

In European countries, "the politicians and planners perceive their cities as single entities. National and City governments have made public funding available to stimulate investment for the refurbishment of the existing built environment and for the provision of new infrastructure at all levels - roads, railways, public transport, public buildings and spaces, housing and environment" (Colquhoun, 1994, p. 115).

Central and Local governments provide funds for regeneration. There is a European Union that provides European Regional Development Fund for the reduction of imbalance in the community and European Social Fund for promoting jobs. The criteria for funding is the income level per head in the region. It must be below 75 per cent of the Community average. (Thompson, 1992)

4.3.7.1. Regeneration in Netherlands

In Netherlands regeneration has political priority and renewal of older residential areas takes place in many large cities. These areas can either be located on water fronts or in other parts of the cities.

Rotterdam where docks, ship building and transshipping facilities were once more important, now is regenerating these sites. The policy is radical and futuristic. The strategies are based on the creation of commercial and business opportunities in the city center and also meeting all social needs.
The regeneration plan is supported by the effectively managed planning system, so that the strategies become complementary. There is a strong social orientation in regeneration that is rooted from the same belief that the politicians and the local community have about the city's image.

In Amsterdam, regeneration has been done for the provision of social housing areas for the low income groups. The old warehouses built between 1708 and 1829 have converted into social housing in Entrepotdok. The traditional street patterns were preserved and pedestrian walkways and shops were proposed along these walkways along the waterfront. (Colquhoun, 1994)
4.3.7.2. Regeneration in Italy

Genoa is one of the most important ports in both Italy and Mediterranean coast. The replacement of the shipping industry created an attractive public place with the transformation of the harbour to exhibition center in 1992.

Figure 4.7. Wharehousing at Entropotdok

Figure 4.8. The Exhibition Center Development in Genoa Harbour
Renzo Piano designed Genoa. "His scheme combined new construction with the restoration of the existing historic buildings." (Cruijckshank, 1993, p.38) The Bigo is a performance area which has a tent roof above. The cotton warehouse was converted into a conference center. Aquarium is a new building in the form of a ship in the area with galleries, bridges and funnels in it.

4.3.7.3. Regeneration in France

The relocation of the heavy industry in Paris made regeneration available in these abandoned parts. The projects generally were park projects in the city center, along the River Seine. The aim of these projects was to improve the quality of the derelict lands. The designs preserved the streetscapes and involved housing, commerce and public spaces. The plans encouraged the private investment and proposed public spaces such as parks, promenades, squares, riverfronts, city blocks, passages between them. (Savitch, 1995) Parc de Bercy (Fig. 4.9.) and Parc de la Villette (Fig. 4.10.) have gone under revitalization process in some parts. The regeneration projects all have a same characteristic that they respect to nature and to the cultural, image and the heritage of the city.

Figure 4. 9. Parc de Bercy- Paris
(Source: I., Colquhoun, "Urban Regeneration", M.I.T. Press, USA, 1994, p.149)
4.4 The Types of Urban Regeneration (Redevelopment) Projects

The waterfronts have different characteristics and require to be redeveloped according to their properties to supply the needs of the public. The waterfront regeneration process includes many types of projects that give varying characteristics.

A waterfront redevelopment project should include a sensitive, qualitative and a harmonious design within the project area (including the waterbody) and the surrounding land. It has to reflect the environmental values having an educational role in the city.

The waterfront development projects can be listed as following:
- **The Cultural Waterfront**  
  Artistic, cultural, educational installations, including public art, aquariums, fountains.

- **The Environmental Waterfront**  
  Shore stabilization, wetland preservation.

- **The Historic Waterfront**  
  Maritime preservation, adaptive re-use, lighthouse and ferry preservation and warehouse conversions.

- **The Mixed-use Waterfront**  
  Combination of housing, retail, office, restaurants, market, and/or cultural spaces.

- **The Recreational Waterfront**  
  Parks, walkways and boating facilities.

- **The Residential Waterfront**  
  Resorts.

- **The Working Waterfront**  
  Commercial fishing, boat repair, heavy industry and port uses.

(Breen, Rigby, 1994)

### 4.4.1. The Cultural Waterfront Development

Urban waterfront offers many things for the public happiness. The calmness of water, summer breeze, recreational and commercial activities are the choices that make public relieved and enjoyed. These public oriented waterfronts are the places of relaxation creating culturally attractive environments.

An aquarium, a theatre, a fountain, art galleries can be the focal point of an urban waterfront. The National Aquarium in Baltimore (figure 4.12) and the Harbourfront in Toronto, Canada, (figure 4.13).
Figure 4.11. The National Aquarium in Baltimore

Figure 4.12. The Toronto Harbourfront - Cultural Waterfront Development
4.4.2. The Environmental Waterfront Development

Environmental sensitivity in urban waterfronts increased as the result of increase in water pollution, damage in water and land ecosystems along water. This situation speeded up the environmental preservation efforts and with this aim waterfronts are designed for shore stabilization, against erosion, and for the preservation of wetlands, the water catchment areas of the waterbodies. Many kinds of environmental waterfront development can take place such as the redevelopment of a diminished shoreline beach to a recreation area, or a disturbed wetland to a part of office project along a river. The wetland restoration costed about $75,000 dollars for of land for office, car parking and wetlands.

Figure 4.13. The Plan of The Forest Park Beach Shoreline
4.4.3. The Historic Waterfront Development

Waterfronts have special features which requires preservation. Buildings and other structures providing unique character to the waterfront deserve better use. It includes all kinds of preservation related with features in sea and on land. The adaptive reuse of abandoned warehouse and the industrial structures on rivers and on waterfronts regenerated the water’s edge. Generally, social housing and mixed-use (retail, office and condominiums) attraction places were designed. The Queen’s Quay Terminal in Toronto Harbourfront is a good example of this kind. (Figures 4.16, 4.17). The transformation costed $50.5 million in 1983 for a 8.2 ha. area, including 72 condominiums and 1.4 ha. of retail space.
Figure 4.15. The Old Abandoned Warehouse in Queen's Quay Terminal

Figure 4.16. The New Transformation Proposal of Warehouses
4.4.4. The Mixed-use Waterfront Development

Waterfronts are the basis of many activities. The mixed-usage of facilities activate and enhance people and empower the area itself. The mixed-use waterfront includes the mix-use of retail, housing, office and cultural places and so on.

The Granville Island Redevelopment in Canada is a mixed-use development of commercial and cultural uses in old industrial district. The old cranes left, gives clues about the past. It costed $70 million for about 42 acres. Also, Darling harbour in Sydney Australia had the transformation of old industrial harbour area to a mixed-use of office, retail and cultural facilities. It costed about $2.5 billion of which $853 million from public finance and $1.6 billion from the private investment for 148.2 acres of land.

Figure 4.17. The Plan of The Mixed-use Waterfront Redevelopment in Sydney
4.4.5. The Recreational Waterfront Development

Rapid urbanization with the intensive effects of industry in coastal cities mainly caused highrise developments. So, waterfront land being more attractive areas filled with high rise structures. The need for parks, walkways and other water-related facilities cause the redevelopment of waterfronts for recreational basis.

The Charleston Waterfront Park Development in Charleston, in South Carolina is one of the most attractive and better quality development. Public participation increased the quality of the environment and the success of the project. It costed $13.5 million of which 80% was public finance for an area of 12 acres including pishing pier, promenade and wharf developments.
4.4.6. The Residential Waterfront Development

Water gives life to every living thing, from microorganisms to human beings. For many years people lived with water and still need being with water. The attractiveness of waterfronts encouraged people to live along waterbodies. Many residential units have been built with this aim and also, housing took place in adaptive re-use of the waterfront areas. Apart from the housing in
urban centers the residential areas of resorts formed the residential waterfronts. Secondary housing demand supported this use.

The Harbour Town in South Carolina is a sensitive residential redevelopment project. It is sensitive to the shoreline structures as dunes and large amount of open spaces have been provided in the area. It was about 100 acres of residential land.

Figure 4.20. The Residential Waterfront in Harbour Town in South Carolina
4.4.7. The Working Waterfront Development

Working places on waterfronts are generally blocked off the pedestrians access to the water's edge and prevented the city view at ground level, and almost from third or fourth levels. The perception of the waterbody becomes impossible. The redevelopment of waterfront to a working waterfront should be designed only by way of creating commercial fishing, ship building museums and other facilities on old docks, etc.

The Fishermen's Terminal in Seattle, Washington, is a commercial fishing area which provides both physical and visual access to the water's edge. The total cost is $9.4 million for the development of 25 acres of land and 50 acres of water, and completed in 1988.

Figure 4.2f. The Plan of The Fisher's Terminal
Figure 4.22. The Fisher’s Terminal
4.5. The Four Notable Urban Waterfront Redevelopments

Many urban waterfronts have been redeveloped and replanned. The most important waterfront redevelopments took place; The Battery Park City Development, in New York, The London Docklands Redevelopment, in London, The Charleston Navy Yard Redevelopment, in Boston and The Harbourfront Redevelopment, in Toronto. These projects are important as the results are interesting and helpful for further applications in different parts of the waterfront areas.

4.5.1. The Comparative Analysis of The Four Projects

The table below gives the comparative analysis of the projects according to the determined criteria for waterfront development projects.

<table>
<thead>
<tr>
<th>Properties</th>
<th>Battery Park City Project, New York</th>
<th>Docklands Project, London</th>
<th>Charleston Navy Yard Project, Boston</th>
<th>Harbourfront Project, Toronto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Success</td>
<td>Mix</td>
<td>Mix</td>
<td>Failure</td>
</tr>
<tr>
<td>Area Info</td>
<td>Near World Trade Center, on landfill area, Rotted Piers</td>
<td>2200 ha. of vacant docklands, Abandoned Docklands</td>
<td>42 ha. of historical naval shipyard, abandoned Shipyards</td>
<td>37 ha. of central urban waterfront, an old waterfront park, derelict warehouses, Close to CBD</td>
</tr>
<tr>
<td>Development Authority</td>
<td>Battery Park City Authority</td>
<td>London Docklands Development Authority</td>
<td>Boston Redevelopment Authority</td>
<td>Harbourfront Corporation</td>
</tr>
<tr>
<td>Development Type</td>
<td>Mixed-use, offices and high, middle income housing</td>
<td>Mixed-use, commercial area and housing</td>
<td>Mixed-use, commercial area and housing</td>
<td>Mixed-use, commercial area and housing</td>
</tr>
<tr>
<td>Common Aims</td>
<td>1) To change the image of the waterfront from (silence and death) obsolete, isolated port-related activity areas abandoned waterfront buildings as the result of technological changes to attractive sites. 2) To change the image of isolation in these areas by increasing the accessibility to these areas in order to increase the visibility and meaning of these places.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Continued from Table 4.1. The Comparison of The Four Notable Projects

<table>
<thead>
<tr>
<th>Development Method</th>
<th>New development on new land fill area</th>
<th>Preservation, Old warehouses to desirable residential use</th>
<th>Preservation, Adaptive re-use of old historical buildings</th>
<th>As waterfront buildings are less than 50 years old some poor conditioned warehouses and grain elevators were demolished, some industrial buildings in good condition have gone under adaptive-reuse for public use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Access</td>
<td>Development of tangible esplanade, parks in residential areas, winter garden between office blocks, museum and high school for more public use.</td>
<td>had already esplanades and parks along rivers and no demand for public access areas as no commercial and cultural uses were expected in docklands. The area is decided to be redeveloped as a working area.</td>
<td>A shipyard park has priorly provided public access.</td>
<td>Built new park and promenade close to the city center.</td>
</tr>
<tr>
<td>Symbolic Content</td>
<td>(Parks and access) public spaces are firstly provided by the authority before private development was completed. Conscious of public benefits and public spaces.</td>
<td>industrial-commercial activity area close to city with private investment on the site for development by LDDC.</td>
<td>Most isolated of all and had no identity at first. Apartments and condominiums for poors and singles are the symbols and had the image of silence.</td>
<td>Public spaces are provided but human scale is not considered in high rise development at second period of development. Over development and high profile, visible but isolated places form the symbolic structure.</td>
</tr>
<tr>
<td>Common Property</td>
<td>Used rehabilitation and open space projects as symbols of redevelopment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Continued from Table 4.1. The Comparison of The Four Notable Projects

<table>
<thead>
<tr>
<th>Improving Accessibility</th>
<th>Inaccessible before but light rail provided access later.</th>
<th>London suffered from lack of transportation, as roads and railways have not been permitted along the waterfront in order to prevent theft and control vehicular movements, and the new roads did not supply the needs as they did not reach to the city center.</th>
<th>Used and improved existing infrastructure for access.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Properties</td>
<td>have great regional transportation infrastructure.</td>
<td>Railways and highways that were extended inwards to the city center preventing access to the waterfront.</td>
<td></td>
</tr>
<tr>
<td>Changing The Image of Isolation</td>
<td>Pedestrian bridges and railway provided people to reach the area.</td>
<td>Historical structures improved access and the image of the site. (Ferry in Boston)</td>
<td>Light rapid transit changed the image of isolation.</td>
</tr>
<tr>
<td>Using Existing Facilities</td>
<td>used existing transit facilities</td>
<td>used abandoned railway viaducts for the construction of railway.</td>
<td>Developed new</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>All upgraded the infrastructure and added new roads and utilities in order to attract private investment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investments for Infrastructure</td>
<td>payments from agency and its developers for pedestrian bridges</td>
<td>national grants and subsidies and developer cash for subway.</td>
<td>Funds from state subsidies</td>
</tr>
<tr>
<td>management</td>
<td>All used below elements for the control and management of quality:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*plans and development frameworks,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*phasing plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*provision of the public spaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*developer selection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*the design review process</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>*property management strategy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Continued from Table 4.1. The Comparison of The Four Notable Projects

| Urban design applications and master plan development at first | Adopted urban design guidelines | Not adopted urban design guidelines and going to failure understood the importance of urban design but as in Toronto design quality could not been achieved in most. |

4.5.2. Experience Gained from The Projects

The negatives of the projects can give clues about what to be done. The negative ways can be listed as following:

- could not provided sufficient public access to the waterfront and agencies have not considered the unique characteristics of the sites as microclimate, less noise, views and relaxation effect of water. (In London and Boston, water’s edge was under private control.)
- Application of multiple site projects and the inefficiency of the detailed plans resulted with no public spaces and social benefit areas created.
- Less importance given to existing infrastructure and new roads could not be financed (in London), but in N.Y. the existing transportation was used and success was the result.

Therefore, The issues that have to be considered in redevelopment projects can be listed as following:

- Urban design is needed for determining the balance between the development flexibility and the public needs and demands.
- Urban design should focus on the quality of public space together with the design guidelines for buildings and make sure that public spaces will be and are being developed.
- Designing in small parts in detail in integration with the designer planners, architects, landscape engineers, etc. (A multidisciplinary process)
- Existing uses in and out of the site, infrastructure and other factors that can affect the development should be determined.
- No platforms should be designed for direct access from street to the water's edge. Everything must be on ground level.
- Open spaces should be designed, not the buildings.
- A planning process, waterfront design and urban design are needed for a successful project.
- Quality of public spaces, future land use and political support should be foreseen before the redevelopment.

Figure 4.24. The Charleston Navy Yard Development
Figure 4.25. Battery Park City Plan

Figure 4.26. Waterfront Esplanade in Battery Park City
Figure 4.27. The London Docklands

Figure 4.28. The London Docklands, Before and After
Figure 4.29. Harbourfront Plan in Toronto
Chapter 5

WATERFRONT REGENERATION PROCESS

Waterfronts are the necklaces of cities. They require special attention, so as part of the regeneration process, the design and development period must be kept an eye on and examined. As important as the project, the implementation problem should be solved. Hence, the specialized engineering and the assessments of economic feasibility must be supplied. The landowners, private or public and the government/municipality must be involved in these affairs, and the public must be informed. As a result, in order to proceed in development an overall plan should be done by the local authority as a guide.

5.1. Advantages Of Development Of Waterfronts

The development of waterfronts bring many benefits to the city socially and economically. With the new development,

- tax-base increases,
- employment increases,
- social well being of a community diversified and enhanced.
(Colquhoun, 1994)

"Places for public use and enjoyment can be provided for which contribute to civic pride, an improved community image and enhanced economic advantages." (Breen, Rigby, 1987, p.3)

As defined above there are two types of benefits that the development provides. These are the economic benefits and the social benefits.

The economic benefits occur with filling the gap in waterfront which is underused or vacant. It acts as a catalyst strengthening the economic base of the area. Everyone gets a share from the development. For example, the construction of new shops, marinas, offices, hotels means new and more tax revenues and job opportunities for the municipality but the area was an
undeveloped one, there will be additional costs, and these must be considered. If there is an industry already located at the waterfront, in addition to the new development, the benefits from the industry should be foreseen.

Although the economic benefit is important the waterfronts should be used for the sake of people, not just for unique enterprises and not for activities acting as separators (traffic routes etc.). If a waterfront provides citizens goods and services, it will be a liveable place in the city and attract more people of both city and the country. Besides, some activities prepare a different scent at waterfront. Commercial fishing fleet, shipping industry act as an authentic use of waterfront and give a magnificent taste and be an attraction point in the community and for the visitors.

Besides the local citizens, visitors are also involved in the question of waterfront use. As tourism is very important in cities, waterfronts can be handled more carefully. As mentioned above, creating enhanceable places for locals, means provision of increased tourism potential. So, in order to benefit from tourism economically, size of the waterfront, type of the waterbody and the market and regional factors, one by one must be handed in a careful way. They affect the tourism potential in the city.

Also, the development of an urban waterfront can strengthen the attractiveness of the region as well as the city, so that the number of visitors and as a result, the income gained from that area increases too.

The waterfronts, if well developed, can improve the image of the city and even of the region. Many social benefits can be obtained with development. To achieve, three ways can be applied.

1) The recreational facilities can be increased with providing some opportunities for boaters, swimmers, cyclists, runners and walkers at water's edge. Waterfront at Mustafa Kemal Boulevard although lacks of greenery, provides some of these. People run, ride their bicycles, walk in any time of day and it is known that the sea water is not clear. But, it is obvious that people need such places especially near water.

2) Construction of promenades and improvement of access to the waterfront by clearing up the vehicular traffic problems and creating safer, green pedestrian areas and routes. The water's edge may also be
advantageous both for the administration and community. Greenery and pedestrian oriented facilities make the waterfront more active and attractive. People enjoy, relax and share many things at that places. It can be a contact point; a place to see each other, a place to talk.

While creating these kinds of areas the developer must think of additional adequate services in that area. Or else, can cause some social problems while solving others, and also can increase the density.

Places like waterfronts can become joyful and spiritual places as they provide face to face contact. A growth in community spirit and a renewed sense of identity can be promoted by providing more space and opportunity for increased personal contacts and for special events.

3) The third one of the social benefits is safety from traffic of all kinds and from hazards such as a deteriorated shoreline. These can be achieved through developing the edge.

Safety is important because more people will be on the waterfront in relation with others. If traffic is allowed in the area danger occurs and instead of enjoying themselves, they try to take of themselves and the noise of vehicular traffic, noisy streets annoy them.

As a result of developing the waterfront, both the city and the citizens can be pleased to have such pedestrianized and calm, plentiful waterfront. The trials of development of waterfront in Izmir can not solve the problems. We have these kinds of areas along the urban waterfront but with one difference; the traffic ways passing parallel to the waterfront are so strong that it is very hard to reach the edge (although there is place for the pedestrians). Also, there are no barriers between the street and the pedestrianized part. Relaxation and calmness leave their places to noise and stress.

5.2 Planning Process at Waterfronts

Waterfront regeneration includes three parts; The Waterfront Planning, Waterfront Design and Urban Design stages.

Planning process depends upon the individual circumstances in each waterfront city. Although they have different characteristics the planning
process should be the same. As the design of a small unit at waterfront is the part of the whole development, the planning process, in short, will be mentioned before the design period.

The waterfront planning process is schematized as following;

The Waterfront Planning Process

START (Pre-Development Period)
- Determination of Jurisdictions
- Defining the Project Area
- Provision of Public Involvement
- Development of Goals

EXAMINATION OF THE PROJECT AREA (Pre-Development Period)
- Identification of Potential and Constraints
- Determination of Users and Needs
- Development of Objectives
- Preparation and Selection of Alternative Concept Plans

IMPLEMENTATION (Development Period) and MANAGEMENT (Post-Development Period)
- Programming
- Changing Municipal Policies
- Determination of Initiatives
- Operation and Maintenance
- Project Development
- Project Management

Figure 5.1 The Waterfront Planning Process
(Source: Ministry of Municipal Affairs, "Urban Waterfronts planning and Development", 4, 1987, p.8)
5.2.1. Starting a Waterfront Development

A waterfront project begins with the decision especially given by a municipality. A municipality generally decides to pursue waterfront development in below situations:

- a desire to promote economic development and tourism.
- demands for improved recreational facilities, which may come from local community groups.
- the need to respond to a private sector development proposal.
- a heightened environmental awareness on the part of the general public.
- an exodus of industry from the waterfront leaving vacant or derelict sites.
- development activity on adjacent lands or changes of land use in adjacent areas.

(The Ministry of Municipal Affairs, 1987)

After deciding to develop, determination of jurisdictions and the definition of the project area must be done in order to develop goals of the community and gather some basic information about the waterfront area. Providing the public involvement, the identification of the specific objectives for development can be done.

5.2.1.1. Determination of Jurisdictions

Transportation function and the location at the interface between land and water make waterfronts the most regulated of lands. In order to place any new installations or revitalize the waterfront approvals must be obtained from the municipality and from the other responsible institutions and organizations. The laws related with waterfronts also permit or prohibit the actions on the water's edge. The laws determine the situation and place of the development and other interventions In Ontario, Canada, for example, in order to make new developments there are agencies to get advice and be controlled by. They again play an important role in getting permission for installation. (Colquhoun, 1994)
According to the pros and cons of the project area, related laws and responsible organizations take place in the development period with their opinions. Some lands along waterfront have uses that are regulated by federal authority. In these cases, not only local authority but federal authority are concerned. They have to work out together to determine the new uses and how the area will be developed in case of development. Different authorities have different responsibility areas and to obtain a successful project and development they should work in harmony.

5.2.1.2. Determination of The Waterfront Development Area

The clarification of various jurisdictions is followed by the definition of the waterfront area in question.

There are some factors in the determination of the project area. A comparison with alternative sites should be made. The factors given below should be explained briefly.

- General location
- Cost of land acquisition
- Potential difficulties in assembly
- Special use restrictions and regulator controls.
- Potential compatibility of surrounding land uses.
- Requirements for supporting public improvements.
- Unused site conditions that can provide special opportunities or cause problems.
- The size and the shape of the site.
- The property owners willingness to sell or lease the property or to participate financially in development or as a threat. (Wrenn, 1983, p.80)

The defined area should be large enough to include uses that would also be indirectly affected by waterfront development. (They can support and reinforce each other.) Pedestrian and vehicular links must be shown and understood.
In planning process, the waterbody determines the shape and extent of the waterfront area. For example, along rivers both banks are, but on a bay, the whole bayfront is included. The extensions into the water must be considered in different dimensions. In this case, regulations are the basic directors and advisors.

5.2.1.3. Encouragement of Public Participation

A waterfront development process involves a large number of interest groups and this makes the situation very complex. The landowners in the project area, the whole community and representatives of organizations such as The Chambers of Architects, The Chambers of City Planners, The Chambers of Environmental Engineers, etc. must be contacted and got permission from some and involved throughout the process. If conflicts occur in opinions, municipality tries to develop policies with the opinions of the majority of the local residents, property owners and the business people. The municipality cannot afford development so, private enterprise must be attracted and involved in the event.

In many waterfront cities abroad, a planning advisory committee is established to review planning policy and new land use proposals. Also, it can facilitate public debate and provide the co-ordination of the community in the planning process. If there is no council as defined above, this work mentioned is carried on by the local council that is assisted by the planning group. In order to get the public involved in the process, public meetings, workshops, surveys, walking tours in the area should be done.

5.2.1.4. Establishing Goals

After defining the boundaries of the project area, goals should be set. These goals should be approved by the members of general public and the other interest groups. While establishing the goals the ambitions of the community, their requirements, the benefits and advantages that the city and the public will have must be considered. They have to be general and provide
long term direction for the improvement of the waterfront. So, some of the goals stated are:

- to create an accessible waterfront
- to make waterfronts liveable and attractive public spaces
- to provide new employment opportunities with new developments or revitalized areas near or on the waterfront
- to increase the level of tourism
- to protect existing waterfront industry

In addition to these;

- to increase recreation areas especially using water
- to create special interaction places
- to clarify the image of the area/city
- to perform educative role for the community
- to provide regularly planned and public oriented places, can be listed.

The humanization of waterfronts is strictly required in densely developing, chaotic cities, and it should begin on waterfronts.

5.2.2 Analysis of the Waterfront Development Area

The physical features, present and potential users, ownership patterns, land use patterns are to be searched and found out before the development. Also, existing plan must be revised to be able to apply the project to that area. While the studies on development going on, some short term land use decisions and control mechanisms are applied to regulate uses in the area. Laws and regulations make easier the interim controls on the area and temporary uses are encouraged and placed in time of transition. So, the analysis includes:

- Neighbouring land and water uses.
- Access to the site by highway or railroad.
- Water resource characteristics.
- Shoreline configuration and erosion potential.
• Soil and subsoil conditions.
• Extreme climatic variations.
• Views of and from the site.
• Pedestrian circulation
• The type and location of utility services
• Distinctive natural or cultural features. (Wrenn, 1983, p.82)

5.2.2.1. Identifying Potential and Constraints of The Project Area

Identification of the potentials and constraints of the project area is made by gathering detailed information about the development and the surrounding.

The first potential is the uniqueness of waterfront. Each waterfront has different peculiarities and may have other properties that come up as potential uses to create a useful waterfront. Specialities can be the result of the waterfront location. The locational potential can be listed in three parts;

1) Location on a waterbody: Being on a particular waterbody provides some special physical characteristics to the waterfront. High cliffs makes the waterfront or the riverfront unique.

2) Regional Location: The importance of the waterfront may occur with its regional location. For example, an industrial port, a recreational boating center, a great cultural center may be attractive not for only the city itself but for the region also.

3) Being near or being part of a downtown: The crowded activity areas, piers and great buildings of downtown attracts more people, both residents and the visitors.

In design period, if the special features and potentials are not defined, the new design may provide the occasion for a community to assess its untapped potential as well as to improve the existing resources of the area.

Of course, it is not certain that every waterfront can/will become a tourist attraction point. In these circumstances the aim is not to be increase the number of visitors, but to satisfy the requirements of the residents in economical meaning. This is mentioned as; "The potential for improvement or
revitalization may lie in the enhancement of its existing opportunities, in order to cater better to the needs of local residents. For this reason, the principal functions of the waterfront should be evaluated at the outset, so that improvements can be chosen which are both practical and economically viable in the context of the particular community. (Brenn et al., 1980, p. 16).

If the waterfront is not appropriate for the tourist facilities, the principal functions should be determined. These may be a port, a local recreational area, a transportation center, a commercial-cultural facility area, etc. for the use of the community. The project can be applied with the determination of potentials but the essential thing is to learn the physical characteristics, special features of the waterfront. Else, the estimations could be complete or sometimes the area may be in bad conditions because of unfitted uses.

The inventory of the physical characteristics of the waterfront includes:

- "Land use"
- Unique features
- Environmentally sensitive areas
- Significant natural features
- Engineering structures
- Buildings, public and private
- Beaching and related facilities
- Vacant / underutilized spaces
- Parking
- Roads and sidewalks
- Recreational resources / facilities
- Street furniture/ lighting" (The Ministry of Municipal Affairs, 1987, p. 16)

In order to reach to correct solutions the detailed examination of the area must be done by gathering whole information about the list above. Also the problems of existing facilities and uses must be considered in the repairment and improvement.

In general, the use of shoreline space, buildings and the water, as well as condition, location and design qualities should be evaluated. At this point if landowners, boaters, and other waterfront users provincial agencies have an active role, it would be more useful for the design and development. Other
specialized studies such as traffic patterns, environmental concerns and conditions should be studied under this topic to get the more useful project.

5.2.2.2. Determination Of Users And Their Needs

After the analysis of the site finishes the second step begins. Once found out what to be done at the waterfront. For whom the development the question must be. The users, the residents, business and industry and their needs directly influence the development. On the other hand the potential users varies according to the aims stated beforehand.

So the users and needs can be separated into two parts.
1- Local residents & their needs housing, jobs, shipping and recreation.
2- Tourists and visitors and their needs

   Accommodation on land or water, shopping, etc. (The Ministry of Municipal Affairs, 1987)

The divisions of these two categories may not be always possible because, the waterfront may not have the potential to attract visitors, and this have to be estimated before the design process.

In this period the municipality, after identifying the users must make the analysis of;

- The existing waterfront facilities and the attractions
- A profile of the present users (age, income, place of residence, frequency of use, amount of money spent, transportation type they choose, etc.
- Competing facilities or attractions
- The potential market that might be attracted to any new development
- Transportation routes that reach to the waterfront.

If a new facility is dedicated to be located in the area, the users, and the growth, potential of the facility area must be undertaken. For example if a marina included in the project the boat ownership must be considered. The small amount of owners and little potential for growth and expansion can diminish the idea of constructing marinas.
5.2.2.3. Developing Objectives

In planning process, after the completion of the determination of the potentials of the area is followed by the objectives that are developed to implement general goals related with the area. These objectives should provide opportunity and encourage private sector. Some objectives can probably be:

- To develop marina facilities.
- To encourage the development of commercial uses on the waterfront.
- To create a walkway linking downtown and the public dock.
- To make an efficient landscaping and townscaping.
- To create a livable environment also for the handicapped.
- To increase the public quality.
- To create continuous walkways.

5.2.2.4. Preparation of a Development Strategy

Determination of a development strategy is one of the main parts of the design process. The development strategy contains the principle function of the project, a development programme, the preliminary cost estimates and the participants of the project.

The development strategy is defined as "Business Plan" in the IJ Embankment Project in Amsterdam. This plan, as Jorna and Witbraad explained, has different scenarios in its content. These are: programmatic scenario; spatial scenario; financial-economical scenario and social scenario.

Programmatic Scenario: The project program requires knowledge about the quality of the site location and the characteristics of neighbouring sites. The potentials of the site determines the dynamic character of the program. The locational choices of the functions also add dynamism to the program.

The program should be handled with spatial scenario and flexibility is the important factor in the scenario, as there can be social and economic changes at any time.
Spatial Scenario: Spatial scenario is generally based on the programmatic scenario. The buildings that also define public spaces have to be considered together in order to increase the quality of the site.

Design quality is the basic issue in design, and has to be emphasized especially, throughout the atmosphere of the public areas. Parks, piers, squares, walkways and other pedestrian oriented places on the waterfront increase the enhancement of the area.

Financial- Economic Scenario: This scenario includes the economical values of the project, from the determination of the developers to implementation of the project and management of the site in post development period.

The examination of the examples in USA and other developed countries showed that the successful financial programs were realized with public-private partnership in various projects. The financial structure, that is, the percentage of the investment changes from city to city and from project to project. The increase in revenues, increases the investment percentage of the private developer, however, increase in social benefits requires more public investment. Federal and state funds and subsidies play an important role. As given in chapter 4, these values can be 1-4.5 or 1-6.5, due to the characteristics of the program.

These investment costs and revenues are the two basic issues in financial structure of the development. In addition the jobs provided in the site with new development should also be considered in revenues.

Social Scenario: Social demands form the social scenario. Social organizations and people can make proposals related with the project. The main aim of preparing a social scenario has to be to provide increase in existing quality of space, to consider present and future users and their needs, to increase accessibility and to provide safe and secure integration with neighbouring sites. (Witbraad, Jorna, 1993).

5.2.2.5. Preparation of Concept Plans

The concepts make up the waterfront plan. Location, relation with each other and the time needed for implementation of the proposed changes are
illustrated in the plan. The suitability of the functions located together, and feasibility analysis must be tested. So a cost/benefit analysis of each alternative will be helpful for the selection of the final plan.

Without going into detail, the alternative concept plans should be prepared and be presented to the public in order to inform about the proceeding improvements.

Once the concept plans are presented, the most suitable one should be selected as a final plan. Suitability, cost and feasibility issues are to be the criteria in selection.

Suitability involves the realization of the goals and objectives established in the beginning, the problem solving and potential utilization capacity, the fitness of the goals in plan.

Cost involves the funds and improvement costs.

Feasibility criteria answers the question about the carrying out of the improvements within the determined time frame and the impediments such as property ownership.

With these criteria defined above, the final plan can be selected and more detailed studies and drawings are done.

5.2.3. Implementation Process in Base of Policies and Controls

The selection of the most available plan, the implementation period begins. Generally the municipality and its private entrepreneurs carry out the plan by laws, or else in foreign cities in addition with municipal policies. At first the goals and objectives of the existing plan must be examined closely. If it does not reflect the goals and policies of the development plan it should be amended. But in some cases, the revision of development plan might be done as an amendment plan as on purpose and the authorized group has to take into account. On the other hand, the new policies and goals related with the waterfront may require changes in the existing zoning and new by laws may be needed to activate the implementation.
5.2.3.1. Municipal Policies

Municipalities have to develop policies for developmental or redevelopmental guidance. For this, the goals are to be revised and if necessary the densities, land use and open space and other requirements should be increased, later to be applied to the plan.

Each municipality approaches to waterfront development in different ways and methods. For example, in a different city the waterfront can be separated into two or more activity areas. These are more than one focal points and they develop policies and goals according to this situation. A commercial area, a tourist area, a cultural area and a local oriented area may be different zones defined at the waterfront and this requires special policies. So for each the official plan should show the zoning and the municipality has a chance to improve the waterfront with three distinct areas but having incorporated policies.

However municipality has a freedom to encourage the mix land use including hotels, restaurants, motels, commercial recreation facilities, residential, marinas, local and tourism-related retail and offices. This doesn’t requires specific policies and thus without any change in the official plan, many uses can be accommodated on the waterfront. (Wrenn, 1983)

5.2.3.2. Public and Private Initiatives

In waterfront development both public and private sectors can have active roles. The public sector acts as a catalyst and in every attempt tries to stimulate the private sector participation in a public project and it requires time and effort. In order to make them involved in the development it should be demonstrated that the potential benefits are greater than the investment risks.

5.2.3.3. Identification Of Operation Maintenance Responsibilities

A successful waterfront development needs programming for the operation and maintenance of the public components of the new facilities. Not
only parks but marinas may require special skills and staff, e.g. a manager, a security guard etc.

5.2.3.4. Project Programming

Programming, defined as "The planning and organizing of the use of the facilities and spaces" (Ministry of Urban Affairs, 1987, p.25) and it should be done by the organizers in the early periods of the waterfront planning process. There can not be achieved a successful redevelopment and revitalization project if it is not prepared. The programming of events and attractiveness may develop the waterfronts reputation and increase the number of visitors. In different times of the year programming of seasonal activities can be done too. The Rideaway Canal in Ottowa are both used for winter and summer activities. (Figure 5.2.)

Figure 5.2. Winter Activities on Rideaway Canal

5.3. Analytical Examination of the Existing Conditions of The Waterfront Development Area

It is essential to study the existing conditions of the waterfront area as mentioned before. The existing conditions includes the existing built
environment and the specific site conditions that are needed to prepare a visible project for the future. During the analysis, the opportunities and the constraints should be identified to determine the potentials of the area. After all, concept plans and cost/benefit analysis of each are carried out and the financial program is made to implement the project without problems.

Among these stages of the development of the plan, the assessment of the waterfront takes place in the first stage. At first hand, the land use issues are to be known and found out for assessing the performance of the uses in future.

5.3.1. Land Use Issues

The study on existing land uses assist in defining the study area, the establishment of goals and the analysis of potential and constraints. The presence of downtown and changes effect the future of waterfront. If the dense usage of the downtown locates in an other part of the city, the waterfront may loose its attraction and can change characteristic. This should be foreseen while developing goals and objectives.

Meanwhile, as mentioned in Part II, the urban context has to be known and understood to reach waterfront to a correct and reliable project.

5.3.1.1. Examination of The Urban Context

The history and the development trends in the past, effect the formation of a particular waterfront in context. As mentioned in the first part of the waterfront areas were used as industrial areas where the transportation was supplied by rail, road and boat. Although these industries constitute a major component of the local or the regional economy in these places, they moved to new industrial parks as they did not depend on rail and water access. As a result, many industrial building abandoned and served generally for the poor and homeless. So, many waterfront areas were left with vacant buildings and abandoned places. If these areas are near downtown, generally be ignored however they have the potential for reuse, revitalization. To get benefit from
this abandoned area, these buildings can be reused and be the base with the thought of a creation of a liveable and unique waterfront in mind.

5.3.1.2. Effect of CBD in The Development

One other thing that determines the issue of the development of the waterfront is the effect of surrounding uses. Especially the presence of the business district becomes effective in the formation of the goals and aims. In this situation the main goal should be integrating pedestrian linkages and a lookout. This initiatives can help to create a major focal point in the city for both the local residents and visitors. They may wish to pay a visit to the waterfront, so this can create increase in tourism based activities.

5.3.1.3. Property Ownership Patterns

Ownership is one of the major problems of the waterfront development. The more fragmented land ownership, the more difficult implementation is because the agreement of the whole owners may be difficult and it takes time to complete the whole project as the negotiations last long. The disagreement causes piecemeal land use changes and land divisions. As a result, disorganized and incompatible environments.

The more detailed examination the fragmented ownership it makes change in land uses, the development rights and creation of land assemblies harder. Once the assembly of land is successfully done, the key problem for the waterfront project is achieved.

5.3.1.4. Water Dependency

Water dependency is explained in detail in previous parts. This topic involves in formation about the suitability of the different uses to the waterfront.

On the waterfront, there are uses dependent on a waterfront location or uses enhanced by locating there. Marinas, boat rentals etc. depend on water
and have to be on water. Some other uses can be defined as water related ones. These can locate even at a small distance from the water and this will not make its functioning harder. Except these two uses, there is another one which is the waterfront enhanced uses, such as restaurants and commercial uses. The waterfront location is the heart of their living and generally these uses are the main components of the waterfront economy and a popular waterfront by attracting many people.

In some situations, some uses can be unsuitable for waterfront location, especially, if it's a working waterfront consisting of ports, fisheries etc. If the new plan supports them, the uses that can prevent them to work efficiently, such as housing and commercial activity areas should not be permitted to choose place there. So, to foresee the probability of creating unsuitable areas for different uses will provide the most reliable, logical, waterfront project in the end.

Than it is essential to understand and determine the prior land uses waterfront location before or while preparing the plan.

5.3.1.5. Considerations Related To Existing Land Uses

In order to understand the existing land uses, the items listed below should be considered for the development of different uses in order to achieve the goals and objectives determined in the beginning of plan development period. These can be listed as following;

“RESIDENTIAL
General
• age, condition, type, tenure
• availability of services and facilities (schools, day care, public transit
• need for security and privacy
• the retention/ensurance of public access to the waterfront
• built-in market for other uses
• share parking with commercial uses
• potential conflict with recreational users over parking space
Single Family Detached
• limits public access to shoreline
• ownership of water rights should be examined before any work is carried out for shoreline for protection
Multi-family
• public access more easily achieved
• can combine with commercial uses more readily

COMMERCIAL
General
• age, condition, type of business, floor area, rent
• profitability, economic impact (jobs, taxes)
• traffic patterns, access, deliveries
• permits year-round public use of the waterfront
• assess for continuing viability and appropriateness to future plans
• may provide goods and services for boaters
Offices
• provides year-round daytime clientele for services and retail
• best located in a mixed use area
Retail / Restaurants / Fitness Clubs
• best located in a mixed use area
Hotels
• can benefit from views and location
• provides a 24 hour, year-round market
• best located in a mixed use area
• essential for tourism promotion (Wrenn, 1983)

INDUSTRIAL
General
• number, type, economic viability
• must be carefully assessed/may be crucial to the local economy (taxes, jobs)
• May be dependent on a waterfront location e.g. docks necessary for delivery and export of goods and raw materials
• may be basis for the waterfront’s attraction to visitors (e.g. fishing fleet)
• if not water dependent, could be susceptible to relocation
• can impede or prevent public access
• may limit recreational boating opportunities
• may have major negative impact on land, air and water quality
• could have access problems and little space for expansion
Noxious Industry
• adjacent development should be undertaken with care
• prevailing winds and currents should be considered when locating adjacent uses
• adjacent uses will have to be buffered to screen from visual or noise pollution

INSTITUTIONAL
General
• provides a built in clientele for other uses
• ensures public access to the water’s edge
• may represent site of community’s beginnings
Museums, Art Galleries, Interpretation Centers
• can serve as a focal point for redevelopment
• often oldest and most scenic part of the community, therefore, an appreciate location for these attractions
• can be located in old buildings
Utilities
- facilities such as water and sewage treatment plants must be located near the water
- existing plants must be considered when siting new uses, such as beaches or playgrounds
- buffering will be necessary

RECREATIONAL
General
- most widely accepted waterfront use
- generally, does not interfere with environmental and/or plain requirements
- can serve as a natural buffer area
- not every community can have a recreational waterfront/other uses may be more important to the local economy
- often does not have drawing power in winter
- may require extensive management and operating costs
- effective programming is essential for success

Active Playing Fields
- should exist as a complement to covered facilities, such as a community center
- may not be appropriate for a waterfront location

Passive Open space
- appropriate as a complement to other facilities

Marinas/Boat Launch ramps
- integration with complementary services and retail
- design of public access and circulation areas
- transient marinas require parking only for visitors and deliveries
- boat launch ramps and permanent marinas require parking for boat trailers and cars
- permanent marinas also require areas for winter storage
- security is an important factor

Beaches
- assess location in relation to other uses (industrial effluents, sewer outfalls)
- should occur with other recreational support facilities, such as change rooms, washrooms, parking/public transit etc.

(The Ministry of Municipal Affairs, 1987, p.32-33)

5.3.1.6. Existing Services on The Area

The examination of existing utility services and determination of their location condition and capacity are needed for the development and future needs of area. It may satisfy the needs of new activities but also it may not. In this situation the existing services should be upgraded or else, it is hardly met, if it is satisfactory, can be left as it is.
With this aim of the analization of storm drainage, sanitary system, roads and traffic patterns and some other utilities in the project area be useful.

Storm drainage is not as important as others but the nature of existing drainage system and the stormwater should be examined in relation with the new development.

The analysis of the sanitary system should include the present and the proposed systems and plants and the impact of new development to the system. That is to say, the items to be known are the type, capacity of the local sanitary system and the handling and loading of proposed development from the area.

Except the two problems explained above, the basic issue that has to be analyzed is the traffic and road patterns around in the area. As there are densely used activities exist on waterfront the traffic problem occurs at most. There is always a poor access of both pedestrian and vehicular.

Therefore a detailed analysis of the existing road system should be made since its ability to handle any extra traffic could be a prime constraint on the nature of the waterfront plan. The basic analysis should include the following:

• type of local sanitary system (piped, septic etc.)
• capacity of the existing system and any planned improvements
• capacity of any existing pollution control plants
• sewage loading of the proposed development
• method of handling sewage from the proposed development (municipal system. Private). “

(The Ministry of Municipal Affairs, 1987, p.35)

After increasing the accessibility of the waterfront, water, gas, hydro and telephone services should be controlled. These are less effective than the others and it is easy to determine their capacities.

5.3.1.7. Public Access To The Waterfront

Public access is one of the important issues of the development. It is a strictly required connection that unite the waterfront with the other parts of the city. People should have the maximum possible access to the waterfront.
In some cases, although accessibility to the waterfront is an important issue some interventions may be required for the security of the area. People are prevente4d to go near by the water but the creation of outlooks can increase the use of the area making use of visual aspects. The restriction of the access in dangerous parts can be got over by the overlooks created nearby. A marina for example can be enjoyed with green outlooks as shown in the figure 5.3. Public access should also have a direct route to the waterfront. The minimal intersection of the roads and pedestrian paths should be provided for the creation of secure areas.

The security should be supplied by the plan especially in working waterfront areas and industrial waterfront areas barriers as physical and psychological are used as restriction. (Figure 5.4)

Psychological barriers involve real or perceived threats to safety, such as vulnerability to crime or lack of protection from deep water. If the users feels uncomfortable or threatened by other users groups or feels the area to be dirty or neglected, this also constitutes a form of psychological barrier.

Besides the psychological barriers, physical barriers can also interfere the people’s access to the waterfront. These are generally the waste treatment facilities electrical generating plants, roadways, railway lands, and the waterbody itself, as mentioned in part 3.

The first two prevents people use the area. The roadways abundantly creates danger and visual pollution so that vegetation for usual pollution and overpasses, underpasses and lighting for safety are needed. Railway lands themselves are the barriers. They are very large in area and constitute a significant access barrier.

The last physical barrier is the waterbody itself, if there is no connection between the two banks. The pedestrian links, bridges and walkways can disappear this barrier property of the waterbody.

Finally both physical and psychological barriers are for the security of the public. The aim is to make the use of more safer and increase the enjoyment of the waterfront. So, according to the uses of located on / along the waterfront the need for barriers should be considered and applied on the plan.
Figure 5.3. A Green Outlook
(Source: Ministry of Municipal Affairs, "Urban Waterfronts planning and Development", 4, 1987, p.8)

Figure 5.4. Physical Barrier on The Water's Edge and Observation Decks
(Source: Ministry of Municipal Affairs, "Urban Waterfronts planning and Development", 4, 1987, p.8)
5.4. Physical Characteristics And Features Of Both Land And Water
At Water’s Edge

The natural characteristics of waterfront is given in Part II in general. In this topic, the effect of these physical and natural characteristics on goals and objectives will be examined in detail.

Once the environmental consideration and examinations are done, the site specific analysis showing potentials and constraints of the area should be finished. These include:

- Topography
- Hydrological Properties
- Environmental quality
- Existing shore structures
- Microclimate
- Users and their needs

5.4.1. Topography

The waterfront sites are generally the land filled, so that they require special care according to the functions that will be constructed on. Also, the preservation of the wetlands and natural coasts can be provided with the preparation of the analytic studies related with the topography. The water tables should be learnt, as the type of construction depends on the water levels. There are some other factors that should be considered. These are, water quality, slopage and erosion problems and the properties of soil in water bottom and in the project site.

5.4.2. Hydrological Properties

Hydrological properties of the waterbody also affects the development type on the site. These are; The changes in water level, climatic changes in waterbody, ice problem and direction of the waves. Natural processes affect the water level of the waterbody. Changes in temperature, effect of winds known as the wind set-up, precipitation and evaporation can also have an effect on. Dams can be built to decrease the effects.
5.4.3. Environmental Quality

The locational choice of the uses on waterfront depends on the studies of the environmental quality of the project area. This land susceptibility studies include information about,

- quality and quantity of water in waterbodies
- existing industrial waste management practices
- existing air quality
- soil contamination
- air management practices
- natural resources, wildlife habitat in water.”

(The Ministry of Municipal Affairs, 1987, p. 40)

The waterfront areas generally have poor soil conditions as they land filled. So, special techniques should be used for the availability of the land for construction.
5.4.4. **Existing Shore Structures**

Existing structures on waterfront have effective role in planning process. Piers, docks, seawalls etc. are some of these. Their location, condition and effectiveness should be analysed in order to estimate the usefulness in the new development. The interest should be on the,

- Type of construction (concrete, wood etc.)
- General condition of structure
- Adequate height for water fluctuations
- Toe protection
- Relationship to proposed development
- Effectiveness (alignment, placement, etc.)
- Co-ordinated protection design
- Cost of repair and replacement."
5.4.5. Microclimate

Microclimate is one of the key issues that affect the location, orientation of the uses. If it is ignored, the uses can be unpreferable in different times of the year. For example, the prevailing wind is important for the location of marinas and also for the orientation of the buildings.

5.4.6. Users and Their Needs

As well as the other analysis, the identification of the users impress the development. The users as explained in previous subjects involves local residents and tourists. They require different kinds of things, as the local residents always been there, but the tourists just for specific time period. Not only the present users but the potential ones should be given attention.

Waterfront users often requires commercial, residential and recreational uses. Recreational uses can be examined in two dimensions. First one is water-oriented- boating, watersports, fishing etc. and the second one is land-oriented - tennis, park spaces and pedestrian activity areas etc. Commercial and recreational uses can be both serve the visitors and the residents but the residential use is definitely for the residents only.

5.5. Waterfront Design Process

Waterfronts are so fragile and sensitive to changes that the design require examination of some issues which are essential for the creation of appropriate projects. These studies should be on the protection of the shoreline, direct and safe accessibility to the waterfront, beaches, recreational uses and landscaping.

5.5.1. Protection Of The Shoreline

The protection of the shoreline is the most important subject that has to be considered. The designer should protect the shoreline from the adverse
impacts of the development. So, by treating the water's edge against the shore erosion and developing the land with the knowledge of the properties of the natural coast, he can satisfactorily achieve his aim on the protection of the susceptible waterfront area.

"Edge treatment includes the various ways in which the interface between land and water is treated. The purpose of edge treatment is to both protect the waterfront from hydrological forces and provide a firm structural base for waterfront activities."(The Ministry of Municipal Affairs, Vol.4, p.46)

Edge treatment has two types. One is the hard edge treatment, and the other is soft edge treatment. Hard Edge Treatment: Construction of shorewalls and breakwater etc. Soft Edge Treatment: Various landscaping are used.

![Diagram of Shore Erosion Factors](image)

**Figure 5.7 The Factors of Shore Erosion**

### 5.1.1. Hard Edge Treatment

As said above, hard edge treatment is done against the hydrological factors acting on the waterfront. Under this topic the revetments, shorewalls, groyne and breakwaters will be explained as treatment elements.
Revetments

"A revetment is a facing of stone, concrete, etc. built to protect an embankment or shore structure against erosion and collapse as a result of wave action and currents. It is usually designed to withstand the full force of wave action since it is built right on the water line.” (Mc.Graw Hill Book Company, 1992, vol. 4, p. 78). They are the hardening of the existing slopy edge with some materials to resist the erosion and wave actions. They are not harmful for the water quality but limit the access to water with the steep edges.

Shorewalls and revetments are considered to have the same purpose. They are constructed parallel to the edge and stabilization of the edge and prevention from erosion can be supplied by them. Different from revetments they act as a base for waterfront activities and direct access to water can be obtained.

Groyenes

To create and protect the beaches, groynes are the elements constructed on the water's edge. "They are structural devices built into the
shore perpendicular to the beach at various intervals which intercept current flows to capture littoral drift (material transported from erosion zones) and enhance sand deposits" (McGraw Hill Enc. of Science and Tech. Vol. 4, p. 78) they vary according to the construction type and must be used with extreme caution despite the napping of sand under. They do not cause danger in environmental concerns.

Figure 5.9. Shorewalls

Figure 5.10. Groynes
Breakwaters

Breakwaters are the mostly used and the most important protection elements of water’s edge. They are used in the protection of marinas, some parts of harbours etc. Breakwaters can be used together with revetments and shorewalls to reduce the effect of waves, by intercepting and dispersing, on the shore. They may cause some environmental problems as the wave energy reaching to the shore is effected. The change in natural processes may effect siltation and erosion in the part where a breakwater is constructed.

![Diagram of Breakwaters](source: Mc,Graw Hill Enc. of Science and Tech. Vol. 4, USA, 1992, p. 79)

Landfill

Landfill can be easily met in waterfront developments to create new waterfront areas. It occurs as in edge treatment operation but if it is applied without detailed analysis of the shore, the problems occur. The alternation of natural shore of these. Landfill generally necessitates revetments, shorewalls and landscaping elements. The construction of these structural protection devices may have impacts on the shore itself and also the facilities and activities.

In such cases if it is essential, landfill has to be done with great care the protection of the fishing and spawning areas, the alternation of littoral drift, the changes in sedimentation in the area.
Along the filling natural should be chosen depending the function that will be located on. Different functions require different types of filling materials. Activities generally demand hard and rigid materials, sometimes empowered with specific elements but the ones used in beaches are less suitable for the construction of buildings etc. They also have to be unhazardous with no harmful contaminants mixed in.

5.5.1.2. Soft Edge Treatment

Soft edge shoreline treatment includes landscaping. Although waterbodies vary, all have the slspage, drainage and flooding problems in common and face with wave actions, groundwater seepage, wind easier, surface run-off and ice. Wave actions create erosions both on the surface and in water on the shore, the groundwater seepage cause the decrease and contamination of the water quality, the wind especially cause problems in beaches being effective and sandy areas. The ice problem should also be got over and the number of icy days should be learned to guess the impact on the new development. In order to decrease the effects of the problems mentioned above landscaping elements, often the vegetation should be used in shores.

Shoreline vegetation not only improves the visual appearance, especially from the water, but also performs the following functions:

- Absorbs the impact of falling rain
- Slows the wind velocity and traps wind-blown sediment
- Helps maintain the absorptive capacity of the soil
- Reduces frost penetration
- Provide wildlife habitats (Reiner, 1972, p.43)

It is obvious that vegetation solve the problem. Once the decision is given, the type of the plants should be determined. While designing the area, determinants of the plants chosen, are the proposed activity. Soil limitations slope availability of plant species, aesthetics and micro-climate are important. In this period of the design, the designer should be in contact with a landscape.

Vegetation is also required where the waterfront edge is treated by hard-edge treatment devices against the wave action. In such a case, the hard-edge
treatment devices should be supported by vegetation of the adjacent backshore in order to reduce the effect of wave. Also, if the development area is really a problem area having of steep slopes, groundwater seepage problems, no natural beach and no vegetation soft and hard-edge treatment should be combined to make the area developable and liveable and to overcome the possible problems.

Sand dunes are naturally the best features of the shore that have to be protected. They are susceptible and can be easily affected by the activities. The design can be effective in the protection of these areas. The only thing to propose is the vegetation.

Although they can hardly be met in urban areas being part of specific environment, has to be mentioned as part of this subject.

The gravel can be used with vegetation as a buffer area in order to prevent direct entrance of people and vehicles. So, clean beaches never be lost.

5.5.2. Pedestrian Routes to Waterfront

Public accessibility to urban waterfront is one of the major goals of the design. It has generally a recreational property, both active and passive. These pedestrian oriented places should have tightly connected with linkages as walkways, bikepaths etc. provide the continuity of the action. The open spaces along the waterfront are the parts of the whole and should be linked together.

The parts mentioned above are the public activity needs such as parks, amphitheatre, a plaza or square etc.

These needs are placed development on the presence of waterbody getting the advantages of marvellous issues. Also the relation with the developed areas on shore should be considered as well. Below picture shows public activity nodes and the pathways and other activity areas. As seen, the parking areas are along the traffic routes without disturbing the pedestrian freedom. The pedestrian paths connect whole activity areas and the downtown to the waterfront.
The pedestrian open space areas at waterfront may include plazas, parks, links, pathways, bikeways, viewing areas, fishing piers, beaches.

Plazas can be people places or for transportation needs. They can be in relation with offices, providing open space and seating for the workers, and also it can be the part of a park that include active open spaces. Therefore, the plazas can be the local activity area of the waterfront.

They also be integrated with museums, libraries, community halls. If it is with a commercial activity area at waterfront, it can be an attractive focal point for the residents and the visitors.

Parks at waterfront are also in great demand serving the needs of public in the form of large open spaces and often of picnic areas in order to make a park lively in all seasons of the year.

The plan should provide all kinds of open and closed activity areas as a whole. The parks, especially in linear forms, can be advantageous as they provide continuous walks along the waterfront and permanent in all times of the year.

5.5.2.1. Pedestrian Paths And Walkways And Bikeways

Pathways increase the relation between different uses. They should be considered both individually and as a part of a pedestrian system of the city considered. Meanwhile, the unique character can be obtained by specific furniture, fencing, lighting and sculpture.

Informative signs having cultural and enhancemental relation and other structures on walking should assist the pedestrians. In the way to their destination with the feeling of the power of the waterfront. Besides the directive signs, planting may also be used to provide exclusive and indicate direction and support pats usage in aesthetical meaning, flowers and plants should maximize the liveability and attractiveness of the walkways.

The other thing to mention about walkways is the provision of the waterfront view from different perspectives. Elevated walkways are considerably more attractive.
5.3. Viewing Areas and Overlooks

Viewing areas and overlooks increases the enhancement of the waterfront. They can be elevated or decked, secluded or publicized. They may have the view of natural environment a crowded focal point working environment.

5.4. Landscape and Townscape Elements as a Part of Good Design

Waterfronts are unique places that have aesthetic importance also. Proper landscaping provides increase in attractiveness of the waterfront area.
Appropriate plant materials, paving and street furniture are the equipments that are used in aesthetical concerns.

Landscaping of waterfront also:

- unifies the overall development, concerning the waterfront to other community areas.
- Modifies microclimate to make the waterfront more pleasant place to be.
  (connects the waterfront to other community activity areas (being the part of an overall development) and causes microclimate changes to make the waterfront a liveable enjoyable and a pleasant place)

The efficient townscaping can prevent vandalism and provide secure and safe places with adequate lighting.

5.5.4.1. Plants

Landscaping includes the right plans to be selected and be planted. The microclimate conditions the soil type and the goals to be obtained determines the plant types.

In cold climates, the plant should be selected for the waters edge. So, they have to able to withstand a high water table and compacted soils. If its a landfill area the toxicity should be considered.

The selected plants should be younger but not fast growing trees as they are weak wooded. In relation to these trees shrubs can be planted, and plays an attractive role in having songbirds.

In some cases landscaping requires more detailed study in large development areas to create continuous and identifiable places along waterfronts. Therefore, a landscape architect should be helpful. The plants, furnitures and paving materials should be determined in the beginning for the whole development area and specific items can be used in specific plants to change the environment. The properly landscaped waterfronts easily orients people and provides microclimatic conditions in every time of the year and aesthetically enjoys and relaxes people. (Ruthledge, 1971)

In the meantime, the vegetation can soften a buildings hard edge and can camouflage a parking enclosure and create sense of place and direct
circulation creating barriers with bushes. Trees and tree groups can be used for shelter both in rainy and snowy days.

5.5.4.2. Microclimatic Effects on Planting

The waters edge always have a warmer climate because of the interaction of water and air but sometimes the effect of winds can not be prevented by landscaping.

The prevailing wind causes problems for some activities in order to get over the trees, shrubs, terrains, berming so, solid barriers, paving materials should be used to create and comfortable sites.

Trees are generally used to block to channel the wind and to hold the warmer air near ground especially in summer. Deciduous trees block some wind without preventing the views. The use of coniferous trees are also for the blockage of wind but, it causes problems when the sun light is desired along the waterfront. However, the deciduous trees are useful the some situation created by coniferous trees is true for them too.

Trees also provide shade in hot days of summer for cooling. The protected seating area, along the waterfront can be shaded with shade planting but, plant materials must be selected carefully against the probability of creating uninviting, unpleasant, damp and cool places.

The solid windbreaks can be used within the trees and other natural features. It is best to use them in small areas as they cause turbulence. Plexiglas is one of the solid windbreaks and does not obstruct the view.

The groundcover also causes microclimatic changes in the waterfront. The waterfront can have a glare problem because of reflection from water.

Grass and other dark coloured paving materials such as brick or clay absorb unwanted sunlight and make the uses more enjoyable. (Ruthledge, 1971)
5.6. Urban Design Process

The development process has three stages. First is the planning of waterfront, second is the design of waterfront and the third is the urban design period.

Urban design is the base point of whole development. The right considerations of the waterfront may provide the unification of the whole development and success. These can be with a number of design criteria considered beforehand. These criteria related with:

- Compatibility of mixed uses,
- Focal points and needs
- Topography
- Incorporation of existing and proposed development
- Characterization of the area.
- Equipments needed to increase attraction and interest
- Security and convenience concept.
- Vehicular and pedestrian access in and out.
- Landscaping (furniture, plants, paving.)

5.6.1. Human Scale

The waterfront development must be at human scale. In order to attract and make people spent time in the area human scale is essential.

The humanised environments are more perceptible, intimate and liveable even if the developments are different but not at human scale.

The use of colours, signage, plants and ownings make the area more qualified and qualitative. Also, shelters and the recesses of building create human scale and also are used in sunny and rainy days. The human scales always are more intimate and inviting. People fell comfortable and relaxed in these areas.
5.6.2. Compatibility Of Mixed Uses

The waterfront is having mixed-uses/activities create more interesting places. Commercial and leisure oriented recreational activities and also places of work make the waterfront initial by providing focal points. The interaction of different uses can be problematic, as it can be advantageous. For example, industrial uses on a waterfront that have to be related because of being incompatible /in conflict with the other activities, may sometimes be left in its place. The reason is its being the mainstay of the community and can not be abandoned. Meanwhile, if the industry is not noxious or noisy it is not necessary to camouflage with landscaping or relocation. (Breen, et al., 1980)

Mixed activities support each other. Once the people enter the area, the uses provide different opportunities and more extensive, more variable use of land. The users benefit from their locating together, and so they do. Sometimes this co-operation can not be obtained because of some reasons. Conflicts begin when there is,

- The competition for space (e.g. Parking)
- The safety and enjoyment of the users is jeopardized by contact with industries, traffic, etc.
- The industries cannot operate effectively because of uses of other facilities
- Passive and active uses are located too close to one another.
- The users are from different age groups.

These conflicts can be got over with some preventions around. These are:

- The creation of buffer zones with good landscaping.
- Clear signage
- Development upwind of industries.
- Adequate distances between uses
- Development of complimentary uses
- Well thought out parking schemes
- Well thought out road networks schemes.”

(The Ministry of Municipal Affairs, Vol.4, 1987, p. 64)
Some activities of people oriented spaces that demand open areas can exclude the buffer zones. In this case, aesthetical considerations may help to solve the problem.

5.6.3. Focal Point And Zones

Focal points give identity to the waterfront areas. A plaza, a restaurant, a marina, lighthouse can be focal points at waterfronts that attract and gather people. Generally, the use that is dominant in the area becomes the focal point. If there is no dominance between the waterfront uses we cannot mention about a node. This causes loss of identity.

In some cities, bridges act as nodes that provide visual attractiveness. (New York had 29 bridges in 1983). (Wrenn, 1983) A plaza in heavy relation with commercial activity on/near water also may be the destination point that people make use of and irresistible place. So, the creation of focal points gives identity and orient users to waterfront area.

Figure 5.13. A Music Concert on Waterfront

5.6.4. Visual Attractiveness of The Waterfront

What bring to people to the waterfront is the views obtained. The views or vistas are as important as the natural and historical feature in the city. The visual attraction should also be given importance and care in the plan. So the waterfront plan should protect the views. The new development must be respectful to water. From both sides, the view from the built area to water and from water to the waterfront must not be astonishing and it is inevitable that the good views can be created by good, sufficient and satisfactory physical developments. The view and the physical properties are essential for the favour of the development; it is enhanced by these qualitative belongings.

The waterfront views are generally effective in rivers and lakes. This effectiveness is limited in seafronts as the view may be unlimited. If it is a bay, the impact of views from both sides can be disturbing or enhancing. In a riverfront for example, the uses on opposite banks attract or disturb each other. A promenade having the views of a restaurant a shopping area or a park enhances and also enhanced by the use on the opposite bank. A parking lot may be disruptive to a use such as, a restaurant, a hotel etc.

On the other hand, the waterside roads which is parallel to the waterfront provide views, unless there is uncontinuous development all along the waters edge. They should also have less traffic. Also, new buildings, in the area should not block the vista and the roads can act as the view corridors on waterfronts. (Figure 5.14)

5.6.5. Interaction of Waterfront Location and Heritage

The history of waterfront cities begins at water’s edge. So, the historical heritage of the city can be clearly seen in the existing and historical buildings of the waterfront. In this case, while protecting these values the incorporation of these buildings such as warehouses, representing the industrial waterfront must be one of the goals of the new development.

The heritage of the area and the new waterfront location together create an enormous and powerful attraction from all parts of the city, the region and
also from tourists. The old buildings give authenticism to the area, inform the users how the area had been looked before.

The active and supportive use of these old structures may sometimes make the plan more fitted to the area. The adaptive re-use of ferry buildings, lighthouses, warehouses, etc. and the use of the same and local materials in new buildings can create an effective development and increases the sense of identity.

As a result, the preservation of heritage and flavour of the community can be supportive in creating new susceptible waterfront development plans. The satisfactorily restored buildings and incorporated uses always be the base of the successful, identifiable waterfront areas.

Figure 5.14. Waterfront Views

5.6.6. Characterization of Waterfronts

The waterfront have natural properties that attract many people. Besides natural properties, topography, landscaping, humanized environments
historical features and views are needed for the characterization of waterfronts. Special landscaping, unique historical values, and marvellous views form and to, can create unique characteristics for the waterfront. Also, some additional uses can increase interest in the area. Amphitheatre, skating, tot lots, exhibition space and sculptures can be useful for this kind. The colours, materials duplicate the values listed above giving a waterfront a pleasant, attractive character. Above all, these considerations on characterization should be in coordination and with a comprehensive and efficient design.

5.6.6.1. Safety and Convenience

The waterfront areas are needed to be safe and convenient for uses in every time of the day. The basic features that are essential to create safer places are:

- lighting
- the need for open views
- properly designed landscaping
- walkways
- furniture
- stairs
- ramps
- sitting places etc.

Adequate lighting, both over and ground, the convenience of walkways and ramps for old people and handicapped, children and also for the healthy people are important considerations in design. Easy access of pedestrians and easy circulation of both motor vehicles and bicycles and sufficiency of their parking areas enrich the waterfront area. Also, the protected rest areas from rain and strong winds are required for safe and convenient waterfront for people. (The Ministry of Municipal Affairs, 1987)

For a waterfront city where recreational boating activities are enjoyed much, the development should involve marinas and archillaries. The marina construction should be invested and be under the control of municipality or
public/private initiative or only private development. They can enhance the marketability of a municipality and its very waterfront. The marinas also be supported by restaurants, shops and recreational activities. These are must to increase the waterfront tourism attributes if a municipality attempts to market its waterfront.

Izmir is a developing city and faces many changes in the innercity with the demand both from outside and inside. The changing trends in economy, in social and cultural activities, improvements in industrialization and urbanization as in many other cities and countries affected its waterfront.

In many developed countries the factors that cause the implementation of the regeneration projects in the last quarter of the 20th century, which also affected our coastal cities, can be listed as following:

1. The technological changes and industrial improvements in shipping industry

Many waterfront areas and buildings have been left, abandoned and underused with the new requirements of shipping. Containerization of cargo made the dock facilities obsolete as it required larger spaces and wider and deeper channels for ships. As a result, the port facilities left the central city locations for larger areas where containerization and storage were possible. These new places have generally been at just the outside the city but not much away from. This relocation caused the decline of central city economy and a less use of these areas occurred.

2. The increase in automobile industry and usage.

The increase in number of automobiles encouraged and required the development of new and wide highways and bridges along the waterfront areas inviting public access.

Ports and transportation facilities serving these areas became obsolete and derelict. The roadways that were constructed along the waterfront caused problems as they acted as barriers between the city and the waterfront. Nowadays, the importance of waterfronts in cities and in lives of citizens have been understood and in many cities the roads are directly constructed playground.
A REGENERATION PROJECT IN İZMİR

6.1. The Effect of Changes for Regeneration on İzmir’s Waterfront

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- **The increase in automobile industry and usage.** The increase in number of automobiles encouraged and required the development of new and wide highways and bridges along the waterfront areas preventing public access.

Ports and transportation facilities serving these areas became obsolete and derelict. The roadways that were constructed along the waterfront caused problems as they acted as barriers between the city and the waterfront. Nowadays, the importance of waterfronts in cities and in lives of citizens have been understood and in many cities the roads are directly constructed underground.
The water pollution, caused both by the sewage and industrial disposals and the discharges of the ships entering to the port, is the other important factor in the regeneration process. The changing perception of the waterfront from livable, walkable, enhanceable area to undesirable and unbearable site made people leave these areas.

The factors listed above had also impacts on the evolution process of the waterfronts in Izmir. The different form of reflections and the results of the listed basic factors that affected the change in Izmir have can also be given as following:

• **The Change in Functional Localities with Technological Changes and Industrial Improvements**

As known, the regeneration process has firstly developed in post-industrial cities of North America and England. The rapidly improving technology and industry affected and changed the socially and economically active waterfronts in these cities. The evolution of the Izmir’s waterfront do not have the same characteristics of change as the developed cities. Firstly, as an industrial city it has not a very long historical past. Therefore, the development of port and other related port facilities and the transportation network have different characteristics.

In post-industrial cities, the innercity dock facilities and the wharehouses that support them and the grain elevators of the past left their places to the new container ports which require vast spaces in outer parts of the waterfront. However, Izmir lives this period in a different way. The lacking space of the old smallport and the technological changes that had effect in all the world caused the relocation of the new container port in the innerbay of Izmir. The early port and the old warehouses on waterfront have left their places to luxurious residential units and office developments. Today, some of the warehouse is already being used for storage and with adaptive re-use can be converted to bars, night clubs, etc.

However, the abandoned grain elevators of the foreign cities are being constructed in Izmir port. That is to say, the warehouses have been lost importance with containerization technology but grain elevators have priority in port areas.
• Transportation Network
The increase in automobile usage encouraged the construction of new highways and roads in the innercity. In spite of the fact that has occurred in the foreign cities, the highways not acted as barriers on waterfront but became a factor for public use of the waterfront site in Izmir. The lining of the residential areas just at the water’s edge prohibited the public access. So, the waterfront roads provided people to reach to the waterfront, therefore increased the public use of the area and provided public rights.

In addition to this, the construction of the highways made the accessibility easy and rapid, so, that the industrial uses that require transportation facility left the central city localities preferring to be more close to the raw material. With this aim, some of the industries left for new localities at the hinterland. (Some of the industries prefer centercity locations for inexpensive work power and discharge possibilities to sea.)

Therefore, the commercial, residential, office functions and nowadays, cultural and recreational functions are being located on waterfronts to increase public quality and amenities and public use of the waterfronts.

• Inner City Migration
In opposition to the decrease in the coastal foreign cities, the employment opportunity is much more available in Izmir. This encourages migration to the city. The demand on the waterfront areas cause increases in land values that make poor and migrants to locate in inner-cities different than the post-industrial cities. Therefore, not the condominiums for poor and unemployed but residences for high income groups are being constructed as the result of the economical system (Capitalism).

As a result, however the effects are different in Izmir, the problems caused by these factors can be stated as same in many cities. These are:
• The problems in the inner city transportation created by the port facilities.
• The damage in the ecological system.
• Water Pollution
• The Death of Water Life
• The lack of Public spaces on waterfronts.
6.2. General Layout of Regeneration and Design Process

The previous chapters inform us about the danger that confronts the waterfront cities and the procedure that has to be realized in redevelopment process of waterfronts, both in foreign cities and waterfront cities in Turkey.

It is significant and obvious that water had been the basic factor in the improvement of civilizations and the waterfront had been their living environment, as it provided many opportunities as defense of cities as in Ur, located along Euphrates, in getting water products, later on, in commercial activities, transportation etc. This long evolution period changed the characteristics of waterfronts, in land and in water direction and also, the activities on it. The changes in economical and social life and improvements in technology affected these specific sites. Ports and harbours had been constructed and supported by railroads and by highways. The changes in physical characteristics, functions, environmental quality and the governmental policies (generally the populist policies), jurisdictional responsibilities affected the waterfronts. Filling operations, increase in degree of water pollutants, competition between functions for waterfront localities continuously deteriorated these areas. Many institutions and organizations have the authority in developing decisions about development issues related with the waterfronts, however, these are not rooted from a strong base, such as the requirements and needs of public.

The different governmental policies change the development and the feature and the image of the waterfront sites. It is made clear that market-led approach as in England and in U.S.A. mentioned in chapter 4, generally results in with failure due to the lack of objectives that involve local citizens and the lacking accessibility and the public space quality. On the contrary, in Europe, strategic planning by governments, considering the public requirements have been successfully realized. In Europe there is a determined coastal land defined in legislations and in detailed plans that USA and England do not have. However, the lack of information about the waterfronts make the authorities incapable of redeveloping these sites successfully. Especially, in Turkey, the populist policies (tourism policy), the economical benefits get over
the natural values and historical heritage of waterfronts. Additionally, the coastal acts can not clearly determine the details related with the development issues in rural and urban waterfront areas. The characteristics of these urban and rural areas require new definitions and regulations. The urban waterfront lands in big city centers are in need of regeneration and redevelopment but the act prohibits any new construction except a few mentioned in chapter 4. Therefore, the waterfronts are declared as untouchable areas in Turkey, however regeneration and redevelopment of urban waterfront sites are encouraged and financed by the governments in many developed countries. The determined shoreline in our urban waterfronts prohibits efficient and required developments that should increase the public space quality, visual and air rights, the enhancement of the waterfront and also, the inner-city economy.

Although the policies are different in different countries, the planning, design and implementation process of waterfronts should be the same. The planning process that is given in chapter 5 has to be considered and prepared for all types of waterfront development projects for achieving successful results. Therefore, the waterfront development process is applied in this regeneration project.

Redevelopment projects as stated many times generally had taken place in post-industrial cities. Izmir which will become and also is giving clues about becoming one of these cities has to be considered as a whole within the scope of waterfronts. A detailed planning approach should be supplied for the redevelopment of the waterfront. The unique characteristics, user group, demands and requirements, potentials and constraints, the existing and neighbouring uses, pedestrian and vehicular traffic should be determined. Development and implementation process should be handled with care integrated with the neighbouring sites, providing higher public quality and amenities with a detailed urban design process.

Therefore, for a successful regeneration project the social, physical, environmental, geological and historical evolution of each different waterfront site should be examined. So, for to realize a regeneration project in Izmir, the historical evolution period at first hand should be given information about.
6.3. The Historical Evolution of The Izmir’s Waterside

The historical evolution of the waterfront cities generally show that the waterfronts have been under development in every time period. The social and economical changes that have taken place, especially seen in USA, caused redevelopment of these sites. The natural coasts have always been preserved but the urban waterfronts having central locations have continuously gone under change with specific purposes such as to increase the inner-city economy, to increase the quality of life, etc.

The urban waterfronts serve public, not a unique person and the success of the redevelopment projects that have been implemented in foreign countries as mentioned in previous chapters were based on this issue. This aim also allowed land fill process in some parts of the waterfronts, such as the Battery Park City Project, in New York. The development has taken place on a reclaimed area. It is again important to impress that the natural coasts and beaches, although they have central city localities have been preserved.

In this historical content and the development attitude of the foreign cities, it will be helpful to examine the historical evolution of the waterfront in Izmir both for comparison and to realize a redevelopment project in Izmir.

Izmir has very long historical past. Although there are some other decisions about the first settlement place, it can be said that it had been first developed in 3000 BC, in Tepekule, with the name of Symrine. Menderes and Gediz Rivers were flowing through the city and had many impacts on the development and in changing of the waterside.

Alexander The Great, mentioned in many history books as the developer of Izmir, has chosen Pagus Mountain for the new location of the city. Later on, Izmir became a port city in Byzantine period and has been developed more on the foots of the Pagus mountain. It had an important role in the transportation of agricultural goods, in trade activity. This fact affected the waterside and waterfront development and changed them more. The filling process has taken place many times to create land for new uses.
Figure 6.1. The Plan of İzmir City and İzmir Bay in The Prehistoric Period
(Source: E. Canpolat, “İzmir’in Kuruluşundan Bugüne Kadar”, İstanbul, 1953, p.17)

Figure 6.2. Plan of Antique İzmir in 7 BC.
(Source: Prof. Dr. Ç. Atay, “İzmir’in İzmir’i”, ESIAD, İzmir, 1993, p.98)
Figure 6.3. The Plan of Antique Izmir City in 7 BC

Source: Prof. Dr. Ç., Atay, "Izmir'in Izmir'i", ESIAD, Izmir, 1993, p. 98)
Figure 6.4. The plan of Izmir City in the Roman Period
(Source: E. Canpolat, "Izmir'in Kurulusundan Bugune Kadar", İTÜ, İstanbul, 1953)
6.5. The plan of İzmir in 18th Century
(Source: E. Canpolat, “İzmir’ın Kuruluşundan Bugüne Kadar”, İ.Ü., İstanbul, 1953)
Figure 6.6. The Filled Part of The Former Basin in 18th Century
(Source: E. Canpolat, “İzmir’in Kuruluşundan Bugüne Kadar”, İ.T.Ü., İstanbul, 1953)
In the second half of 19th century, the railways and roads have been constructed. This event caused the development of many other neighbourhoods in other parts of the city, such as, Karşıyaka, Bornova, etc.

The trade activity and the unproductive land, except the productive lands along the rivers, encouraged migration to the waterfront zones where agriculture was available.

İzmir has been one of the most important ports in the region, where trade activity has taken place, so, that caravanserai and inns were constructed for the merchants.

The city’s old inner basin was surrounded with many trade activity units, mosques, inns, a harbour castle, residential units, customs offices, etc. The neighbouring sites included generally residential units as follows:

KORDON is the name of the place from Konak to the new harbour. It was constructed for the prevention of smuggling, and the first part was opened to public in 1875. It was and is the attraction point and walking place along the waterfront for high income groups, especially the foreigners and businessmen living in İzmir.

It has two parts. The first part of Kordon from Pasaport in north direction had social and cultural activities. There were beerhouses, wooden houses, post office, sport clubs, health service areas, hotels, theatres, cinemas and consulate buildings. That is to say, generally cultural functions situated along the wharves. Many people has been fished on this part. There was also a railway system along the waterfront which was constructed on reclaimed area of 6 m. in width.

The second part was occupied by the port activities. Marine agencies, post office, hotels, restaurants and grocery stores have been situated along this part. The road along the waterside has been being used for loading and unloading activities.
Figure 6.7. The plan of İzmir in 19th Century
(Source: E. Caroolat, "İzmirin Kuruluşundan Bugüne Kadar", İ.T.Ü., İstanbul, 1953.)
Figure 6.8. The Filled Part of The Waterfront in 19th Century
Figure 6.9. The Historical Development of The Shore Band of İzmir

Figure 6.10. Walking Place along Kordon
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p.98)

Figure 6.11. Trolleys on Kordon
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p.113)
Figure 6.12. Buildings on Kordon (on The First Part)
(Source: Prof. Dr. Ç. Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p.75)

Figure 6.13. Railway and The residential units in First Part of Kordon
(Source: A Postcard by Rencai Color)
Figure 6.14. Pasaport - The Entrance to The Harbour
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p.78)

Figure 6.15. İzmir Quay and The Entrance
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p.95)
Figure 6.16. The İzmir Port
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESİAD, İzmir, 1993, p.155)

Figure 6.17. İzmir Port - Loading and Unloading
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESİAD, İzmir, 1993, p.157)
Figure 6.18. Docks at İzmir Port
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p.159)

Figure 6.19. The Quay In İzmir - People Fishing
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p.135)
In Konak, in the beginning of 1900s, the military service area, Sarıkışla has been constructed on the waterfront just about 100 m. away from the waterside.

KARATAŞ was and KÜÇÜKYALI (Karantina) were residential areas. The high income groups, especially the merchants, have chosen Küçükyalı to
live in. There were mosques and churches on the waterfront that sat in harmony.

Figure 6.22. Karataş
(Source: Prof. Dr. Ç., Atay, " İzmir'in İzmir'î", ESİAD, İzmir, 1993, p.51)

Figure 6.23. Karataş
(Source: A postcard by Renci Color)
GÖZTEPE involved residential areas on waterfront. Waterside houses were the basic features of Göztepe.

In Karataş, Küçükyağlı and Göztepe the waterfront has been surrounded by the residential uses, that means private landownership and the construction...
of houses just on the water's edge proved that there was no public use and access to the waterside.

MELES CREEK was another place where people benefited from. Generally, the place attracted the middle income groups rather than the high income groups that preferred to be in Kordon. People had baths and swam in Meles creek. The banks were also used for picnicing.

KARŞIYAKA (Cordelia) is the place developed as the result of the construction of railways and roads. It was developed on filled land and the sandy beach of the first times of the settlement has been destroyed and the waterfront became a rocky area in late 1800s.

Figure 6.26. Waterfront of Karşıyaka (Cordelia)
(Source: Prof. Dr. Ç., Atay, "İzmir'in İzmir'i", ESIAD, İzmir, 1993, p. 38)

In the near past, the waterfront of Karşıyaka was full of treefull gardens and 1-2 storeyed houses at the back and 2-3 storeyed ones at the front with a road passing in front of them. There were a lot of vacant land. the waterfront was used by the public. The wide sidewalk just near the sea provided an enhancing walks along the waterfront. There were also theatres and sport clubs. Many other cultural activities have been situated on the waterfront.
Figure 6.27. Houses on Waterfront The Pier İn Karşıyaka
(Source: Postcards by Renci Color)

Figure 6.28. The Pier İn Karşıyaka
(Source: Postcards by Renci Color)
6.4. The Existing Situation of The Urban Waterfront in İzmir

Many activities have chosen place on urban waterfront. Their localities will be given in partial explanations and the examination areas include the waterfront from İnciraltı to Karşıyaka.

Narıdere-İnciraltı-Balçova-Üçkuyular Region: Restaurants, dormitories of university, gardens educational institutions (Lycées), a marina, a department store, military service areas, residential units varying in heights from 2 to 8 and vacant lands in which recreation facility is proposed exist in this part of the waterfront.

In Balçova, from the D.E.Ü. hospital to Üçkuyular, there lies a highway on waterfront. Many vacant lands along the highway are under construction for retail activities. Also, Migros, the department store, some petrol offices and an open bazaar on the waterfront limiting the public use of the waterside in some parts. People do not really prefer walking along the waterfront in this part, any way. Middle and high income groups are the residents in this zone. Through all other parts of urban waterfront wide vehicular roads pass along. From Üçkuyular to Konak there is a line of 8 storeyed buildings in which many of them have commercial functions in their first floors. They block the scene and stand as a wall on the waterfront. The construction of the Mustafa Kemal Shoreline Boulevard provided public use on waterfronts. People bike, run, walk and do many other things on the walkway along the sea. There is also a military zone on waterfront. In this part generally the high income group lives.

In Konak, cultural facility areas, a great Konak urban square, the governmental buildings, bank exist. The public use areas provide the enhancement of the waterfront. The Konak square is a problem area but the high rail transportation project is continuing on this land.

In addition to the usage mentioned about there is a marine military zone, port, working areas, offices, bars and cafes, restaurants, residential units from Konak to the Harbour. A great public square exists. Although Kordon is used much limited space serves the people.

Besides, from the square of Republic to the harbour, the sea is under filling process for the construction of a highway.
Harbour is in the inner bay, in the center of city and is developing but causes many problems which effect the innercity. Transportation and pollution are the fundamental problems in this area. The oil and wastes that the ships discharge and the chaos in vehicular transportation because of barriers carrying goods in and out of the harbour makes it a disturbing function. The silos and the obsolete and the south of the harbour from unwanted scenes. This area is one of the problem areas and in base map its proposed as the part of CBD. From this part, no one permitted to reach to the waters edge, no public use. Melez Creek reaches to bay from the east of the harbour.

From Halkapınar to Bayraklı, the listed functions take place in order; autoshow galleries, industrial highway and railway, estuaries of small creeks. (polluted with industrial waste) vacant lands, large stores, governmental institutions, the depots, residential areas and railway take place in land direction. In the development plan, this region is proposed as the extension of the CBD. In sea direction there lies a park and playgrounds are along the waterfront (In order to provide the continuity of public areas along whole waterfront) up to Turan, but efficiently used, as it is away from residential areas, and is not cared for. In residences generally low and middle income group live.

From Turan to the boundary of settlement area of Karşiyaka in land direction, the forest zone, residential zones, having commerce beneath the buildings and as in the south, 8 storeyed congruous buildings exist. There are small gaps for the access to waterfront. In the generally, high income groups live on waterfront sides in the sea direction, industrial plants which are economically efficient, and small old houses exist in Turan. The inner bay is polluted by the wastes of these industries. This development effects the waterfront view from the other parts. Shipyards in Alaybey is the functions in entrance of Karşiyaka. The civil and military shipyards prohibit the people to reach the waterfront. The construction and repair facilities create noise that disturb the residents. The water and noise and aesthetical pollution caused by the ships annoy people. Such a function at the entrance of a such a good region effects the image. Also the walkway with an unexpected view a high, gray concrete wall.
Figure 6.29. Location of The Site
The whole waterfront has parks and recreational areas for public use. Bahribaba Park, Karşıyaka Pier (in which cinemas and music club exists), Olof Palme recreation area, Suat Taşer Theatre, Hüzî Velidedeoolu Park, A.A. Saygun Park, Ferry Pier in Bostanlı, and Archeology Museum have localities on waterfronts. It is the most sensitive part of public use on Izmir's urban waterfront, and provides many opportunities to people.

In the north-east direction on the last part of the waterfront, an area for the treatment plant and an area for the General Directorate Of The Railways are proposed in the base map.

6.5. Coastal Zone Regulations and The Requirements for Special Legislation

The coastal act 3830 determines the development rules on waterfronts. It declares that the coastal band from shoreline to land direction is 100m. In width, and it is formed by two parts of both 50m. in width.

The first half of the coastal band in sea direction is the part on which only green areas, playgrounds, walkways, seating places and roads are allowed to be constructed. The second half is only permitted for the construction of temporarily used tourism facility areas, motorways, open parking areas. On the other hand, if it is a land fill area, infrastructure, recreation areas (parks, playgrounds, outdoor sports, picnic areas), sea and air transportation units are allowed.

In the city centers on waterfronts the shoreline determines the boarders of the development. The construction in sea and also at water's edge is prohibited, except the water-dependent uses.

However, the changing characteristics of cities, the demand on waterfronts for people oriented activity areas including cultural and commercial activities that increase the enhancement of these places in the chaos of the congested city require new development issues and legislations for such specific sites in city centers. Although there is not a determined shoreline in USA etc. Waterfront development/redevelopment projects are successfully implemented, as in Battery Park City in New York and The Opera House in
Sydney examples. There is nothing left to be preserved in natural meanings in our urban waterfronts, hence the preparation of redevelopment projects which have the potential to provide public rights on waterfronts can be effective in efficient use of these sites. The new developments that consider public amenities and the quality and also the characteristics of the waterfront provide various opportunities to both city and the citizens. The examples given in previous chapters show that not the regulations but the detailed analysis of the site, the urban context, the users and their needs, the preparation of good planning and design strategies with an efficient organizational frame make the waterfronts livable.

6.6. Determination Of The Project Area

Determination of the project area requires comparison between the alternative sites according to criteria given below.

- General location, A
- Cost of land acquisition, B
- Potential difficulties in assembly, C
- Special use restrictions and regulatory controls, D
- Potential compatibility of surrounding land uses, E
- Requirements for supporting public improvements, F
- Unusual site conditions that can provide special opportunities or cause problems, G
- The size and the shape of the site, H
- The property owners willingness to sell or lease the property or to participate financially in development or as a tenant.” I

(Wrenn, 1983, p.78)

The alternative sites that were determined with the examination of the base map are the Dalyan in Balçova on the south-west of the waterfront, proposed as a fair place and park, the hinterland of the harbour on the south-east which is proposed as the part of CBD, the Bayraklı region on the east
waterfront, lying in north-south direction and the land on which the shipyards exist.

The comparison shows that the shipyards' place is the most available place for redevelopment. In addition to the mentioned criteria, some other factors encourage development on this part of the waterfront in physical and social terms.

In previous subjects the examination of the waterfront in the base map and ecological research showed that public activity areas, such as cultural especially, the recreational facility areas are to be proposed.

The base map itself proposes the continuity of the public open spaces along the waterfront, taking care of the public rights and environmental protection.

Table 6.1 The Comparison Between The Alternative Sites for Development

<table>
<thead>
<tr>
<th>Criterias</th>
<th>Dalyan</th>
<th>Hinterland of Harbour Place</th>
<th>Bayraklı</th>
<th>Alaybey Shipyards</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>B</td>
<td>+</td>
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<tr>
<td>F</td>
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<tr>
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<td>+</td>
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<tr>
<td>H</td>
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<td>I</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

The base map proposes the growth of CBD through north direction along the waterfront up to Bayraklı, and also the development of public activity areas just along the water. It is decided that the whole waterfront around the bay will be publicly used. This decision causes obsolescence in some parts.
In addition to this proposal, there is the probability of the relocation of the harbour in order to decrease every kind of pollution and clearance process of the inner bay. The interviews with the local governments showed that the relocation the harbour was inevitable although its development has not finished yet. Therefore, the shipyards in Alaybey has to be relocated due to this event and also the removal of the military zone in the old part, in Pasaport. With the shipyards being obsolete, a regeneration process will be needed.

Shipyards have location just at the entrance of Karşiyaka. Many people prefer Karşiyaka to enjoy being near water and wonder along the whole waterfront.

The moving cranes, gray walls, the noise in day and night time and the need for more open spaces stress the regeneration of the area as a gate, as an impressive entrance to Karşiyaka.

A closed commercial area is also, proposed in Turan within the industrial district. The commerce activity encourages development on the determined area. The integration of two zones and the potential forest land in north direction direct the area to be regenerated for people from all parts of the city. Consequently, the waterfront land in which shipyards exist is determined as the project area.

6.7. The Reasons of The Project Site’s Selection

- Accessible from every part of İzmir.
- Have not mixed land ownership pattern.
- Easily and rapidly developable site.
- Have much usage potential.
- High potential for to increase the public quality than the other sites as they can be proposed only as working and cultural waterfront areas.
- Less finance for infrastructure as there is existing infrastructure.
- Have potentially used waterfront area and developments in neighbouring sites.
- The Municipality’s demand in mixed-use development in case of change.
• The repositioning of the shipyards.
• The availability of the public-private partnership for development as there will be great revenues.

6.8. Aims and Objectives of The Project

The aims and objectives of the project are determined as following:
• To generate and regulate the vacant land with the replacement of the shipyards.
• The beautification of one part of the waterfront of İzmir and the entrance of Karşıyaka.
• To provide enhancable area through urban design.
• To create a livable environment for pedestrians and for all age groups.
• To supply the demands for a green zone along the waterfront with efficient and intensive landscaping. (choose the trees according to the climatic variations).
• To integrate the land to neighboring sites.
• To decrease the effect of noise and water pollution (with a treatment plant), environmental protection.
• To increase the public use and public realm with increasing accessibility.
• To increase the environmental, social and physical qualities.
• To provide the continuity of the public open green spaces along the waterfront.
• To increase the local amenity.
• To increase the picturesque aesthetic.
• To create an even public spaces to attract many people.
• To propose year-round activities.
• to provide rapid development with commercial activities.

6.9. Analysis of The Project Area

Analysis of the project area includes:
• Location of the area,
• Situation of the area,
  Neighbouring uses,
  Access to the site by highway or railroad,
  Pedestrian circulation,
  The type and location of utility services,

• The Characteristics of The Project Area
  Existing Land use and Land-ownership Pattern
  Exceptional views of and from the site,
  Distinctive natural or cultural features.
  Geological Structure
  Extreme climatic variations.

6.9.1. Location of The Project Area

The project area is located on the waterfront in the north shore of the inner bay of İzmir, being a part of Karşıyaka waterfront.

Karşıyaka covers the whole waterfront area in north direction. Gediz and many other small creeks open up to the sea from this region. The waterfront is on land filled area of about 100 m. in some parts. The project area is also on filled part of the waterfront.

It was on the route of İzmir-Çanakkale highway and is just at the entrance of Karşıyaka from east direction. It is at the crossroads of many transportation opportunities.

Intensive residential districts surrounds the area from both north and west direction and the sea forms a borderline on the south-east. The low income group live in the north and the high income group in the west. Also, there is the existing industrial district in Turan, on the east of the area where a commercial activity area design is being prepared for, and a proposed CBD extension which already has department stores, governmental institutions and vacant lands exist on the east of the area along the waterfront.
6.9.2. Situation of The Project Area

The area is situated between the eight storied buildings in the west, that have commercial activity in the ground floors, and the sea in the south-east.

The vehicular access is provided with the highway passing adjacent to the area and with the railway system which is in north direction. The vehicular entrance from the highway to Karşıyaka by an overpass also provides public transportation. There is a bus stop on the south-west of the area. The nearest railway station is in Turan district and in the center of Karşıyaka. The Light Rail Transportation system is being constructed in Izmir, and the provision of this system will make the access from other parts of Izmir more easier.

Educational services, parks, commercial and cultural activity areas, theaters, sport areas, cinemas and playgrounds are all at accessible distance. The central zone lies on the south-west direction and has the potential of many users. Along the waterfront the Karşıyaka pier serves for marine transportation ahead of the central area. Parks and public open spaces are situated along the waterfront between the project area and the pier. The pedestrian activity is very high in these places and encourage the use of waterfront both in day and night time, in winter and in summer. Many people either from north or from west direction enhances the walkway on the waterfront and reaches to the project area.

The Great Channel Project is being implemented, and is directed to the treatment plant which is on the west of Karşıyaka. This channel is in the north of the project area. There are also, pumping stations in Bayraklı and in the north of Çanakkale- İzmir highway, in the project area’s neighbourhood. The fresh water will be supplied from the existing system. There is also a fresh water system parallel to the great channel.

The electricity requirement is provided from the local system, which also depends on the electric distribution unit in Bornova. The existing system is an underground system and serves the whole waterfront in Karşıyaka.
Figure 6.31. The Existing Land Use
Figure 6. 32 Vehicular and Pedestrian Access
Figure 6.33 Solids and Voids in Karşıyaka
6.9.3. Existing Condition of The Site

The project area is on land filled area as the other parts of the waterfront. The project area involves a civil shipyard (belong to Maritime Bank), and military shipyard. It covers a total area of 15 ha., of which 8 ha. is for the civil shipyard and 7 ha. for the military shipyard.

In the civil shipyard 5 storied administration building and 2-3 storied ateliers take place. These are; Ship-building atelier, machine and motor ateliers, electricity atelier and wooden equipment ateliers. The shipyard has an achievement of the repairment of 20 ships and the skidding of 40 ships annually. Also, the annual capacity in steel processing is 1300 tons.

The interviews with the managers showed that the researches about the new location is being made, and the residents have complaints about the noise and the scene generated by the shipyards and the image and perception of their of their regions. The workers also mentioned about the difficulties in accessibility, created by the traffic congestion (the affect of lorries and trucks, innercity and outercity transportation vehicles) although they live near.

No information was given by the naval military shipyard because of the security, but 1 and 2 storied buildings exist in this part.

Some regulations have been done after the filling process for the shipyards. Therefore, it has a material filled base. The ground cover has a stabilized structure with the use of concrete and gravel in its content. The floor area should be reinforced and strengthened with concrete piles for the construction of high buildings and for landscaping the concrete floor should be broken down and instead, soil in minimum 1m. of thickness has to placed.

Illica creek passes through the area, in north-south direction, providing a discharge base for the shipyards. It is the boundary line between the two separate shipyards. Populus, piper nigrum and eucalyptus trees form the landscaping in the area, being planted around the buildings.

The view both from inside and outside of the area is enhancing, but from the residential parts this view is being prevented by the high walls of the shipyard.
The utility services as sewage disposal, electricity, etc. depend on the existing infrastructure. Later, the realization of the Great Channel Project (some pumping stations were constructed) will make the sewage disposal easier with preventing the wastes to be discharged to the inner bay. (Figure 6.35)

The microclimate is mentioned about in previous topics, but in addition the area has a cooling breeze from south-west direction in summer.

6.9.4. Physical Characteristics of The Project Area

6.9.4.1. Topography

The topography is examined both for land and waterbody.

The project area is a landfill but strengthened with concrete groundcover and seawalls. It is a flat land in intensively built part of the city. Therefore, there is no probability of slopage and erosion at water's edge.

The topographical conditions of the waterbody is given in figures 6.36, 6.37 showing the bottom profile of Izmir Bay. The contours changes between 1m. and 20m. In the inner bay. The deepest part of the inner bay of 20m. is at a distance of about 7.5m. away from the bayhood. It can be understood that the first contour line shows 5m. deep regions in adjacent areas to the project site, however, it becomes more deeper in various parts of the inner bay. The 5m. depth provides the availability of the access of many ships to the site.

6.9.4.2. Pollution and Properties of Water Bottom in Izmir Bay

Izmir bay has five parts as seen in figure 6.38. The inner bay, central bay, outer bay 1-2-3. The inner bay is the most polluted part. Figure 6.39 shows the pollution and the change in the bottom of the bay. More than half of the bay completely covered with black mud in 1980.

The pollutants are:

- "Domestic pollutants created by the 3 million pollution equivalents.
- Pollution dragged by the surface run off due to precipitation incident upon the city and bay catchment area.
Figure 6.34. Existing Condition of The Site
- Industrial pollutants generated within and outside the city.
- Chemical fertilizer and pesticide residues brought by irrigation return and drainage
- Pollutants discharged by creeks and Gediz River.
- Pollutants due to marine traffic and port activities." (I.B.Ş.B, 1996, p.165)

In the shallow waters, there are pathogenic microorganisms caused by the untreated waterfront discharge and lack of shore management.

Oxygen exist in many parts except the inner bay and the river mouths. In other parts there are horizontal and vertical water circulation. The wind, solar radiation, tide and other effects on sea provide the reoxygenation.

Figure 6.38. The Parts of İzmir Bay
(Source: "İzmir'in Çevre Sorunları, İ.T.O., 1995)
Figure 6.39. The Pollution and The Change in The Bottom of The Bay
(Source: "İzmir'in Çevre Sorunları, I.T.O., 1995)
In mostly polluted parts of the bay nutrients, phosphorus and nitrogen, are the basic determinants of pollution. They are rich in the inner bay and at the mouth of Gediz River. Urban and irrigation wastes are the causes. (I.B.S.B., 1996 p.165)

In Izmir Bay "with its geological, morphological and biological characteristics, was a very suitable place for inhabitance, growth and reproduction of marine organisms for a very long time" (I.B.S.B., 1996, p.166)

The outer bay has a potential for biological diversity. The central bay, although there is pollution, some living organisms try to live in this part but in the inner bay no biological life can be seen as the result of hydrogen sulfur gas (I.B.S.B., 1996)

Therefore, the pollution is based on domestic and industrial wastes and there is biological life in some parts of the bay where possible.

In order to help the clearance of the bay and to prevent more pollution recreational open spaces should be developed on waterfronts.

"When creating open public space recreational areas for city areas around Izmir Bay with natural potential for these purpose should be primarily considered. The nature - human relationship can develop more positively when natural habitats of organisms are protected, improved and opened to the visit of people... In addition of these activities, new sightseeing and meeting places, such as marine parks, city aquariums, natural history museums, botanical gardens, which will serve as meaningful earns to enrich the natural values and develop the conscience of environmental protection besides recreational activities must be constructed." (I.B.S.B., 1996, p.167)

6.9.4.3. Hydrological Properties

The wind has an intensive effect in Izmir Bay. It causes changes in water level, in water temperature and in direction of waves. It has also an important role in the sanitary quality, generally causing the water quality to increase but only at air-water interface. (General Directorate Of State Hydraulic Works, 1971)

The direction of waves is determined with the prevailing winds. In summer westerly winds and in winter easterly and mainly northerly winds have
effects in turbulence and direction of waves trying to decrease the pollution by this way.

The water temperature, salinity and density occurring due to the microclimatic changes are also other specific issues that have to be considered. (Figure 6.40) The types of plant species, the uses on the development area are directly affected in design period according to the properties mentioned above. The high salinity prevents plantation just at the water's edge, the pollution level prevents the proposal of water oriented activities.

The water temperature in inner bay has the lowest degree in November on water surface but when the depth increases, the lowest temperature is obtained in April, according to the figure 6.40. In May, it decreases as the depth increases however, the density increases with the increase in depth. The highest temperature is seen in August at water surface.

The density of water changes also due to the depth. It has the peak value in November from the surface to the depth of 10m., and in August, it has the least values at water surface.

The salinity value in inner bay has the highest value at water surface again in August, as evaporation mostly takes place in this time of the year. In November 15 metres from the surface to the bottom has the most salinity. However, in April the salinity level is same both at the surface and at the bottom, although the depth increases.

6.9.4.4. Existing Shore Structures in Project Site

Seawalls and piers have localities on the shore. They are both made up of concrete and in some parts are in good conditions and available for new developments. They can be actively used for increasing interaction between people and water by way of constructing water-related and water-dependent uses. They can be re-used as viewing areas and public activity nodes, so that, they provide direct public access to the water's edge and public enhancement on the waterfront.
6.9.4.5. Microclimate

Hot and sunny days in summer, cold and rainy days in winter form the characteristics of microclimate in Izmir. The average temperatures are as followings:

Annual average temperature: July: 27.6°C, January: 8.5°C
Maximum minimum temperatures: August: 42.7°C, January: 6.5°C
Annual average precipitation: 693.2 mm
Average humidity: July-August: 49%
Annual average sunny days: 146.4 Days.
Annual average rainy days: 56.8 days

The prevailing wind due to months:
SE: January, February, March, April, October, November, December
W: May, June, July, August, September. (E.Ü. G.S.F., 1976, p.8)
Figure 40: Density - Temperature - Salinity Data Inner Bay of İzmir

Density - Temperature - Salinity Data

- Depth (meters) vs. Temperature (°C)
- Depth (meters) vs. Salinity (%)
- Depth (meters) vs. Density (g/l)

Source: İzmir Projesi, General Directorate of State Hydraulic Works' CAMP.
Figure 6.41. The Microclimate in İzmir

Source: O. Gündüz, "Fiziksel Planlama Çalışmalarında Çevresel Yaklaşım, 1980"
6.10. Reasons for Redevelopment

The reasons are listed below:

- **Noise:** The interviews with the local residents showed that repair and construction facilities created noise in every time of the day.
- **Water pollution:** The discharges of ships and oil are directly given to the sea.
- **Prevention of Public Access to Waterside:** The shipyards acting as a barrier along the waterfront prevent pedestrians to reach to the waterside from west and north direction.
- **The Lacking Aesthetical Values and Views:** The gray walls of the shipyard block the view of and the winches working all the time disturbs the nonexisting view.
- **Blockage of The Continuity of The Waterfront Walkway:** The shipyards as a castle have great walls that stand as guardians on waterfront where pedestrians reach and dislike.
- **Location:** It is situated very close to the hearth of both Karşıyaka and İzmir's proposed CBD.
- **The rediscovery of water as a source for urban recreation.**
- **The proposals of the development plan:** The development plan proposes the stretching of the Central Business District through the north direction and public open green areas surrounding the bay, in varying widths.

6.11. The Reasons for The Mixed-Use Waterfront Project

In the industrial development period, the waterfronts have extensively been polluted by the ships and other port facilities. Later on, being abandoned and polluted places, the waterfronts became unlivable and undesirable. The people escaped from these places as their waterfront perception have changed by the highways as unapproachable, by pollution as unswimmable, sewage and industrial waste disposal area, etc. In some big cities as poor lived in the
abandoned buildings of the old port areas and in the inner city these areas became the point of crime and danger.

To overcome these problems and revitalize the city center as it had been once, the redevelopment projects were seen as the savers of these areas. The different sites require different kinds of procedures and development issues. The unique characteristics as social, physical, environmental, geological and microclimatic factors have to be considered in predevelopment period. The properties of a waterfront site can also differ from one another although they are both the parts of the waterfront of the same city. The surrounding uses, infrastructure, land-ownership pattern, development opportunities, demands and requirements for the site can be effective on the type of the development.

The obsolete waterfront sites have generally inner city locations, especially just adjacent to downtowns. Therefore, understanding the importance of the public rights and use on these areas the mixed-use regeneration projects have been implemented. The waterfronts have been designed to perform an educative role both in historical and environmental meanings, providing historical and environmental preservation. So, the mixed-use developments including cultural and recreational facilities, excluding the financial revenues in general, have been implemented with public finance. The mixed-use redevelopments have taken place to increase the public quality in these areas and perception of the waterfront attracting many people to these sites.

The reasons of mixed-use development can be listed as following:

- Surrounded by residential uses.
- Increased leisure time
- Accessibility both by highways, railways and waterway.
- Have the potential for public use.
- Perform educative role.
- Commercial and cultural uses for attracting visitors and getting revenues while providing green open spaces and providing social and cultural interaction.
- Adjacent to the local commercial center and the proposed CBD.
• Not residential because of the increasing trend in the construction of high rise luxurious residential units on waterfront sites only for high income groups.

• Not office because already the CBD are has been stretched to the east part of the site and there is need for connecting other parts with the water's edge with a public activity area.

• Not an environmental project because there is nothing left for preservation in environmental meanings. (Not a wetland area).

6.12. The Development Opportunities And The Potentials Of The Project Area

• The repositioning of harbour and shipyard activities closer to the open sea but not much distant from the city.

• The replacement of the military port in Konak to a different location with the effect of the highway which will pass through the waterfront.

• The development of new highways all around the city that will provide linkages and easy access between ships and truck transportation modes, proposing the replacement.

• The increase in the amount of leisure time available. The result is the formation of the waterfront recreation.

• The easy acquisition of land.

• The existence of the İlica creek.

• The availability of easy access with public transportation, by walking.

• The compatibility with the other uses.

• The proximity to the center.

• The close relation with water.

6.13. Determination of Users and Their Needs

The redevelopment area will serve two different user groups. These users can be classified as following:
Local residents
Visitors from different parts of Izmir and from other cities.

These two mentioned categories show different characteristics and have various needs.

The profile of potential users and needs are determined according to the age groups, place of residence, frequency of use and transportation type they choose. Therefore, all age groups visit the area. A detailed, one to one information about the user groups could not be achieved as it required longer time period and finance. The users on neighbouring sites along the water's edge, their activities, wishes are considered. The high accessibility and the locality of the site encouraged the visits of foreigners, so that, besides local residents another user group is decided to get benefit from the area.

Finally, it is approved that the local residents of all age groups, all income groups and visitors from other regions and cities and also tourists can make use of this area.


The development strategy contains the principle function of the project, a development programme, the preliminary cost estimates and the participants of the project. For a good and an efficient development, the determinants of the development strategy should be handed by preparing different scenarios for each.

These scenarios are;
- The Programmatic Scenario
- Spatial Scenario
- Financial-economic Scenario
- Social Scenario (Witbraad, Jorna, 1993)

This regeneration project is a redevelopment project of the shipyards' place which includes the recreational activity area design. The design will include the mixed-use of the recreational, cultural and commercial activities.
The analysis of the development plan gives clues about the recreation need along the waterfront. Limited waterfront land in İzmir for recreational activity encourages the shipyards' area to be redeveloped as a public open space area on the shoreline. The potentials of the area and the activities along the waterfront also, make it potentially developable with recreative aims. The recreational activity areas in Karşıyaka are the parks, Olof Palme (1980), Hifzi Veled (1990), Adnan Saygun, the theatre named as Suat Taşer (1987) and the museum of archeology.

Olof Palme (1980): It covers an area of 1.8 ha. It contains playgrounds, sport areas, primary school and a cafe.

Hifzi Veled (1990): It has an area of 0.35 ha. Playgrounds and sport areas exist.

Adnan Saygun: It has an area of 0.7 ha. and designed with landscaping and townscape elements for realization.

Suat Taşer Theatre (1987): It has the total area of 0.8 ha. of which 350m² is for the theatre for 1000 person and studios for handicrafts underneath.

The Museum of Archeology: It covers and area of 0.9 ha. there are studios for painting and a exhibition center.

6.14.1. The Programmatic Scenario

The requirements and the tendencies in Karşıyaka waterfront determine the functions and their capacities. The project area has generally residential areas in neighbouring lands. Also, an important and a crowded pedestrian promenade reaches to the site through the water's edge. The short distance to the commercial and administrative center of Karşıyaka make the site easily developable and attract many functions. These factors and the easy access to the site both by vehicles and the pedestrians determine the functions on the project area.

A mixed-Use development (the reasons are given in previous sections) is proposed for this special site. Commercial, recreational and cultural activity areas are involved in the program, as the compatibility of these uses encourage visits to the site. The functions have the potential to attract both the local people and the foreigners.
Therefore, the project program is based on a mixture of activities together with a new infrastructure. The total site has a surface area of 15 ha.

The project programme is as following:

Table 6.2. The Project Program

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Usage</th>
<th>Surface Area (m²)</th>
<th>Total Area (m²)</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recreational Activity</strong></td>
<td>Sport Houses</td>
<td>615</td>
<td>615</td>
<td>.41</td>
</tr>
<tr>
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<td>1750</td>
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<td></td>
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<td>2300</td>
<td>.77</td>
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<td>Cafeteria</td>
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<td>425</td>
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<td></td>
<td>Restaurants</td>
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<td></td>
<td>Kiosks</td>
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<tr>
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<td>1.6</td>
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<tr>
<td><strong>Cultural Activity</strong></td>
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<tr>
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<td></td>
<td>Handicraft Ateliers</td>
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This program shows that this kind of a waterfront development should involve more public areas and open green spaces rather than high buildings that prevent views. The percentages give clues about the development characteristic. The site mainly serve cultural activity together with passive recreation areas. The commercial activity is limited because of being near to the other commercial areas. The passive and active recreation areas provide relief and the enhancement of the site.

The program will be held by public-private partnership, that is approved in order to realize the projects rapidly and easily and to reach success, as in many waterfront cities in developed countries. The priority of this collaboration is rooted from the experiments mentioned in previous chapter.

6.14.2. Spatial Scenario

Design quality of public spaces are as important as the buildings that will be constructed in the area. The complementary design within the urban context and the continuity of the walkways and public nodes and activity points are provided in the design.

The spatial scenario of this project includes the following:

- The connection of public places with an attractive route.
- The provision of views from both inwards and outwards with view corridors, (the main pedestrian axis).
• The provision of efficient and sufficient landscaping and townscaping.
• The provision of easy access to the site with pedestrian bridges.
• The creation of active and passive activity areas serving all age groups.
• The provision of opportunities for the handicapped.
• The intensive landscaping in the north part.
• The secure and safe sitting places.
• The elevated walkways reaching to the squares.
• The attractive public nodes and squares serving people as gathering points for different aims.


Financial-economic scenario is based on the municipal policies and efforts due to the wish to realize the development project in Turkey. So, in this project the Great City and Karşıyaka Municipalities will be in charge of the redevelopment. The organizational frame will be prepared by the two municipalities. A redevelopment authority which consists of the members of different community groups; the municipality, the universities etc. will be given the right for developing the site. The private enterprise will be encouraged by the development authority. The implementation will be provided by public-private collaboration. So, public/private partnership will be profitable for a high quality regeneration project in the determined area.

The municipalities play an important role in regulating the acquisition of land, clearance of the project are, etc. So, the public part is responsible with;
• Acquiring and clearing the land,
• Getting planning permission,
• Preparing the programmatic scenario,
• Provide 70% finance (for social benefits),
• Maintain the area in post-development period.

There will be different kinds of costs. These are the site acquisition cost and the site development cost. The site acquisition cost can not be estimated as it can be transferred at no costs from the site owners.
For the construction of the buildings special methods are needed for the stabilization and the strengthening the base, as it is a land filled area. The concrete piles will cause high expenditures. Also, the transformation of the concrete covered ground to a soil base is required for the availability of landscaping, and it needs additional investment.

The amount of initial investment can not exactly determined because of the lack of knowledge about the costs of filling, strengthening the base with concrete piles for construction of buildings, landscaping etc., but depending on the examined projects due to the similarity in functions, the development type and the total area in many foreign cities an investment cost of approximately about 40 million dollars will be needed for the realization of the project. Therefore, the amount that the local governments should invest will be 28 million dollars, and as a result, private enterprise will invest 12 million dollars.

In addition, the maintenance and operation costs will be provided by the local governments. The activities that will be located in the area will provide less benefits in economical terms, as the main aim is to increase social values, public rights and use within the project area. The social benefits overcome the economic benefits.

6.14.4. Social Scenario

The consideration of the waterfront's being a public oriented space make the social scenario to include the proposals and opinions of the community organizations that have rights to intervene and make suggestions.

In this project, The Chamber of City Planners, The Chamber of Architects, The Chamber of Environmental Engineers and The Chamber of Civil Engineers can be contacted and can make decisions on the development of the area. Other social groups that are related with the social demands, about public transportation to the area, about the provision of more green areas and accessible, attractive places. The developer should guarantee the social characteristic of the development area.
Therefore, the social scenario is prepared according to the demands of public and includes the following:

- Increase in quality of life and quality of space.
- Easily accessible from every part of the city.
- Provision of human scale, safety and security in the site.
- Provision of more open green areas along the waterfront.
- Consideration of the handicapped in design.


The functions proposed in the project will be administered by a special organization, called as the Management Authority, which includes members from the municipality. This authority directly be in connection with the local municipality and charged with the maintenance and management of the site.

The shops will be sold and the restaurants and other commercial activity units will be rented for specific time periods. Cultural activity areas will be operated by the municipality.

6.15. Design Concept

6.15.1. Zoning

The activity spaces are located together due to the frequency of use and the user type aiming to create easily perceptable areas forming clearly defined transformation points. Therefore, the plan includes three basic zones such as recreation, commercial and cultural areas. Recreation and commercial zones are located in direct relation with the residential areas in neighbouring sites. The cultural activity area is proposed form the center to the north of the site considering the specific characteristics of the facilities, the frequency of use and the need for wider spaces to serve for especially crowded visitor groups.
Recreation activity takes place in two forms: Passive and Active. Active recreation in the site is a land oriented activity including sport areas and playground, and, the passive recreation includes walkways, sitting places along the water's edge, on the theater hill and in the land-fill area for better perception of the city and the greenery in the north part of the site.

Commercial activity and active recreation areas are proposed in integration with residences, just at the south-west of the site, in order to provide the continuity of the pedestrian usage. The compatibility of residential, commercial and sport areas provides the year round use of the site.

In addition to the defined activity zones, the administration takes place at the geographic center of the site for better control of the site. It is not mentioned as a unique zone as it occupies only an administration building.

6.15.2. Circulation Pattern

The site is made accessible both for pedestrians and the vehicles. Additionally, a railway station in the north and a sea bus pier in the south provide an entrance to the site.

The motor vehicle route is proposed in the area parallel to the main inner city road serving the basic uses that require vehicular service. Also, limited vehicular circulation is permitted in the area for urgent needs. The car parks are generally located within the uses that are mostly preferred and used in night times that serve generally the visitors from the other parts of the city and the tourists.

Public transportation, by bus, by train by taxi and by sea buses are also provided for the easy access of the site form every part of the city.

Pedestrian circulation that is supplied by three main entrances increases the public enhancement of the area. The linearity of the site supported the linear pedestrian axis that provides the continuity of the existing pedestrian circulation route coming from the commercial and administrative center of Karşıyaka. It also consists of various spaces for public gatherings on route. The second and the third main open ended walkways are directed to sea.
providing views. They are designed as view corridors both for the users and the local residents.

These three routes are defined with specific planting and townscape elements. The arcaded paths direct the pedestrians to the water’s edge and also house lighting elements in their structure.

There is also a bikepath proposed along the whole water’s edge for the cyclists considering the existing path following the existing waterfront uses from the central area of the region.

6.15.3. Allocation of Buildings

The water’s edge is dedicated to people in order to obtain good views, to wonder around, to feel relaxed, to talk and to meet with other people and to get the relieved effect of water. Therefore, the proposed buildings are located generally at a suitable distance from the waterbody. Although the uses are not all water dependent, some of the buildings are located on water or just on the edges, except the pier, in order to be in direct relation with water.

The buildings are lower than the residential buildings in neighbouring areas not to obstruct the sea view. The huge buildings in the site are occupied by the cultural facilities and have localities in the north part where no one suffer from their scenery. These buildings also decrease the direct effect of the winter winds on people benefiting from the site without preventing visual access to and out of the area.

6.15.4. Pedestrian Routes and Activity Nodes

The site performing a pedestrian oriented, pedestrianized character have linkages between the walkways, bikepath etc. For the continuity of the action. So that, the proposed walkways gather and distribute many people to various facility areas with the provision of different types of public squares. These routes are also provide the pedestrian freedom between the activity nodes in neighbouring sites, especially reaching from the north, from south-west and north-west directions.
There are mainly three basic squares for directing people in the site. They all have different characteristics in size, in activity, in texture, in physical form and in other properties.

The Clock Tower Square gathers people coming from the south-west and north west direction and direct them to shopping area, to the pier in the south, to cultural district in north, and to the water’s edge in the south-east. It is the distribution point to all parts of the site and mostly used.

The Tower Square provides access to nature alley in the north. It can be defined as the most attractive square as many handicraft ateliers and selling units located around a pool are proposed. This square opens up ways to nature section including natural amenities and performance areas such as glasshouse, birdcage, aquarium and additionally a sea museum. Accessibility to the water’s edge is also available from this node.

6.15.5. Visual Perception

Visual perception is provided with viewing areas and overlooks. The proposed buffer hill with a viewing terrace increases the perception of the whole site. The viewing tower, supported by a restaurant, the open theatre hill gives opportunities to all visitors to get the best vistas from the site. The whole waterfront can easily be seen, so that, the integrity should be supplied in visual meanings.

The Tower Square itself with the stretching steel structures through Sea Museum gives the image of a sail when inside views are considered. This scene from the outer districts increases visual perception and enhancement of the site.

The overlooks in the proposed landfill area provides different kinds of enthusiasm. The green areas and on the other hand the crowded scene of a open and closed public spaces serve many age groups. Also, the viewing nodes along the water’s edge encourages people to sit and talk to each other within the sound of waves.
The views obtained from the paths and the respectful location of the buildings at a considerable distance from the water’s edge provide good views from the site and increase the success of the project.

6.15.6. Landscaping

The site previously had a concrete surface that prevents plant species and trees to grow in many parts. Therefore, in order to obtain available ground for plants sufficient soil is supplied.

In the north, landscaping is properly used in order to decrease the effect of winter winds. Also, in parking areas, vegetation is used to provide enclosure and trees are planted to prevent the direct effect of sunrays on motor vehicles.

Trees and tree groups are used on hills and in other public nodes to relax underneath and enjoy being near water’s edge, also, are used as shelter in many sunny days of the year as shading elements for seating.

A green buffer parallel to the innercity vehicular road and the buffer hill are created to decrease the effect of noise and visual pollution.

Deciduous trees are used to block the prevailing wind and cool the air in site especially in summer without preventing the views. Palm trees are selected in order to strengthen the directive and attractive property of the pedestrian path. In addition, flowerous trees such as acacia are planted at main intersection points of paths for visual enhancement.

Finally, it is given importance and care to plantation, and trees are used for the blockage of the prevailing wind, for providing good views, for siting and relaxing under as shading elements and shelters and for defining the main paths in the area. They are specifically chosen considering the toxicity of the soil and the microclimate.

In many parts, the concrete groundcover is avoided except the vehicular roads. The main pedestrian paths are covered generally with brick paving elements and in green areas blocks of rocks are used in order to increase the sunlight absorption and make people to enjoy being there. Ramps are supplied for the handicapped and old people.
6.15.7. Townscaping

The efficient townscape elements are tried to be chosen for the security and safety of visitors both in day and night times.

Four kinds of lighting elements are used; The first one is for the main pedestrian paths, the second one is for the nodes, the third one is for the secondarily used paths and the fourth one is ground lighting.

The seating elements made of wood and metal are preferred in the site. The wooden elements are generally used in intensively used gathering points where more action takes place and in silent, less visited parts metal seating elements are chosen to decrease vandalism. Each seating place occupies the waste basket in its content. Also, along the water's edge physical barriers such as low walls and chains are used for creating safety of the pedestrian esplanade.

Advertisement boards are placed in main intersection points without preventing people to pass through. The information boards serves vehicles and pedestrians in the entrances.

Group of telephone boxes are located in two points in site. They are placed in the shopping district and adjacent to the cafeteria near Illica creek in the north.

Many flower boxes in various forms, shapes and colours are used in defining different functions, providing colourful scene and enhancing the people.

The townscape elements are chosen to decrease the effect of vandalism in the site. The efficient use makes people orient themselves and benefit easily from what is supplied in the area.

6.15.8. Design Principles Related With The Water's Edge

The water's edge need special care and different treatment techniques for to increase the availability of the uses. Hard-edge and soft-edge treatment structures are used in different parts of the area.
The existing shoreline is primarily treated by walls except the part of the land where the ships are taken off the water for repairment activities. The plan also proposes the hard edge treatment against the hydrological factors such as the effect of waves (although they are not strong), polluted water and against the site’s being a landfill land to prevent the slopage effect on densely used sections. Shorewalls are used up to the north, to the proposed landfill recreation area due to the usage of the water’s edge by pedestrians and the cyclist for protection from the polluted water.

Soft-edge treatment is applied in the north where a passive recreation area takes place with the proposal of high dense shoreline vegetation and suitable landscaping in order to improve the visual quality in the site for the insiders and also for the outsiders.

6.16. The Overall Design Issues of The Site Plan

The site has a mixed-use facilities including cultural, recreational and commercial activities. The integration of the activity areas are provided in the design.

The design issues are determined as following:

- Commercial, cultural and recreative activities are located.
- Commercial activity area is composed of shops having a shopping square in the middle, adjacent to the pier.
- Cultural district involves an open air theater, art galleries, theater, exhibition center, handicraft ateliers, open exhibition and selling place, glasshouse, birdcage, aquarium and sea museum. The district is located in the north of the site away from direct circulation.

Aquarium houses different kinds of fish, dolphin performance pool and a small shark thank. Visitors will learn more about the marine life. Children will be encouraged for conservation of marine life by experiencing the aquarium and in addition, the birdcage and the glasshouse. The aquarium also includes research and office spaces, courses about marine life, gift and bookshops and a restaurant viewing the sea.
• The recreation is in two forms: passive and active. The meandering paths and the greenery along the water's edge, and a sport area, which is located near the entrance and the residences, are provided.

• The administration and management will be provided in the area. The control, maintenance and management of the quality of public spaces and infrastructure will be done by site administration.

• The entrances to the area are determined by the existing walkway and the busstop in the south-west direction and by the railway station in the north.

  Public transportation route, railway and the walkway along the sea and the pedestrian access are the determining factors of the entrance to the project site.

• The elevated entrance on the small hill from the railway station provides the surprising perception of the area and sitting opportunities on the man made stairs. It also serves as a viewing point.

• The small hill contains the treatment plant. The treated water discharged to the small creek. It also block off the scene of motor vehicles and the elevated highway from the area, and acts as a barrier against the cold winter wind flowing through the north direction. The aim is to block the northern vista and to open the southern vista.

• The water's edge of about 7 m. is used for pedestrian walking and cycling with tree planted and benches situated along for all age groups.

• Outside views are preferred as the sea is the main factor. So, the pedestrian paths in some parts are directed to the waterbody.

• The buildings are generally located in the north west direction, oriented to the sea and the linear form of the site, preventing the winter winds and holding the cooler summer breezes.

• Ramps and stairs, walkways are designed to give a dynamic character and easy perception of the area.

• The open space hierarchy creates definable and perceivable places.

• The restaurant tower and the enclosed promenade are the basic focal point of the area and also provide a viewing terrace.

• The playground is made usable by the handicapped children.
Intensive planting takes place, especially in north, in order to decrease the cold wind effects and the disturbing scene of the highway and the noise and, to increase the enhancement of the green from outside. A green buffer and the buffer hill is created with this aim.

The plants are chosen for the climatic variations and among the fast growing species. The northern part includes high trees followed by wider but low trees. Palm trees along the main paths, magnolia and acacia in some determined green areas where walking and sitting are provided.

The vehicular entrance is provided from the inner-city road on the north.

The parking lots have organic forms and located adjacent to the functions with trees and shrubs planted around.

No construction is preferred at underground level because of the high water table.

The paving elements will provide textures that orient people in the site.

Benches, lighting, information boards, dustbins, telephone boxes and toilets are provided along the pathways. Statues are located on the walkways again to orient and increase the perception of the area.
Figure 6.42. Concept Plan
Figure 6.43. The Site Plan
Figure 6.46. Visual Perception
CONCLUSION

Urban waterfronts are under regeneration in many waterfront cities and various kinds of redevelopment projects have been implemented from the time the ports' and industrial activity areas' repositioning. These projects were the results of social, environmental, cultural, economical changes in the community and the city. Also, increase in urban values such as historical preservation, environmental quality affected the revitalization of waterfront areas. Pollution problems and sensitivity to the environment are the important bases.

The technological changes and the increase in the variation of the transportation systems caused the relocation of the port activity areas leaving their sites obsolete and derelict, together with the economic recession in the city. The political decisions put the redevelopment of waterfronts in the center of the improvement of the innercity economy. Therefore, the political strategies had effects on the development and also the type.

The first projects were done for gaining financial revenues without considering the waterfronts' being natural resource and social activity areas. Additionally, as there is no importance given to planning and urban design studies or the wrong application strategies, due to the administration, the waterfront sites were redeveloped in isolation, not accessible by pedestrians having no visual poverty. The lacking human scale and public space concept and the image of isolation made the projects unsuccessful.

Consequently, the achieved conclusions are;

- The importance of planning and urban design in redevelopment projects.
- The local and central governments can deteriorate the waterfronts while having the aim of creating financially active areas with wrong development strategies.
- The necessity of the determination of the unique characteristics of each waterfront site.
- Whatever the kind of the redevelopment projects is the public space, accessibility, quality of the public spaces should be considered.

The redevelopment projects generally take place in urban centers due to the rapid change according to the demands on these sites. The recreational,
residential, cultural, environmental, working and mixed-use waterfront projects are applied. The mixed-use is for the provision of both financial and social values, for public attraction, for regeneration of life, for improving the image and increasing the public access to the water’s edge in the innercity areas. The cultural and historical waterfront developments are for tourist attraction with increased accessibility in the innercity. Recreational projects especially take place in the residential districts on waterfronts. The wetland areas near the city center are redeveloped as environmental waterfronts including picnics, walking, nature education. Therefore, it can be understood that public oriented activity areas are developed in the innercities. The increase in water and visual pollution have effects on this subject.

İzmir having residential districts surrounding the waterfront have potential for the developments of cultural and recreational activity areas. So, a mixed-use development is proposed as a case study in Alaybey, Karşıyaka.

The achieved conclusions, apart from the ones given before, in general can be given as following:

- Long time period is required for the regeneration process from conception to completion.
- A development plan and urban design studies should be done and applied for a high public quality in the site and for easy and rapid developments.
- A good programming is needed.
- Efficient and co-ordinated management and administration process is needed.
- Public and private partnership should be supplied for a developable project.
- Existing services and infrastructure should be used and improved for the feasibility.
- Public participation will encourage the success of the projects.
- A waterfront redevelopment project should provide social benefits and public access both by vehicles and walking and increase the image of the waterfront.
- Public space concept should be a must in the projects.
- Specific design guidelines should be developed for specific sites.
• The elements of the plan should be complementary to each other in terms of economic viability and urban design.
• Environmental, cultural, historical values should be reflected.
• The educational role should be achieved.
• The establishments to the outer parts will increase the public use.
• Not the buildings but the open spaces should be designed.

On the other hand, the project specific conclusions are as following:

Physical Conclusions:
--The difficulty in developing the urban waterfronts caused by the coastal act.
--The lack of knowledge and the difficulty in reaching the knowledge related with the waterfront land and the water.
--The wishes of the municipalities to attract people to the waterfront with people oriented activities on these sites.
--The ease of pedestrian and vehicular accessibility from every part of the city.
--The location of the compatible uses, recreation, commerce and culture, together make the site more active and liveable.
--The visual perception is provided with the construction of viewing tower, terrace and overlooks and, also with the view corridors.
--The location of the great buildings away from the water's edge for the pedestrians wondering along the waterfront in green areas.

Social Conclusions:
--All income, all age groups, are considered in the project.
--The increase in cultural values, public quality, environmental quality, the provision of air rights are achieved. Public transportation is improved.

Economical Conclusions:
--Although the initial investment will be higher, the functions will provide revenues in short time period after the development. The site itself will be economically sufficient and also provide economic benefits to the municipality.

Finally, the main aim has to be the increase of social benefits and the enhancement of the waterfront sites. Urban waterfronts, being the most dynamic district in the city has to be considered in many dimensions and designed with efficient and sufficient strategies.
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