Land Use Design Process

In large, sparsely settled areas where open countryside is a goal, the urban land use design is less important than land classification. Alternatively, a community may choose to do urban land use design without a preceding land classification plan. We present an approach that incorporates both a land classification plan and an urban land use design in a two-stage sequence. A land classification plan is done first, then urban land use design builds upon it, designing a more specific arrangement of land uses, community facilities, and infrastructure.

The Land Use Plan-Making Process

The process of designing an urban land use plan can be pictured as a sequence of five tasks. The tasks apply to each more specific land use type. The sequence is not rigid and there is feedback between them. Each task plays a special role in the design process.

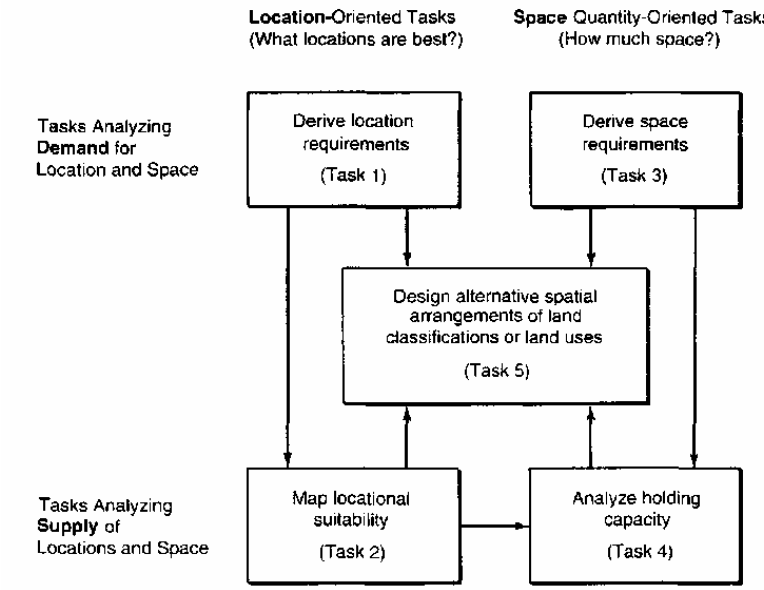


Figure 11-1. The Five Tasks for Land Use Design. The diagram conceptualizes the sequence of tasks and the search for balance among demand and supply, location requirements and space requirements, and analysis and synthesis.

Task 1. Derive location requirements for the land use sector of concern.

Develop principles and standards for locating the particular land use or facility and for the spatial relationships among uses. These principles and standards are based on goals and objectives and on locational preferences of households, firms, and other groups of land users.

Task 2. Map the suitability of lands for the particular use.

Using the design principles and standards developed in task 1, make maps showing the variation in suitability for locating the particular land use, or community facility. The spatial pattern of suitability will depend on the spatial pattern of environmental factors (e.g., slope, soil qualities, and drainage characteristics). Some locations will be suitable for more than one use.

Task 3. Estimate space requirements for the land user.

Estimate the amount of land needed to accommodate the future level of activity expected for the particular land use, or community facility.

Task 4. Analyze holding capacity of the suitable land supply.

Determine the capacity of suitable areas to accommodate land use activities and facilities. Holding capacities may be expressed in such terms as dwelling units, households,

number of employees, or simply as the number of hectares suitable for the particular landuse in different locations.

Task 5. Design alternative spatial arrangements of land uses.

Develop alternative spatial arrangements for future development and redevelopment activity, specific sectors of land use, community facilities, and open space. This is the synthesis step, the most creative of the five tasks.

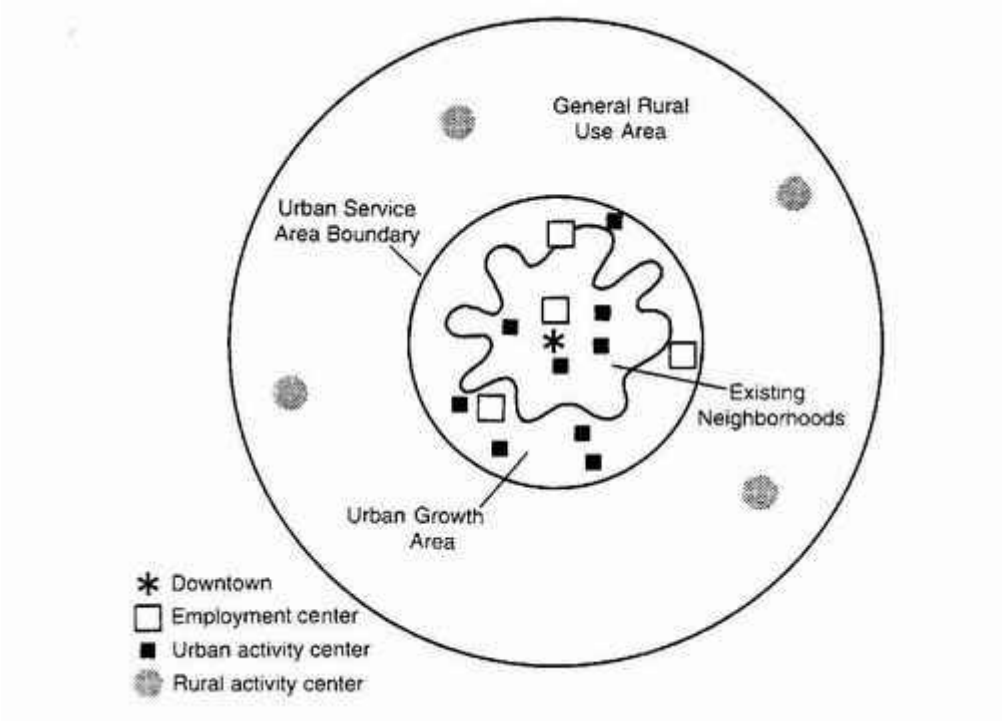
Task 1: Derive Location Requirements

General Principles

The idea of general principles for locational design apply to a land classification plan at Sub-Regional Scale and urban land use design at urban and metropolitan level. For land classification planning, the planner may derive locational principles for placing and delineating the urban transition area (where urban growth will be encouraged), the rural agricultural area, and the natural conservation areas.

For the urban land use design, we may identify locational principles for work areas, living areas, shopping-entertainment-cultural areas, community facilities, agricultural and forestry areas, and natural ecological systems. Principles may also be developed for particular land uses, for example, multifamily housing or manufacturing. For growth-management systems, we might identify conditions that define where specific land use controls will be used.

Locational Principles for the Land Classification Plan at Sub-Regional Scale(1/10000)



Functional Planning Areas Concept. The urban service area is divided into functional planning areas, such as employment centers, urban activity centers, existing neighborhoods, downtown area, and urban growth area.

Built-up areas will be designated where development has already occurred at urban density and full urban services exist. Developed areas may be pierced by conservation areas such as open space systems along streams(su yolları).

The urban transition areas should be located where urban services, including especially water and sewer, can be extended most easily and economically, where there are

good existing or easily extended roads and other transportation, and where topography is not extreme. The urban transition area should not be located in hazardous areas, on land prime for agricultural or forest use, in highly vulnerable natural systems, or land needed as catchment area for a water supply reservoir.

Rural community areas should be located apart from the major urban concentrations and centered on already existing rural communities that may have low levels of urban services and no public water and sewer system but are suited for moderate levels of low-density residential growth and limited commercial development because of their market attractiveness, accessibility to employment, and soils suitable for on-site wastewater treatment.

SUMMARY OF LAND CLASSIFICATION

Land Classes	Purpose	Characteristics	Services	Residential Population Density
Developed	To provide for continued intensive development and redevelopment of existing cities	Lands currently developed for urban purposes, with urban services available	Education health, water, sewer, recreation facilities, police, and fire protection.	Existing moderate to high density
Transition	To provide for future intensive urban development on lands that are most suitable and that are most likely to be scheduled for provision of necessary public utilities and services	Lands necessary to accommodate population growth for next ten-year period, lands generally free from severe physical limitations for development	Usual municipal or public services to be made available at the time of development or soon thereafter	Moderate to high density land uses
Rural communities	To provide for clustered mixed uses to help shopping, housing, employment, and public service needs within the surrounding region	Lands characterized by a cluster of residential and commercial land uses in rural areas	Limited services such as health, education, public security, etc. may have public water but no public sewer systems.	Clustered low density
Rural and agricultural areas	To provide for agriculture, forestry, mining, and various other low-intensity uses, including residences where urban services are not required; to encourage preservation of significant natural, scenic, historic, or other resources not otherwise classified	Lands with high potential for commercial agriculture, forestry, or mining; lands with limitations that make development costly and hazardous;	Private water wells and septic tanks. Other services such as primary health and education.	Low-density housing on large sites
Conservation	To provide for effective long-term management of tracts of land consistent with their significant, limited, or irreplaceable natural, recreational, or scenic resources essentially undisturbed by human occupancy	Lands that contain major wetlands, necessary wildlife habitats, watersheds and, large forests with limited access, lands providing significant recharge to groundwater, and lands with irreplaceable natural scenic or recreational resources	No services and limited access only	Essentially no residential development

The rural-agricultural-forestry areas should be located on lands with high productive potential for agriculture, timber production, or mining. Rural-nonagricultural areas might be lands where urban services would not be easily extended in the intermediate future but are not vital for agricultural production and do not contain environmental hazards or environmental features and processes vulnerable to urbanization.

Natural conservation areas should be located where natural, recreational, productive, or scenic resources exist; where natural processes are vulnerable to urbanization and active agriculture and forestry; and where hazards pose danger to urban development. They may

include water supply reservoirs and buffers adjacent to such bodies of water and the streams that feed them.

Arazi Kabiliyet Sınıfı	Etkili Toprak derinliği	Üst toprak dokusu	Geçirgenlik Alt toprak	Toprak verimlilik	Faydalı su kapasitesi	Eğim	Toprak Erozyonu derecesi	Islaklık	Taşkın tehlikesi
I. Çok iyi arazi çok çeşitli tarım ürünü, orman, mera, yaban hayatı için uygun	Çok derin	Orta	Orta derecede		Çok yüksek	Düz veya düze yakın	Yok	Yok	Yok arasıra
II. İyi arazi. Orta derecede koruma önlemleriyle emniyetli tarım yapılabilir, bazı sınırlayıcı faktörle re sahip orman, mera, yaban hayvanları yemi	Orta derecede derin	Orta derece de ağır	Orta derecede Yavaş- Orta derecede hızlı	Orta	yüksek	Hafif eğimli	Hafif	Az ıslak	Yok arasıra
III. Orta derecede iyi arazi. Bitki seçimini etkileyen şiddetli sınırlayıcı faktörlere sahip: Tarım ürünü mera, orman, mera, yaban hayvanları yemi	Orta derecede derin- Sığ		Orta derecede Yavaş- Orta derecede hızlı	Orta	Yüksek, Orta dereced e yüksek	Orta eğimli	Orta derecede	Orta derecede ıslak	Sık veya uzun süreli
IV. Oldukça iyi arazi bitki seçimini sınırlayan şiddetli faktörlere sahip çok dikkatli tedbirlere ihtiyaç dayar Tarım ürü- nü, orman, mera, yaban hayvanları yemi.	Sığ	orta	Yavaş Orta derecede - hızlı	düşük	Orta dereced e yüksek	Orta eğimli Fazla eğimli	Orta derecede, şiddetli	Orta derecede ıslak	Sık veya uzun süreli
V. Giderilmesi olanaksız bazı sınırlayıcı faktörler ve orman, mera, yaban hayvanları yemi üretimi için büyük ölçüde sınırlayıcı etkenler	Çok Sığ	Hafif Orta	Orta derecede Yavaş- çok hızlı	düşük	Orta dereced e yüksek, düşük	Fazla eğimli	şiddetli	ıslak	Çok sık
VI. Mer'a ve orman için genellikle iyi arazi, bitki gelişmesini sınırlayıcı bazı etkenlere sahip	Çok Sığ	Yavaş- çok hızlı	Yavaş- çok hızlı	Çok düşük	düşük	Fazla eğimli dik	Çok şiddetli	ıslak	
VII. Mer'a, orman ve yaban hayranları için şiddetli sınırlayıcı faktörlere sahip	Çok Sığ	Hafif ,Çok ağır	Çok Yavaş- çok hızlı	Çok düşük	Çok düşük	dik	Oyuntu erozyonu	Çok ıslak	
VIII. Ekonomik bitki üretimini önleyen sınırlayıcı faktörler. Rekreasyon ve yaban hayvanı için sınırlı	Çok Sığ-/ kayalık	Çok Hafif			Yok	Çok dik	Oyuntu erozyonu	Çok fazla ıslak	

Land Uses in England and Wales %: Total Land area 100%
Agriculture 79.3 Woodland 6.8 Urban area 10.7 Other Uses 3.2

Agricultural Land Use (% of total area)

	Arable land	Permanent Crop area	Irrıgated Land	Forestry Woodland
Bulgaria	40.0	1.9	7.2	33.4
Egypt	2.8	0.5	3.3	0.1
Greece	21.3	8.6	11.3	27.9
Hungary	49.8	2.2	2.3	19.9
Malaysia	5.5	17.6	1.1	58.7
Poland	46.0	1.1	0.3	30.6
Portugal	21.7	7.8	7.1	40.1
Romania	40.7	2.2	11.6	28.0
Tunisia	18.7	13.5	2.4	3.3
Turkey	31.4	3.3	5.8	13.3

Source: World Bank, World Development Indicators on CD-ROM, 2003.

RURAL LAND USE (%) İN TURKEY

	Ha	%
Agricultural Land	27 699 004	36
Forestry Woodland	23 468 463	31
Pasture,grasslands	21 745 690	29
Other uses	3 212 175	4
Total	76 125 332	100

Source T.C. Çevre Bakanlığı, 2000'li Yıllara Doğru Çevre, Ankara, 1991, s. 167-

WATER RESOURCES OF TURKEY

RESOURCES	No:	Surface, Lenght
Büyük doğal göller	200	500 000 ha
Baraj gölleri	75	150 000 ha
Ufak göller	700	15 000 ha
Nehirler ve çaylar	33	175715 km
Yeraltı suları		$94x10^9$ m^3
Yıllık ortalama yağış		652.5 mm

Source: T.C. Çevre Bakanlığı, Seçilmiş Çevre Konularında Türkiye Raporu, Ankara, 1991, s. I-3.

DISTRIBUTION OF WATER USES

Türkiye'nin yıllık toplam su potansiyeli 183.2 milyar m^3. Toplam su kullanımı 19.4 milyon m^3. Kullanılan suyun % 72.7'si yüzey kaynaklardan, gerisi yeraltı kaynaklarından sağlanıyor.

Main Water Uses	(%)
Irrigation	66
Residential and public uses	19.1
Endüstri ve soğutma.	14.9

Source: T.C. Çevre Bakanlığı, Seçilmiş Çevre Konularında Türkiye Raporu, 1991, s. I-4.

MİLLİ PARKLAR

İsim	Yer	Alan(Hektar)	Kuruluş Tarihi
Yozgat Çam	Yozgat	264	5.2.1958
Karatepe	Adana	7715	29.5.1958
Soğuksu	Ankara	1050	19.2.1959
Kuşcenneti	Balıkesir	64	27.7.1959
Uludağ	Bursa	11338	20.9.1961
Yedigöller	Zonguldak	2019	29.4.1965
Dilek Yarımad.	Aydın	10985	19.5.1066
Manisa Dağı	Manisa	5505	22.4.1968
Kızıldağ	Isparta	550	9.5.1969
Kovada Gölü	Isparta	6534	3.11.1970
Termesos	Antalya	6702	3.11.1970
Olimpos	Antalya	69800	16.3.1972
Munzur Vadisi	Tunceli	42000	21.12.1972

TURİZM MERKEZİ YERLER (33-2872 sayılı turizmi teşfik yasasına göre)

Ankara Kavaklıdere,Gaziosmanpaşa
Antalya Güney Antalya,Side,Konyaaltı,Kaleiçi,Belek,Lara,Serik-Çolaklı
Aydın Kuşadası-Çam,Kuşadası-Marina,Kuşadası-Kadınlar Denizi
Bolu Köroğlu Dağı
Bursa Kükürtlü Kaplıca
İstanbul Sultanahmet, Kuruçeşme, Çırağan Sarayı, Yalova Kaplıcası, Parkotel, Taşkışla, Boğaz-Okullar Bölgesi, Balta Limanı, Beykoz-Hünkar Kasrı, Sarayburnu, İstinye Tepeleri.
İzmir Çeşme-Altınkum,Selçuk-Pamucak,Özdere(Kesre Kıyısı)Doğanbey Kaplıcası, Alaçatı.
Muğla Köyceğiz,Sarıgerme,Marmaris-Marina, Ölüdeniz, Belceğiz, Kıdırak, Datça-Marina, Körmen(Gerence) Marina, Marmaris Adaağzı Marina, Fethiye-Marina
Muğla Milas Akbük, Fethiye Körfezi(Batı Kısmı), Bodrum Marina,, Bodrum Karaada, Serik-Çolaklı
Nevşehir Mustafapaşa

Kaynak: T.C.Çevre Bakanlığı, 1991.Turkey:National Report to UNCED 1992, Ankara, 1991, s.B52-53

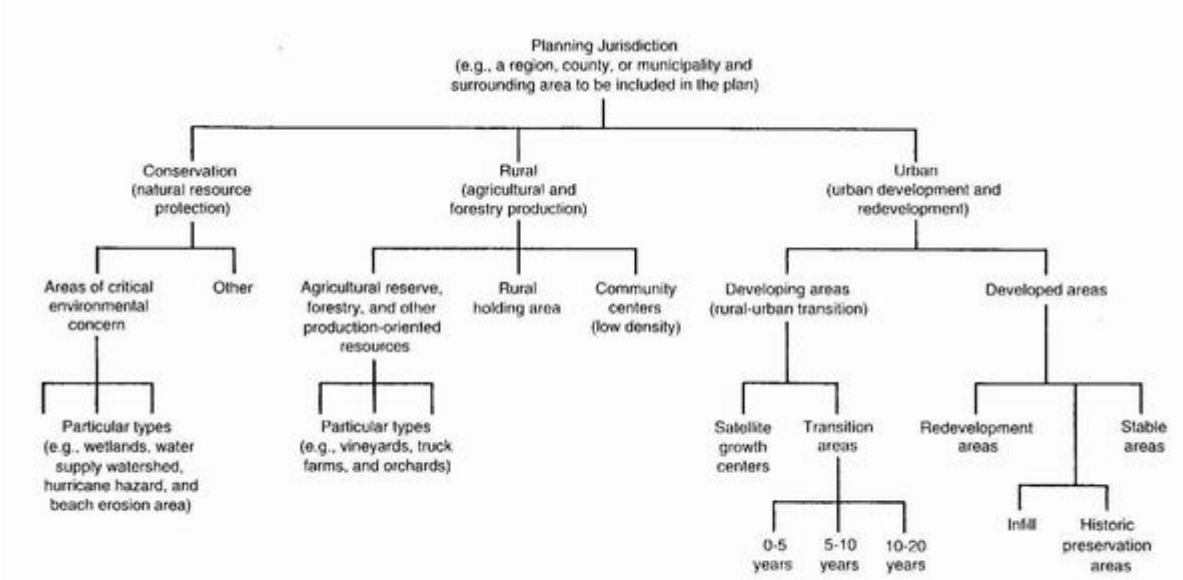
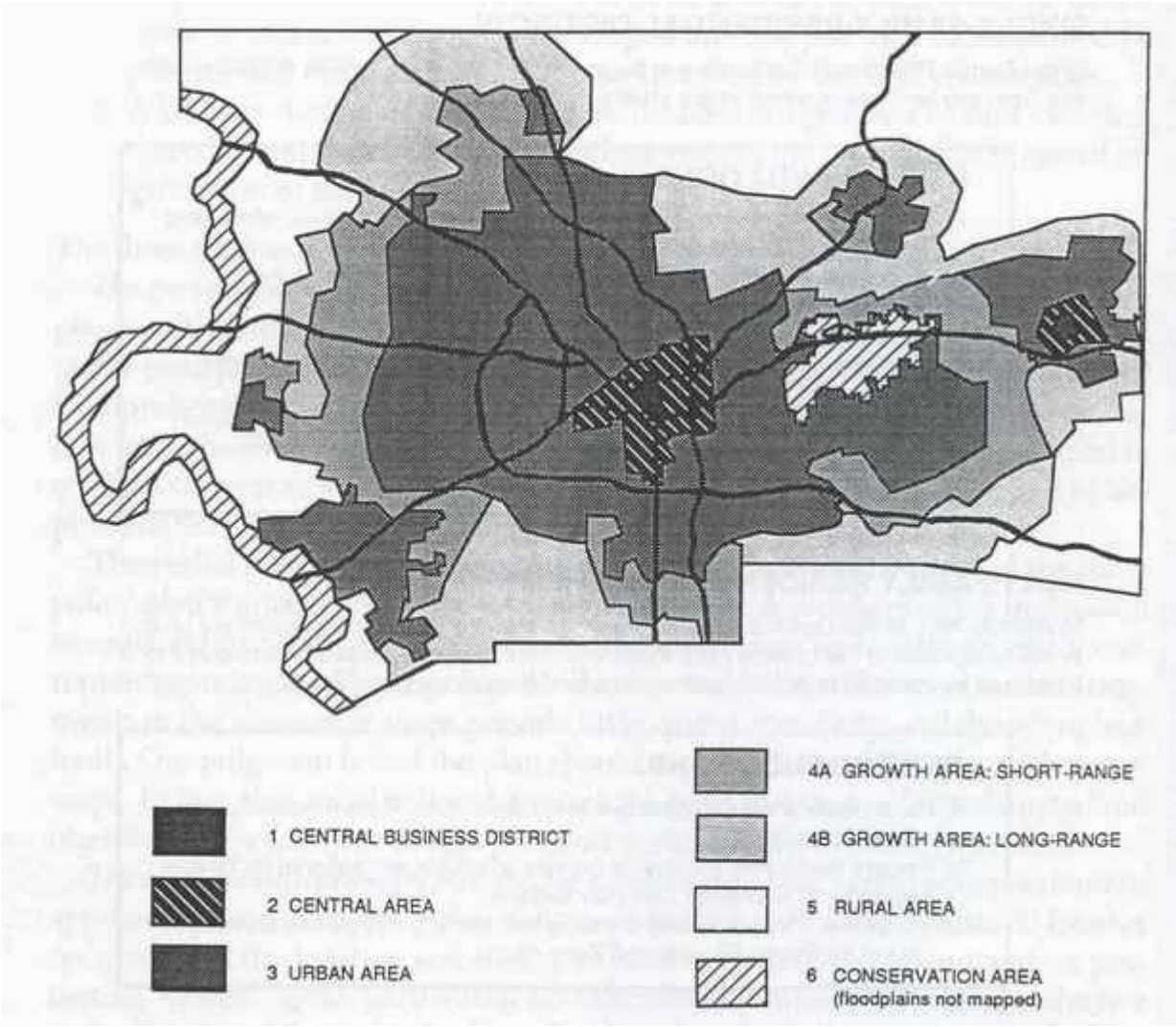


Figure 12-1. A Hierarchy of Land Classification Categories. Land classification schemes range from a simple division into three categories—conservation, rural, and urban—to more complex hierarchies, as shown by the options farther along the tree diagram.



LAND CLASSIFICATION PLAN

Location Principles for Urban Land Use Design

The general principles for the land use design might be addressed to functional areas of an urban complex: a.work areas, b.living areas, c.commercial-culture-recreation areas, d.community facility systems, and e.natural systems.

a. Work areas are those places devoted to employment in manufacturing, wholesale, trade, office, and service industries. They should be located in convenient proximity to living areas, where transit and thoroughfares can ensure easy access. They should also be convenient to other work areas as well as regional highway and public transport systems. They should be located away from vulnerable environmental systems and distributed to minimize concentrations of air pollution. Work areas should provide sites adequate in size, economical to develop for both the public and the private sector, and, except for heavy industry, attractively situated.

b. Living areas are the residential communities/neighborhoods and their accessory facilities such as neighborhood stores, local parks, and elementary schools. Living areas should be convenient to work, shopping, and leisure sites, as well as to public transport and thoroughfare routes, open spaces, and community facilities. They should be buffered from incompatible uses such as heavy industry and heavily traveled thoroughfares(anayollar). They should contain small-scale recreation, shopping, office, and educational facilities. There should be a wide range of densities, housing types, and locations to offer wide choice. They should be in locations that are economic to develop and serve.

c. Commercial areas, entertainment, and culture include major shopping and entertainment districts and such major educational, cultural, and recreational facilities as colleges, museums, concert halls, libraries, coliseums, and large, active recreation parks. These should be centrally located and convenient to living areas, served by public transit and the regional thoroughfare system. They should be of sufficient size and in locations to accommodate a wide range of goods and services activities and serve a variety of trade areas.

d. Community facilities include medical care facilities, police and fire stations, water and sewer plants, airports and train stations. Such facilities should be located to be convenient to specific user groups and on sites economic for construction and of sufficient size to accommodate future expansion.

The transportation system should be safe, energy-efficient, comfortable, convenient, and multimodal if the urban complex is large enough. It should relate to the interregional highway, rail, air, and water transportation systems and located to serve but not disrupt work areas, living areas, and shopping-entertainment-cultural centers. Corridors for utilities and pipelines should be provided that are related to processing and storage requirements and to customer locations. Sites should be reserved for liquid and solid waste treatment and storage. Finally, sources for future water supplies should be delineated and controlled to protect watersheds and groundwater.

e. Major parks and large open spaces should be reserved in locations that take advantage of, as well as protect, natural processes, vulnerable environments, and unusual natural features, and to provide a variety of recreation opportunities. Wooded areas and other open space should also be located to provide definition to neighborhoods and districts as well as to moderate climate, noise, light, and air pollution. They should also provide access to open space. Most development should be kept away from environmentally hazardous areas such as floodplains, *fault lines*, steep slopes susceptible to sliding, and unstable soils. Lower-density development using on-site sewage treatment should be prohibited from areas of unsuitable soils. Present and future water supply drainage basins should be restricted to development compatible with protection of water quality.

Location Standards versus Principles

Explicit "standards" can add meaning and usefulness to general principles. Thus "avoiding environmental hazards" might be stated more specifically as restricting development in the fifty-year floodplain. "Convenient proximity" or "easy access" is converted to a specific distance, measured in km, or travel time; for example, a half-km service area for a neighborhood park. "Adequate size" might be converted to a specific number of ha; for example, a minimum of 7 ha for a community park or 0,75 ha per 1000 population. Standards can be mapped more precisely than the principles and therefore will provide a clearer basis for suitability analysis and design. They can also be assessed more easily to determine whether policy is being followed.

Some standards are established by law. They typically take the form of minimum standards necessary to protect the public health, safety, and general welfare. Minimum standards are particularly useful for land use regulations. For plan-making, however, we use a "desirability" standard not a "minimum" standard. A desirability standard establishes a quality somewhat above the minimum—something practicable to achieve but below an ideal.

Although most planning standards for land classification and land use design planning specify location directly, performance standards, which specify impacts, are also relevant, especially for the development management program. In performance standards, the emphasis shifts from direct specification of location characteristics to the specification of desired results while leaving open the means to achieving them. Thus, the location principles might delineate certain locations satisfactory for a land use, provided that development meet certain conditions through siting, engineering, or lowering density. For example, hillsides might be deemed appropriate for development, provided that land use controls restrict the amounts of impervious surface.

Task 2: Map Location Suitability

In this task, we map the implications of the location principles and standards developed in task 1, based on the spatial pattern of the factors cited in the principles. That is, based on soils, slope, floodplains, fault lınes, accessibility to current or projected employment, shopping and leisure opportunities, accessibility to water and sewer lines, roads, and transit, and other data (and the way in which location principles refer to those data), we determine the relative suitability of locations for specific land use categories. The resulting maps show relative suitability of each unit of land in the planning jurisdiction for each type of land use, land classification, or community facility being specified in the land use plan.

A suitability map is not a design; it is only information for design. Suitability maps can only reflect existing facts and assumptions; they cannot reflect relationships among future land uses not yet allocated in the design. Also, the planner may only need to choose a small number of sites from a larger number of suitable sites, or he or she may need to determine which of several suitable uses for a given location will be encouraged there.

Table:Illustrative Time/ Distance Standards for Selected Uses in an Urban Area of 100,000 Population

Use or Facility	Land Use Design Standards
Employment centers	20-30 min.
Central business district	30-45 min.
Local shopping center	800m or 10 min.
Elementary school	800m
Junior high school	1600m or 20 min.
Senior high school	20-30 min.
Playgrounds and local parks	800m
Playfields and recreation centers	1600m or 20 min.
Public park or reservation	30-60 min.

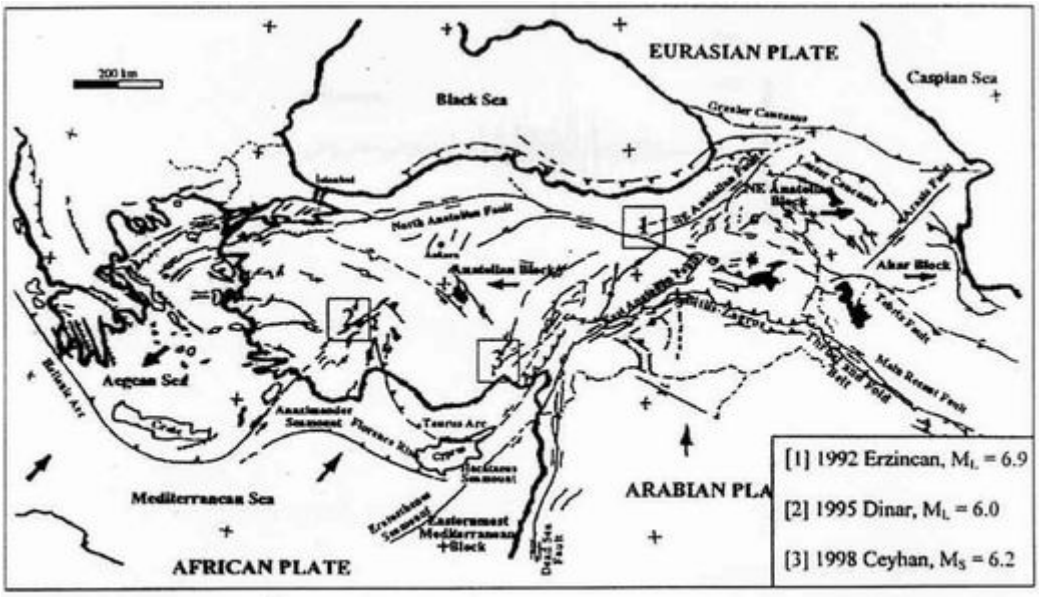
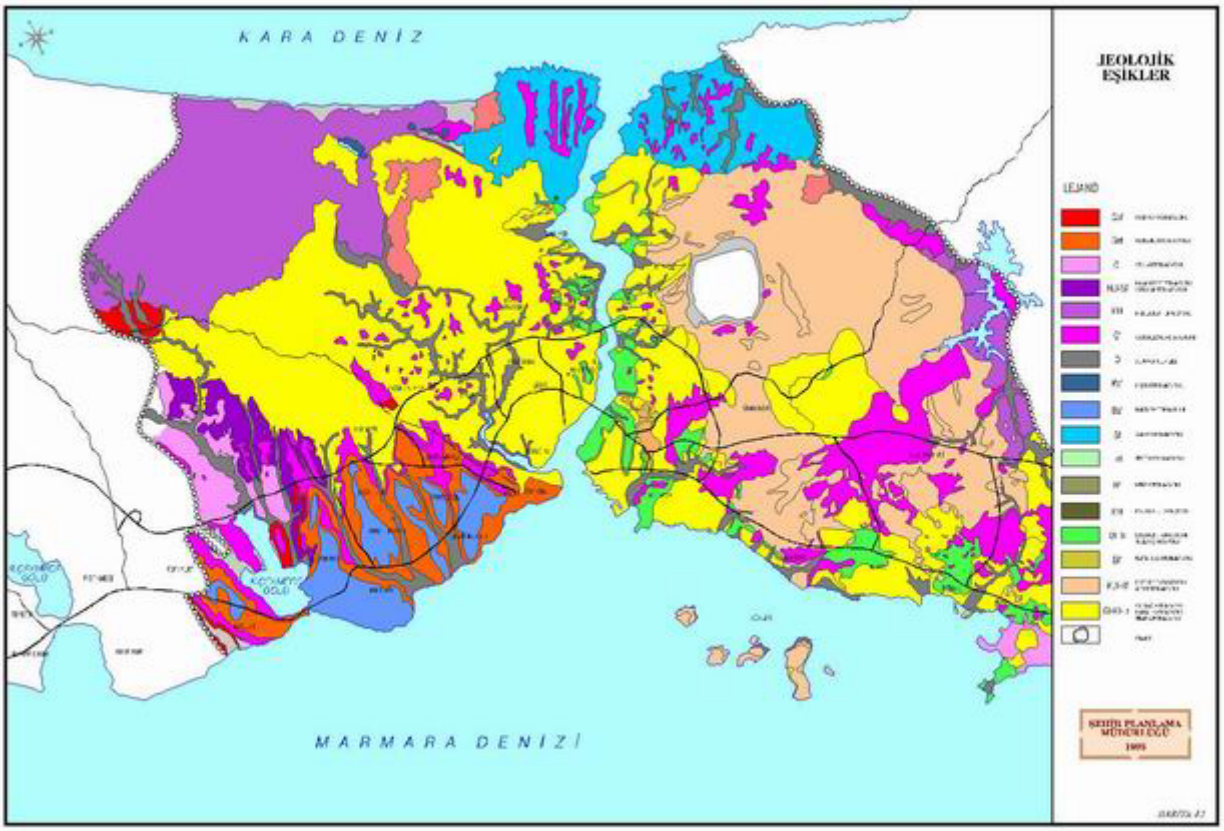


Figure 1. Seismic fault map of Turkey and epicenters of three recent earthquakes

Topraklarımızın yüzde 98'i deprem kuşağında olan ülkemiz, her an deprem riskiyle karşı karşıya. Türkiye'deki bölgeler, deprem risklerine göre derecelendirilmiş. Buna göre beş bölgeye ayrılmış olan ülkemiz topraklarının deprem haritası, Bayındırlık ve İskan Bakanlığı tarafından 18.04.1986 tarihinde hazırlanmış. 1:1.800.000 ölçekli bu haritaya göre deprem bölgeleri önceki haritalardan farklı olarak olasılık hesaplarına göre çizilen eşivme kontür haritası esas alınarak hesaplanmıştır.
Birinci ve ikinci derece deprem bölgeleri, büyük deprem riskinin yüksek, dolayısıyla hasarın önemli boyutlarda olabileceği bölgelerdir. Bu bölgelerde, deprem riskiyle yaşamaya alışık olmak ve her an bir depreme hazırlıklı olmak gerekiyor. Üçüncü ve dördüncü derece deprem bölgelerinde ise bu risk daha az. Dördüncü derece deprem bölgelerinde deprem hesabı yapmak dahi zorunlu değil. Deprem Bölgeleri Haritası, Afet Bölgelerinde Yapılacak Yapılar Hakkındaki Yönetmelik'le tamamlanıyor. Bu yönetmeliğe göre deprem bölgelerinde hesap edilen ivme değerleri 1. derece için 0.4 g, 2. derece için 0.3 g, 4. derece için 0.1 g olarak alınmalıdır.



Task 3: Estimate Space Requirements

Having established in tasks 1 and 2 where land using activities and facilities should be located, we now shift to estimating how much land will be required. The bases for space requirements are projections of population and employment, studies of the densities of present and projected development, and policies about the future character of development (e.g., the mix of housing types and densities).

URBAN FACILITIES DISTRIBUTION
according to the Law of Reconstruction No:3194
(3194 sayılı imar Kanunu geregince donatim tesislerinin buyukliikleri)

URBAN FACILITIES	0-5000 population (m2/per)	5000-15000 population (m2/ per)	15000-45000 population (m2/ per)
Nursery (Anaokulu)	0.7	0.7	0.7
Primary School	1.80	1.80	1.80
High School	2.00	2.00	2.00
Commercial (retail)	1.10	1.20	1.30
Health	1.00	1.00	1.20
Sports and Parks	7.00	7.00	7.00
Socio-Cultural Areas	0.30	0.30	0.50
Administration	2.20	2.20	3.00
Technical Infrastructure. (excluding roads,	0.10	0.20	1.00

Space requirements are usually developed in several stages. In the first stage (the one accompanying the land classification plan and early stages of the urban land use design), we

aim only for general approximations of the number of hectares required for general land use categories (e.g., urban transition or residential development but not specifically multifamily versus single family residential needs). Later, in estimating space requirements for specific land use sector for the urban land use design, those initial estimates are reexamined, refined, and adjusted to reflect the specific character of desired development, consumer preferences, and suitability of the locations for various densities. For example, housing or industry located near the central business district might be allotted less space (higher density) than the same activity on the urban fringe.

URBAN FACILITIES DISTRIBUTION
Regulation of Reconstruction for the Greater ISTANBUL Municipality
(Istanbul Imar Yonetmeligi'ne Gore Standartlar)

DONATIM	0-5000 Population (m2/pers)	5000-15000 Population (m2/ per)	15000-45000 Population (m2/ per)
Nursery (Anaokulu)	0.3	0.3	0.3
Primary School	-	1.0	1.0
High School	-	-	0.5
Commercial (retail)	0.5	0.5	0.5
Health	0.1	0.15	0.45
Parks	7.0	L 7.0	7.0
Sports	-	2.0	1.0
Cultural Facilities	0.3	0.3	0.5
Administration	-	0.1	0.1
Technical Infrastructure. (excluding roads, parkings)	10.5	10.5	8.4

GENERAL LAND USE DİSTRİBUTİON for cities of 100000+ Population

Land Use	% of Total
Residential	40-50
Work places(industry+offices)	10-15
CBD +recreation+ parks	10-15
Community Facilities (educational,medical, administration)	10-15
Transportation	20-35
Large Green Areas (Conservation, critical areas of land & water	-

Source: Keeble . Landuse Planning

Task 4: Analyze Holding Capacity

The available land supply includes land in nonurban uses (e.g., agricultural uses), vacant land, and developed land substracted for clearance or substantial rehabilitation. The planning jurisdiction(yasal planlama kurulusu) is typically divided into planning districts, using neighborhoods, census tracts, or traffic analysis zones. The number of hectares available is summarized for each planning district at each of several levels of suitability. Levels of suitability pertain to a particular land using activity that might locate in the planning district. Based on the standards for space consumption developed in task 3, the "suitable" hectares can be converted to an equivalent number of dwellings, population, or number of employees. Alternatively, the conversion may wait until task 5, when holding capacity is balanced against demand for space.

The outputs of task 4 are maps and tables indicating the holding capacities of each

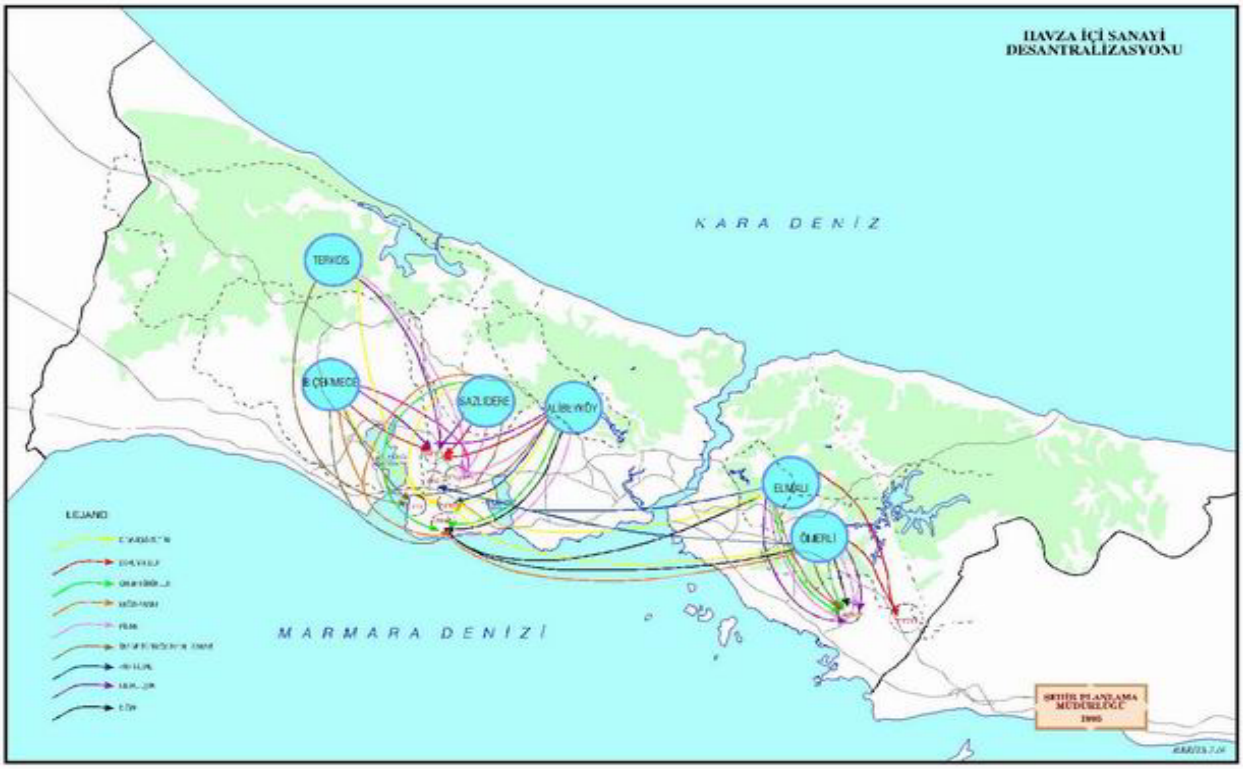
planning district or suitability polygon for different uses potentially located there. The information may be summarized for the planning area as a whole and for each of several subdivisions of that total area (e.g., built-up area and fringe area, or north, east, south, and west sectors). This task depends greatly on the vacant land analyses discussed in earlier chapters and on the suitability analyses.

Tablo 3.73. Planlı Sanayi Alanlarının Analizi (Batı Yakası)

BATI YAKASI					
BÖLGELER	SANAYİ ALANI	DOLU ALAN	%	BOŞ ALAN	%
BÜYÜKÇEKMECE	205	95,5	46,6	109,4	53,4
ESENYURT	156	30,8	19,7	125,2	80,3
FİRUZKÖY	101	62	61,3	39	38,7
AVCILAR	274	91	33,2	183	66,8
KIRAÇ	175	4,8	2,7	170,2	97,3
İKİTELLİ	765			765	100
HOŞDERE	825	40,3	4,9	784,7	95,1
ORTAKÖY	400	5	1,2	395	98,8
TOPLAM	2901	329,5	11,4	2571,5	88,6

Tablo 3.74. Planlı Sanayi Alanlarının Analizi (Doğu Yakası)

DOĞU YAKASI					
BÖLGELER	SANAYİ ALANI	DOLU ALAN	%	BOŞ ALAN	%
KURKÖY	555	125	22,5	430	77,5
TEPEÖREN	594	310	52,2	284	47,8
TUZLA ODSB	642	562	87,5	80	12,5
TOPLAM	1791	997	55,7	794	44,3
İSTANBUL TOPLAM	4692	1326,5	28,3	3365,5	71,7

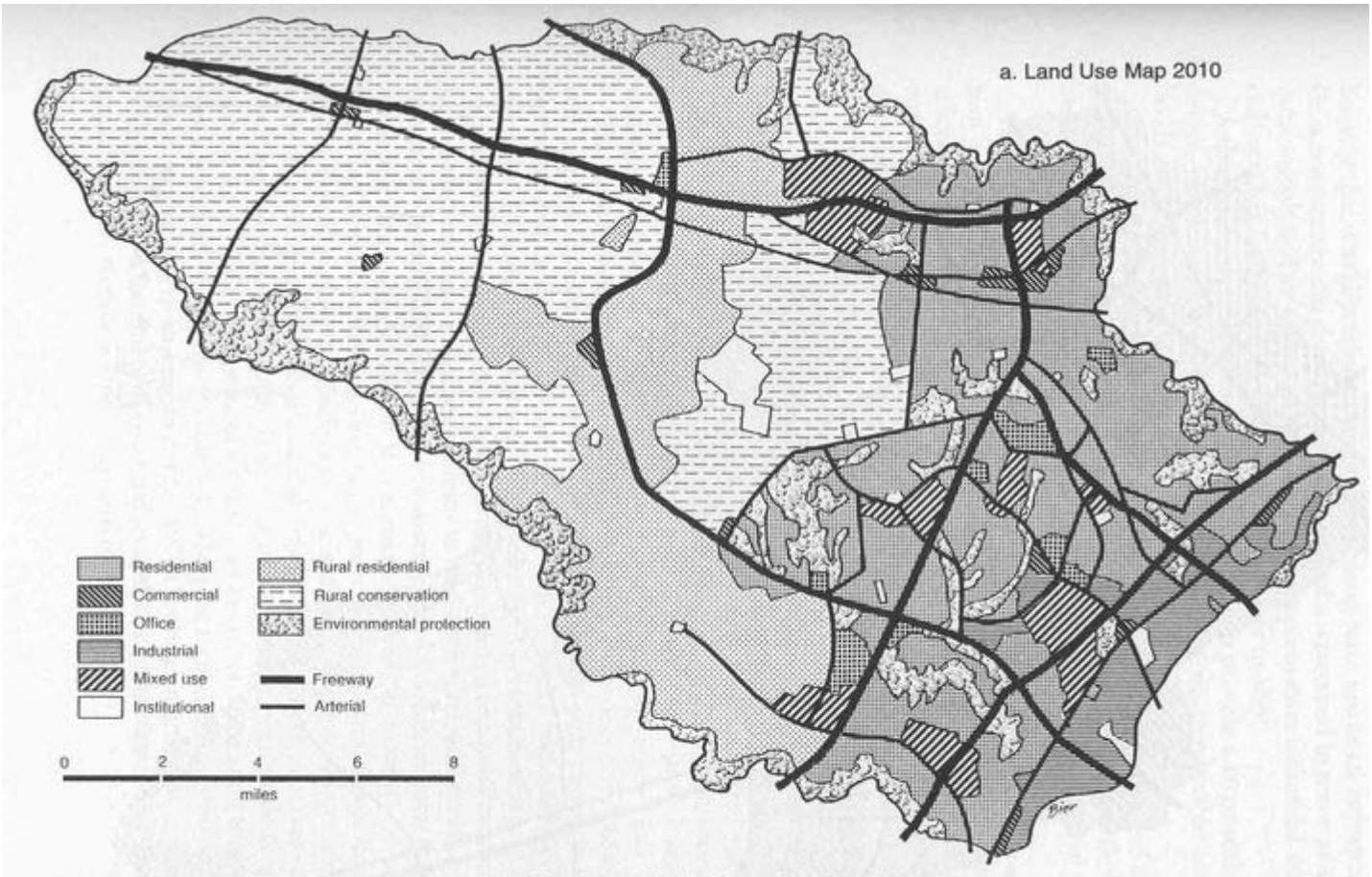


Task 5: Design the Land Use Pattern

The previous four tasks are analytic. The fifth task requires inventing alternative land use patterns to accommodate the desired future population and employment while satisfying location principles, implications of suitability maps, space requirements, and holding capacities. Typically, the planner explores numerous schemes on tracing paper. There is no systematic way that we can suggest to do that.

Design ideas are tested by comparing the hectares required for a use at a particular highly suitable location against the holding capacity of land at that location. As land is allocated to a use, it must be deducted from the holding capacity available for other uses. A sort of spatial accounting system is maintained on overlay maps and tables that do that. If deficiencies in land supply are encountered, some of the land allocated earlier in the design process, but suitable for a use being allocated later, might be reallocated to the new land use.

Shortages of suitable land might cause the planner to relax the standard of suitability, raise future densities, expand the planning area, or reduce the levels of population, employment, and other activity planned for the area. Generally, however, the limits of the planning study area are drawn sufficiently large initially so the balancing operation shows a surplus rather than a shortage of suitable land. Such a surplus is expected and is not a cause for reducing the planning area unless it taxes the data management capacities of the planning agency or exceeds the political reach of the government for whom the planning is being done.



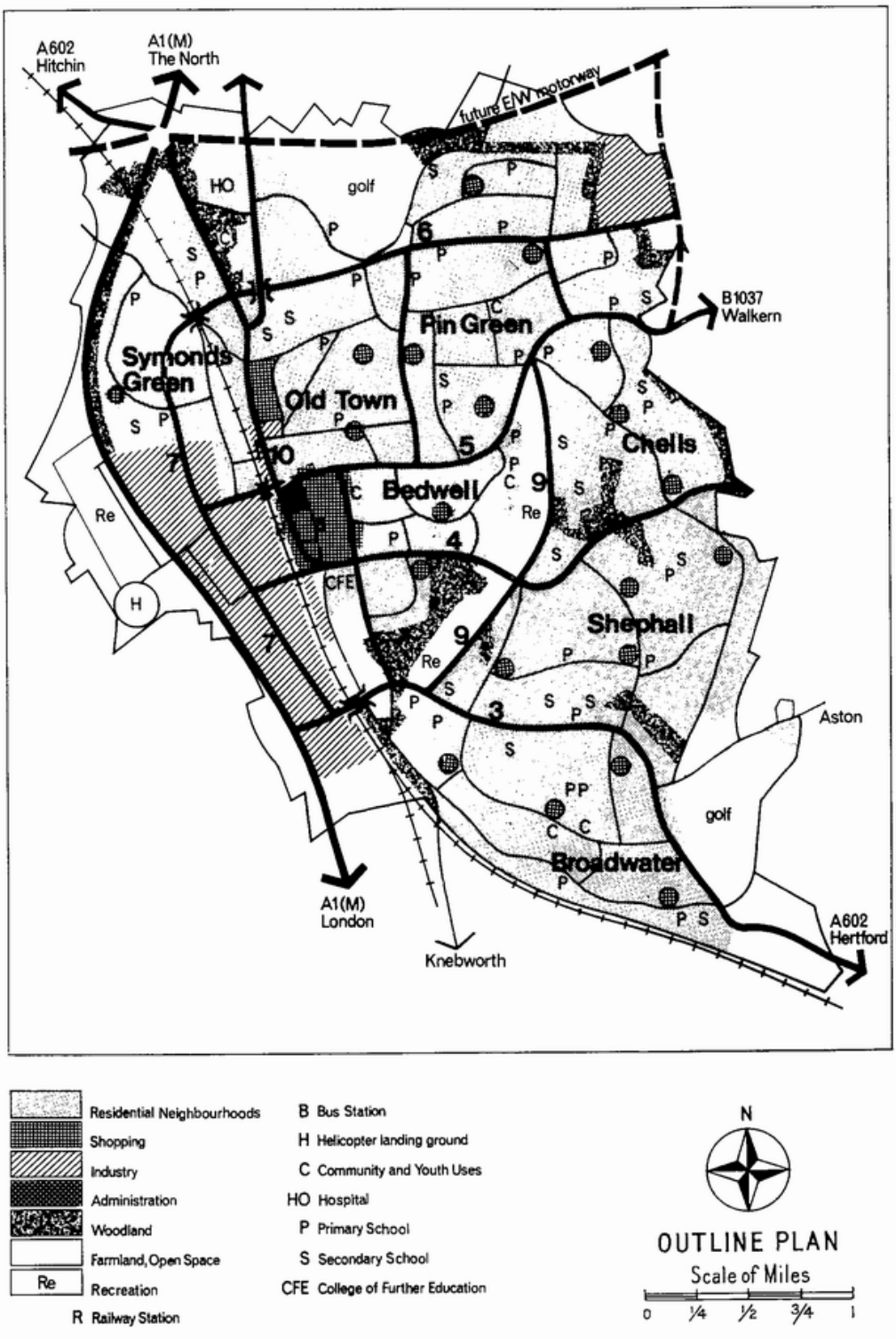


Figure 14.1 Stevenage – outline plan

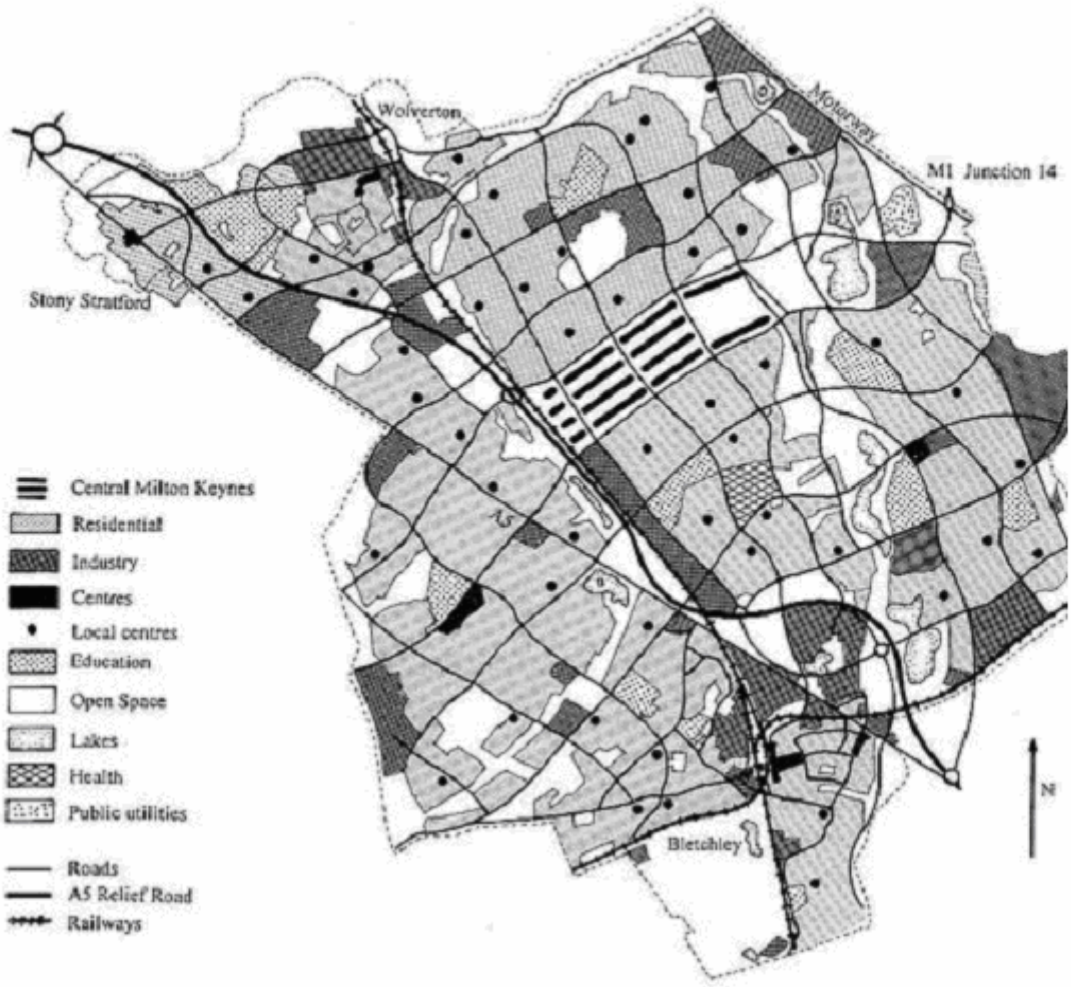
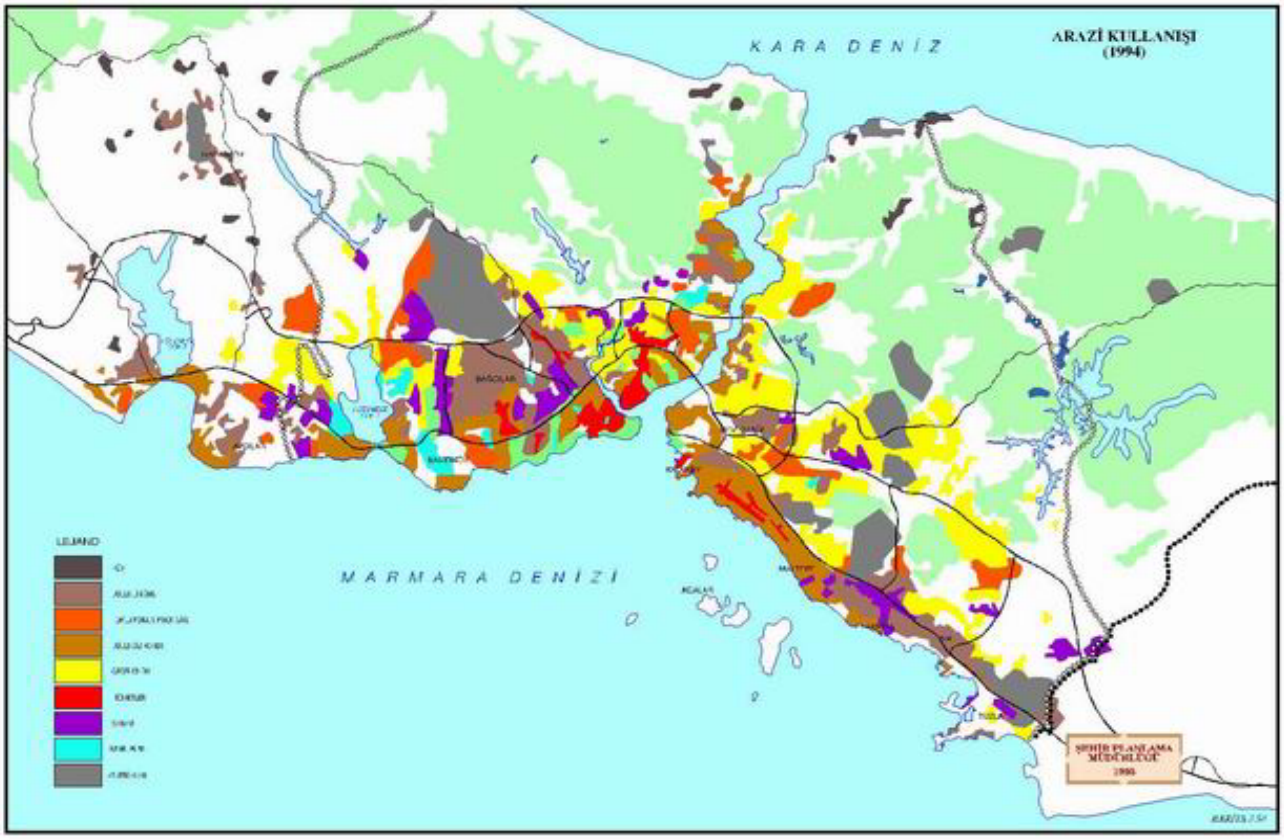
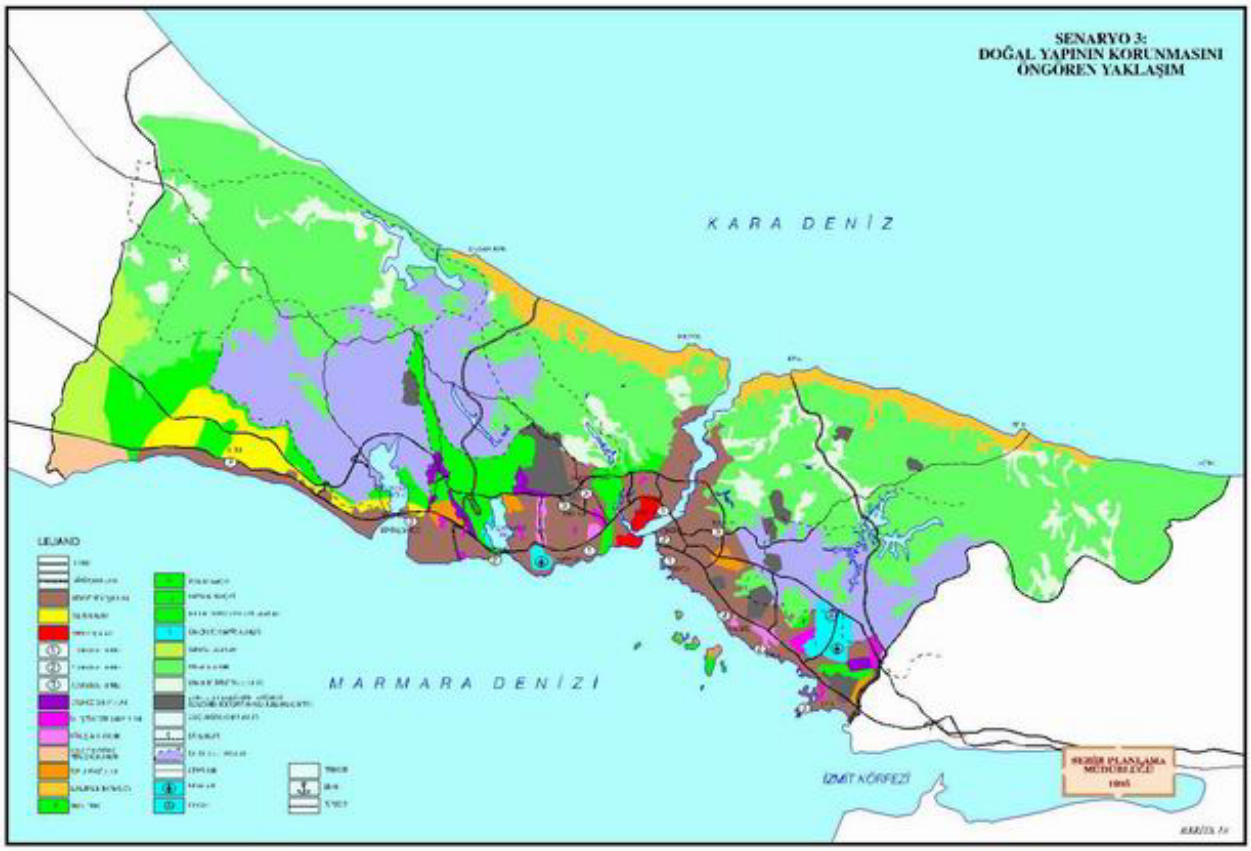


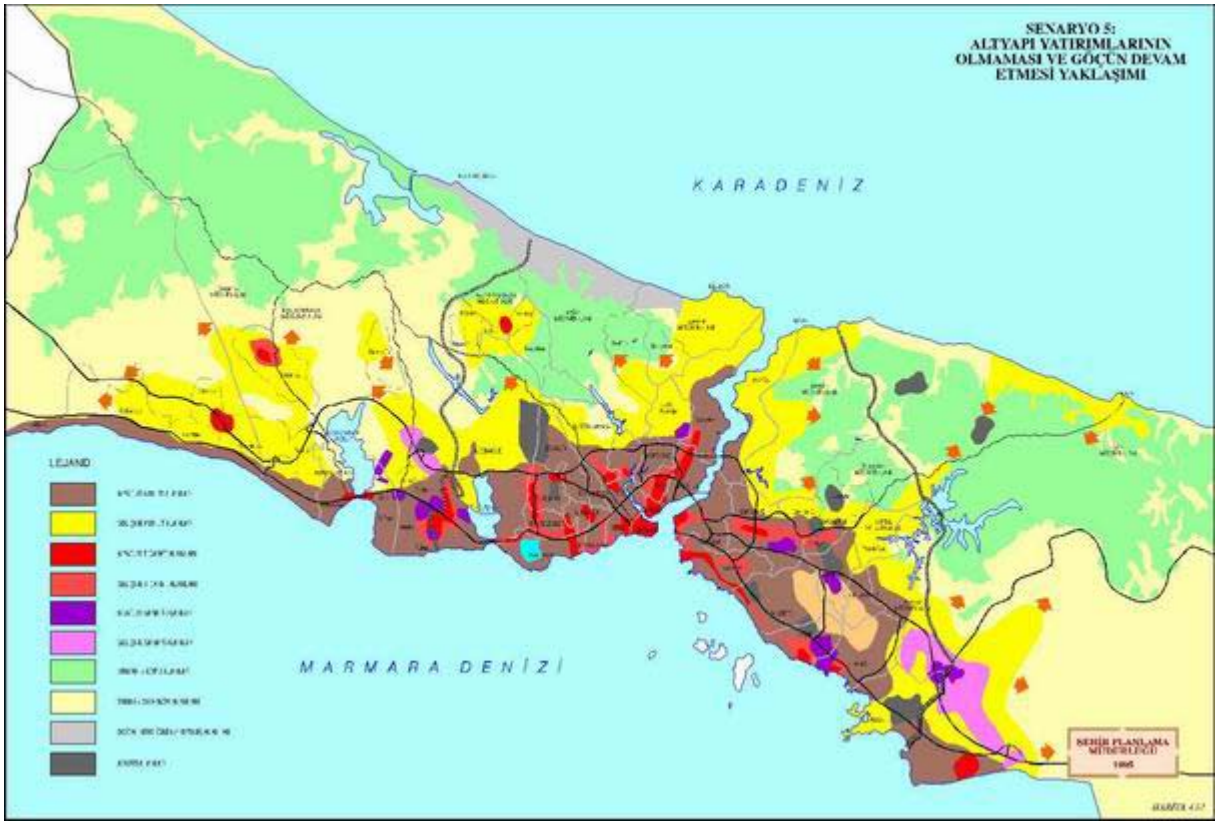
Figure 5.38 Milton Keynes (Llewellyn-Davies, 1970)

Qualities of the plan

1. Opportunity and freedom of choice
2. Easy movement and access, and good comm nications
3. Balance and variety
4. An attractive city
5. Public awareness and participation
6. Efficient and imaginative use of resources.


KARA DENİZ
ARAZİ KULLANIŞI
(1994)
MARMARA DENİZİ
LEJAND


SENARYO 3:
DOĞAL YAPININ KORUNMASINI
ÖNGÖREN YAKLAŞIM
KARA DENİZ
MARMARA DENİZİ
İZMİT KÖRFEZİ
LEJAND



TABLO 1: TÜRKİYE'NİN NÜFUSU

Years	Population	Urban population %	Rural Population%
1927	13 648 000	24.2	75.8
1935	16 158 000	23.5	76.5
1940	17 821 000	24.4	75.6
1945	18 790 000	24.9	75.1
1950	20 947 000	25.0	75.0
1955	24 065 000	28.8	71.2
1960	27 755 000	31.9	68.1
1965	31 392 000	34.4	65.6
1970	35 605 000	38.5	61.5
1975	40 348 000	31.8	68.2
1980	44 737 000	43.9	56.1
1985	50 664 000	53.0	47.0
1990	57 976 000	61.2	38.8
2002	69 876 000	66.6	33.4

Kaynak: DEİK Reports 2003, s.22-23