TRANSFER OF DEVELOPMENT RIGHTS AS A PLANNING TOOL IN THE CASE OF HISTORICAL SITES IN TURKEY

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ABSTRACT

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TDR is a land use and management provision which has been exploited at various contexts since late 19th century in many countries particularly in the USA. Historically the European and the Turkish systems of planning have however remained alien to this technique.

The position for its adaptation has not yet been widely recognized, eventhough no legal impediment seems to exist in this country for its implementation, provided the technical requirements are fulfilled.

TDR may be of particular use in contexts where resources to achieve specific physical objectives are scarce. Typical are the cases of protection of natural and historical assets in Turkiye. For this reason, the potential exploitation of TDR is inquired here in a typical case study of historical conservation, emphasizing how this procedure could be supplemented through TDR as a planning tool, as well as, the calculation of the volume of financial resources required, together with GIS methods in representation, accounting and plan making. There may be alternative methods of modelling the physical

and finantial arrangements through GIS methods. Yet benefits of such practice prove commendable implementations.

As our accounting and surveys indicated, sufficient funds could be raised for wide-scale restoration operations and that incentives could be maintaned for at least 80% of the owners to cooperate.

Key words: Development rights, transfer of development rights, planning system, planning techniques, conservation.

ÖZ

İMAR HAKLARI AKTARIMI: TÜRKİYE'DE TARİHSEL ALANLARDA BİR PLANLAMA ARACI OLARAK

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İmar Hakları Aktarımı (İHA) 19 yy. sonlarından beri arazi kullanımı ve yönetiminde çeşitlii şekillerde başta ABD olmak üzere bir çok ülkede kullanılmaktadır. Ancak, Türk ve Avrupa planlama sistemleri bu tekniğe tarihsel süreçte yabancı kalmışlardır. Teknik gereksinmeler karşılandığı takdirde, İHA'nin bu ülkelerde uygulanmasını engelleyen yasal bir çerçeve bulunmamaktadır.

İHA, hedeflenen bazı fiziksel sonuçların elde edilmesi için gerekli görünen kaynakların özellikle kıt olduğu durumlarda kullanılabilir. Türkiye özelinde, doğal ve tarihi alanların korunması tipik örnek durumlar oluşturmaktadır. Bu nedenden dolayı, İHA'yi bir planlama aracı olarak kullanmak yanısıra, ihtiyaç duyulan finans kaynaklarının hacminin hesaplanmasında, süreç, mali kısıtlar ve plan yapımı gibi konularda GIS

yönteminin nasıl kullanılacağına önem vererek, tarihi alanların korunması örneğinde İHA uygulanmaktadır. GIS methoduyla birlikte birçok alternatif fiziksel ve finansal uygulama modelleri geliştirilebilir.

Bizim hesaplamalarımız ve araştırmalarımız sonucunda, büyük ölçekli restorasyon uygulamaları için yeterli kaynağın sağlanabileceği ve bu teşviğin % 80 oranında taşınmaz sahiplerinin katılımıyla gerçekleşebileceği ortaya çıkarılmıştır.

Anahtar kelimeler: İmar Hakları, İmar Hakları Transferi, Planlama sistemi, Planlama Teknikleri, Koruma.

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INTRODUCTION: THE SCOPE AND METHOD OF STUDY

Transfer of Development Rights Technique (TDR) is a planning tool to provide desired land use patterns within a region. The technique depends on the manipulation of bundle of rights on each property and it shifts the future development potential from one property to another by taking the difference between existing use of a parcel and its potential use. It has been used successfully for many years in the United States of America to preserve landmarks and historical areas, open space and farmlands, fragile ecological resources, to encourage the construction of moderate and low income housing, and to avoid 'windfalls and wipeouts syndrome'.

In this program, the unused development rights which have come out by property restrictions, are transferred to another piece of property. Therefore, sales of rights could compensate landowners for the loss of restrictions on development on their land. The technique is considered as a solution of a variety land of use problems including finance problems since it creates funds from one piece of property to another.

In Türkiye, the Law of Urban Development provides several tools in city planning, some used successfully, while the others are not. Since 1980's there have been new developments in the economic system. Conditions are changing very rapidly in each sector. However, the rate of development of the Turkish Planning System is not the same with these developments in the economic and

social structure most of the problems of the planning institution are based on the political system and the finance system.

Political developments in Türkiye have brought greater reliance on the free market system with a decreasing intervention of government to markets. The efforts to enter the European Economic Community are intensified, new rules and regulations are determined to enter the European Economic market. Privatization is supported by governments. Public Economic Enterprise (KIT) are to be privatized to achieve a more liberal economic system. The capital markets are groving up as the time goes and the financial developments take place in the world. In this case, these developments inevitably require new planning systems and new planning tools to achieve positive land use goals. The issued papers which are of financial value, related to the properties could be implemented in the current social and economical environment. However, the present system of urban and rural planning could not provide a healthy development of cities, since most of the urban and rural lands and properties are in private hands.

Therefore, the possibility of TDR as a new planning tool in the Turkish planning system is examined here, since it has a new point of view, and presents a new approach in the controlling of urbanization and to the problems of financing desired patterns of development.

The method of examination starts with the developments of British land use and economic system in Chapter 2. The economic restructuring of England in the Thatcher period required new planning systems and tools with the exercise that the present system did not respond the problems of urban and rural areas. Privatization was held in England by decreasing the rate of government intervention in economic system. Therefore, in order to solve the problems of urban and rural areas, the British planners proposed market-led planning tools

which had the characteristics of free market systems and were accepted by the British government.

In this point of view, USA have many experiences to align the planning system with the present social and economical system of the country. Even thuogh the planning system of the USA have different basis, concepts and tools for each problem areas. The adoptation of planning system to the present environment have the most significant characteristic of the planning thoughts of the country.

In the third chapter of the thesis, the transfer of development rights technique is explained in detail, since it is a new concept for Turkish planning system. Explanations and the economic analyses of the system are given depending on several author's points of view.

In order to show the application process of the TDR technique, evidences from United States of America are given in the third chapter. These implementations are classified and discussed in detail, because the technique has not a unique solution to the problems of urban and rural areas. According to the characteristics of problem areas, the application rules and procedures of the TDR technique vary. Therefore, several implementations of the program from the USA are taken into consideration.

In the 4th chapter, restrictions of property rights and the selected laws from the planning regulations of Türkiye is explained to make clear the legal constraints to the TDR technique. Then, a case study is chosen to show how procedures of a TDR program might work in a historical site area a case we consider typical to the many physical planning problems of this country, with a new technical software -Geographical Information Systems- GIS.

The main aim of this thesis is to examine the possibility of implementation of a new planning tool for Turkish planning system and facilitated by new technology.

CHAPTER 2

CHANGING CONTEXT AND TECHNICAL INFRASTRUCTURE OF PLANNING

The planning process of England and USA have changed and adapted very rapidly to social and economic structures of the countries. The planning requirements of urban and rural problems have a largest importance in designing planning system. Here, the British and American planning systems are analyzed in order to show the ability of adaptability of planning systems in both countries.

2.1. DEVELOPMENT RIGHTS AND PLANNING TOOLS IN ENGLAND

BEFORE 1970

Planning in England is assumed to have started in 1909 by the law of Housing and Planning. The competence of preparing city plans and development share was given to local authorities by this law. Until 1932 many laws about housing, city planning and local authorities have come into affect and in 1932 Conservative Government aimed with the law of Urban and Rural Planning to control large urban and rural areas. These arrangements in planning were supported by the concepts of planning and planning acts of the volunteer associations as exemplified in the Garden Cities by Howard and Patrick Geddes.

For the first time in England, a wider framework was introduced to British Planning system by Town and Country Planning act of 1947. County Council and County Boroughs are the planning authorities here which would carry out research and decide for urban and rural activities. According to the main principles of 1947 act an official plan would determine of the location and timing of developments parallel to needs and control the urban and rural developments. This control mechanism had functioned effectively but the plans could not be approved until 1960 which created ineffective planning process because the plans that was prepared in 1947 was old and ineffective statically and technically.

In 1964, Planning Advisory Group was established to research for delays in planning and to develop a new city planning proposal. Town and County Planning Act of 1968 was thus introduced as a new planning mechanism. In this act planning system was consisted of two steps: The one was county planning by county council which would prepare a structure plan. The plan would have consisted of general principles of urban development, conservation, transportation, residential and recreation policies that would have been approved by the Ministry. The other was District Council who was responsible for local planning and who would prepare the local plans without any Ministerial approval. However, the control of central authority on planning decisions was continued.

CRISIS IN PLANNING (1970-1980)

Planning strategies and purposes did not function effectively in the middle of 1970's. Public opinion was against planning which proved inadequate to prevent unwilling developments of urban and rural areas. Planning was criticized also by several organized voluntary groups and by many conservation associations because of the unfinished highway projects, slam clearance projects, city center and council housing projects. The failure of planning was

caused by exaggerated process of collecting information and claims of excessive specialization on planning. Moreover, planning and planners were under the control of direct government bureaucracy causing inefficiencies.

Planners concentrated on development and processes of real estate markets to protect their professional statutes. They wanted to be free from the present, political systems, however, this policy make the planners to be weak in planning process. After that planners had chosen the methods of participation which could enable agreement with public. However, participation policy had not function effectively because planning was criticized by middle income group landowners who was in the opposite of highways, airports and residential developments on green-belts.

Moreover, the undetermined economic situation of country had also effected the planning process. In 1973 there was an oil crisis and economic stability which causes to annul city and development plans and projects. Especially, there was a crisis in industrial production which created the bad condition for industrial cities, like West-Midland, Birmingham and Sheffield.

The process of economic and industrial restructuring effected some local areas and that's way inequalities among cities was the largest by this time. The concept of 'localities' was developed because of this restructuring process. Naturally, there were different areas in the country and these required different planning tools and implementations. Planning has been supported by two basic effect:

- The agreement on necessity of change and,

- Intervention on economic development which causes to change.

Therefore, new planning tools and implementation process was required by public. The way would be to find new, different tools to different areas according to locality principle.

2.1.2. TYPOLOGY OF PLANNING STYLES IN THE THATCHER PERIOD

Planning process and principles were changed in Thatcher period. Market mechanism principles were said to be important than planning and its control mechanisms. These were the results of policy that is opposite to planning.

In this period:

a) Planning controls were decreased

b) Enterprise Zones and Simplified Planning Zones were determined

c) The competence and power of planning were given to Urban Development Corporations.

In the period of Thatcher, planning was made a passive institution with the idea of 'New Right'. Because the concept of new right is the opposite of public-planning. However, Town and County Planning Act of 1968 and Local Government Law in 1971 was not changed much and the importance of planning was still continued at that time. The expectations of Thatcher Government from planning were to increase land use plans and values of the land according to requirement of developed economic facilities. Thatcher was the opposite of anti-market planning views, indeed she expected plans to provide good conditions for profit of market mechanisms and developers.

On the other hand, local authorities and people implemented their principles on planning to realize their purposes. Therefor, there were different planning principles and tools trough the country.

Government determined the following laws and regulation during the period:

1- Planning control powers was transferred from county council to district council.

2- Development Corporations were established to develop and restructure of inner cities that were previously in the hands of local governments.

3- Development permissions was not required on Enterprise Zones and Special Districts the powers of local authorities and development tax on these zones were annulled.

4- Empty Zones in the hands of government were to be sold according to the regulation of council of Ministers.

5- Costoms duty on the applications of developments were introduced.

The regulation in 1980 by the Ministry of Environment determined, the followings:

1- Development applications given to local authorities were to be permitted easily and quickly.

2- The easiness to structure and local plans was introduced by the regulations of 1982 and 1984. Greater London Council and six Metropolitan County Council were annulled by the regulation of 1986, therefore, strategic

planning was annulled also. In 1985, the law of 'lifting the burden' was determined.

3- Local authorities could accept 'simplified planning zones' which are the same as enterprise zones but they receive no finance encouragement from central governments. Private developers could only take the finance for these areas.

4- Property Advisory Group was thought to establish under the Ministry of Environment. But this was not put into action since a strong opposition came from localn autorities and public.

The Thatcher Government desired that market mechanism rules gains importance in housing sector. Private developers expected to built housings in rural areas and in green belts. However, middle and high income groups (electors) were willing to conserve the rural areas and green belts.

As a result the important changes in Thatcher Government were to accept market mechanism principles of urban and rural lands. Public planning principles were not popularized at that time. The main purpose of government was to develop free market economic system throughout the country.

The implementations of local land use planning was actually generalized by policy making and management system. Party agents were located in local authorities but independencies and civil organizations were decreased in these authorities.

Therefore, some local authorities were used planning as a tool to develop and encourage economic developments. They established cooperation with private sector and they bargained with private organizations to create

employment to built healthy environment to built infrastructure without any costs to public by giving development permissions.

Thatcher administration has encouraged this public-private enterpreunership and implemented the projects of city center and redevelop housing units near center. The main policy of Thatcher Government was to decrease the government intervention and to decrease the bureaucratic rules and to encourage privatization in all country.

There were different planning styles for different areas in the country. The varieties of planning was for different interest groups in several political frameworks. There were six planning styles and each style requires different political process and different research areas. Basically, there are two opinions on planning decisions, the one is against to market mechanisms, i.e., public planning (market critical) the other supports the market mechanisms in planning system (market led). As a result the Thatcher administration had defined a new approach to planning system by the philosophy of the New Right which relies to a greater extent on market criteria in all aspects of life.

Table 2.1 Implemented Planning Style Typologies In England After 1980.

CHARACTERISTICS OF URBAN PROBLEMS	**SITUATION TO THE MARKET PROCESS**	
	MARKET CRITICAL	MARKET-LED
ECONOMICAL ACTIVE AREAS	REGULATIVE PLANNING	TREND PLANNING
MARGINAL AREAS	POPULAR PLANNING	LEVERAGE PLANNING
PHYSICAL AND ECON. POOR AREAS	PUBLIC INVESTMENT PLANNING	PRIVATE MANA. PLANNING

Source: Altaban Özcan, 1990, p. 82.

In present situation, planning is still being practiced and there has been no major changes of currently used planning legislation despite sustained attract on planning from the New Right. Development plan still have an important role throughout the country. 'Most of the changes have been either revisions of policy within the existing planning system or some new additions to the mechanism' (Altaban, p.101). On the other hand, the British experience of economics and planning reforms would be an efficient example to defend the idea of requisites of planning styles, tools and frameworks in Türkiye.

2.1.3. THE BRITISH EXPERIMENT OF DEVELOPMENT RIGHTS

England has no exact TDR program experimentation in their planning process. However, British planners and government have the basic idea of TDR technique which was implemented through the whole country.

a. DEVELOPMENT PROCESS OF DEVELOPMENT RIGHTS BEFORE PLANNING ACTS

In England, the concepts and legal precedents of TDR are different than that of the United States of America. Experimentation with the TDR concepts began with the Town and Country Planning Acts in the early 1940's. The British Parliament, concerned with the need to decentralize and disperse industries and industrial population, intended to redevelop congested urban areas and decrease the vulnerability of population and industry to air attract. The Parliament created three committees to solve these problems. At the end of the study period, the committees produced three famous reports: the Barlow Report (1940), the Uthwatt Report (1942) , the Scott Report (1942). The common characteristics of the reports were the proposal of land use planning on a national scale, recommendation that the private rights in land be subject to the public welfare, and that the use of land by private owners be restricted to accomplish this objective. But the Uthwatt Report made the good examination of land use regulation by defining new land use concepts including 'betterment'

and 'floating value'. The report defined betterment as an increase in the value of land that results when government undertakes public works or other improvements on nearby land. The principle under the concept was that persons whose property has clearly increased in the market value by an improvement effected by local authorities should specially contribute to the cost of improvement. Government regains the increment in market value by the betterment charge.

The report defines floating value as the potential increase in value of all undeveloped land in an area. It is difficult to predict with any certainty the exact parcels of land upon which the floating value can settle. But the public control of land use results in shifting of floating value from some land to other land.

The Uthwatt Committee Report had recommended the followings:

"(1) A system be established to "recoup the betterment" from landowners who are "unjustly enriched" by increases in the value of their land resulting from government action and to compensate landowners from whose land the "floating value" had been shifted by governmental action; and

(2) The rights of development in all land lying outside built-up areas (with certain exceptions) be vested immediately in the government and that fair compensation be paid for those rights. Thereafter the land could not be developed without the consent of the government and the repurchase of the development right" (Rose, 1975, p.81).

These recommendations do not require the government nationalization about the land to solve the land use problems. Separation of the development right from other rights of ownership of land and transfer of that right to government, were the principles that the report suggested to achieve their objectives. These recommendation were adopted in the Town and Country Planning Act of 1947 by the British Parliament. A new process thereafter was

started with the Town and Country Planning Acts of 1947, 1951, 1953, 1954 and 1959.

b. THE TOWN AND COUNTRY PLANNING ACTS

Town And Country Planning Act of 1947

This act is the starting point and the basis of land use regulation systems in England. It covers all the country to prevent the development of industrial buildings in residential areas, to prevent unsightly and unhealthy developments in crowded areas (Garner, 1984, p.64) .

The main features of the 1947 act can be summarized as the preparation of development plans, increasing the powers of local authorities and new proposals of land use regulations.

Each local government was forced to make a development plan concerning the surveys of the physical conditions, ancient and historic structures, rural community structure, population, industry, employment, minerals, agriculture, forestry, communications, government developments, public utilities, social services, parks, conservation areas and holiday development (Roberts, 1976, p. 70).

The purpose of the development plans was: "The manner in which a local planning authority proposes that land in their area should be used whether by carrying out thereon of development or otherwise, and the stages by which any such development should be carried out" (William, 1984, p. 4) .

Local authorities gained the power to undertake the development and compulsory acquisition of land. Therefore, their financial powers were increased to discharge their functions.

The Uthwatt Committee separated the rights of ownership of land into two parts as development right and the other rights of property ownership. The British Government took over the development rights of all undeveloped lands with the act of by letting all other rights of ownership to the owners of land. Therefore, if an owner wanted to develop his land, he had to pay the "right to develop" the government by paying a development charge. In this way the act provided compensation to landowners. A fund was thus created of 300 million pounds and a new organization called the Central Land Board established to levy development charges.

But the 1947 act did not work well in practice. Because owners of undeveloped land did not want to develop their land or sell it for anything that is less than its full market value. Buyers of development rights had to pay development charges equal to the difference between the current market value and the 1947 "existing use value" but they did not want to pay more than the 1947 existing value. Therefore the marketability of land had been destroyed, because the price that sellers demanded and the price that developers could pay for land was so different.

Town And Country Planning Act of 1951

The purpose of the 1951 act was to correct some drafting errors that was in 1947 acct. The main principles of 1951 act was the same as the previous act. Therefore, the development rights of all undeveloped land which was taken in 1947 was not given again the landowners.

Town And Country Planning Act of 1953

Between the years 1948 and 1952, political parties discussed the 1947 and 1951 acts, especially in the direction of development charges that was paid by landowners or developers to the Central Land Board. In 1952, Conservation party was in power and they proposed Amendments in the Financial Provisions

of the 1947 act. Afterwards in 1953, this experimentation was put into the Town and Country Planning Act, and the development charge was eliminated. However the legislation did not return the development rights to landowners. These rights remained separated from the rest of the rights of land ownership in England. The distribution of the 300 million pound fund was postponed until 1954.

Town And Country Planning Act of 1954

1954 Act changed the form of compensation payments, so that, these payments were to be paid only if the landowner was prevented from obtaining the development value of his land if he suffers the imposition of planning restrictions which prevented or limited the development of his land or if he has his land compulsorily accrued at its existing use value under a notice served before 30th October 1958 (Heap Desmond, 1991, p.16). Therefore by this act again, the right to develop was remained separately from other rights of ownership.

Town And Country Planning Act of 1959

Not much was changed again in the 1959 act of Town and Country Planning. The purpose of the act was to secure market value equal to the development value.

Town And Country Planning Act of 1971

After these Acts, a new legislation was made in 1967. The development charge was reinstated at 40% of the development value. This complex legislation remained in effect until 1971 and was abolished once again. The development rights were still kept separated from the title and have been retained by the British Government.

Therefore, the British system of development right has been unable to device an effective system by which the separation and marketability of development right that can be used as a land use control device.

2.2. AMERICAN LAND USE TECHNIQUES

2.2.1. PLANNING SYSTEMS OF USA

United States of America has been used several land use techniques since the emergence of city planning. The Country has the economic system of free enterpreunership, therefore, it has been used the land use techniques both market-critical system and market-led system. While the market-critical techniques like zoning could not be implemented efficiently for some areas, the techniques which have the same rules of market mechanism (market-led) could be implemented effectively and efficiently in these areas. United States of Government has been used the second type of land use technique like TDR in solving the land use problems of private properties and in solving the problems of public investment finance.

Therefore, contemporary research and policy advising in environmental economics stress two themes. One theme is that environmental policy should strive for economic efficiency or the other theme is the opposite of that view. Additionally, Bromley (1991) suggest that economic efficiency whether achieved through market or through government allocations guided by an efficiency analysis, is an allocative results unique to a particular distribution of entitlements. These entitlements determine the market power (and political power) to establish whose preferences will count.

2.2.2. LAND USE TECHNIQUES IN CONSERVATION

Transfer of development rights (TDR), purchase of development rights (PDR), special zoning district, fee simple acquisitions and conservation easements are the techniques that have been used in United States of America.

Transfer of development rights (TDR) that is described in II. chapter shifts restricted development rights from restricted area to other development area. The system identifies 'sending' and 'receiving' areas for development rights. Developers can purchase development rights from the owners of identified conservation lands than use them in approved locations. TDR has the advantages of offering financial compensation, involving the private sector, and being permanent. The technique has been used effectively because it reflects the market mechanism rules. However, high administrative costs and difficulties of explaining the system to citizens have combined to hinder application of the concept across the country.

Purchase of development rights (PDR) are conservation easements that are brought from landowners. Government buy directly the development rights from owners of that right. Therefore, the attraction of direct financial compensation is the main advantage of this approach. On the other hand, the program is most costly to government. 'Critics argue that government PDR Programs weaken the creditability of zoning and reward landowners for property value deriving from publicly financed capital improvements such as roads and sewer and water systems' (Wright, 1994, p.382).

Special zoning districts lacks direct economic compensation and it is typically unpopular with landowners. The advantages of this approach are the low initial administrative management costs of securing open space. The system is a planning axiom that laws, regulations and politics change. 'Any zoning can be altered, amended or done away with. This flexibility, which leads planners

respond to new sets of conditions also makes zoning for weaker than perpetual land conservation devices.

Fee simple land acquisition is the most straight forward method of conservation. It has high costs of acquisition, management and liability. Generally, landowners do not want to sell their properties to government.

Conservation easements (commonly known as donated development rights) have been used by land trust and national conservation organizations. The technique has been used to protect over one million acres of private land from environmentally damaging forms of development. A land trust or an agency acquires each easement after negotiations with the landowners. Therefore, every project must result in a different set of restrictions on subdivision.

Recognition of environmental variability of every parcel is intervention conservation easement documents. The disadvantages of conservation easements are the unwillingness of most landowners to donate their development rights inperpetuity and the inability of most American's to benefit substantially from the income tax deductions earned by conservation easements. Table 1.1 the comparison of major techniques that have been used in America.

2.2.3. THE DEVELOPMENT OF THE TDR TECHNIQUE IN USA

Review of the historical evolution of property and development rights is essential for an understanding of the concept of Transfer of Development Rights.

In the US experience, property was excepted as a whole with usable rights which can be separated from the other rights of property ownership.

The earliest case of transfer of development rights was implemented in USA in the colonial period and it is still used in the several states of USA. The technique was used only for a few times in England. Today the concept is known but not implemented in England.

In the case of United States of America, the development of TDR could be examined in two parts. Firstly, the legal basis and precedents observed in the judicial process of development rights is a process that the development rights were established. Secondly, development stages of the TDR Technique are reviewed with reference to implementations in the United States of America.

a. THE LEGAL BASIS AND PRECEDENTS OF DEVELOPMENT RIGHTS IN USA

To explain the nature of legal precedents for development rights Rose (1975) could give the examples of the early transportation systems, the milldam acts, major drainage and irrigation projects and oil and gas production regulations. As elaborated below, to justify the assemblage of rights in the individually owned tracts various theories were given by Rose and he relied upon the inadequacies of 'the police power regulations' of land use. These regulations comprised a method for government control of private land use decisions. However, according to Rose they did not work well.

Early Transportation System

In the early transportation systems 'the private use of eminent domain' was exercised. By 1700's Private Cooperation's were encouraged to plan, construct and maintain the toll roads by the colonies, because public funds for such roads were limited. Therefore, the cooperation's were empowered to acquire rights of way with the payment of compensation to the affected private landowner. These turnpike cooperation's were responsible for the maintaining of the roads and control of the fee that is charged to the public. In this situation,

the public had the unquestionable right to use the roads upon the payment of requisite fees. In this case, there are the ideas of public use and public necessity which are necessary for the development of such acts.

These early implementations for toll roads were imitated by many states legislatures like construction of canals in the late 1700s and railroads in the early 1820s. In these applications private Cooperation's were responsible for laying the rights of way, controlling and maintaining the facilities to transport. The facilities were available to appropriate vessels in the case of canals, and the transportation of the public and their goods upon payment of fees in the case of railroads.

However, there are differences between the power of eminent domain in the canal and railroad Cooperation's. According to Rose (1977), in the case of canal cooperation's, the power of eminent domain was only a 'collateral' issue. In the railroad case, public user was less clear and occurred only in the railroad carriages. This situation creates a contrast with the public's ability to use their own desires on turnpikes and canals. "The power of eminent domain in the railroad cooperation's was nonetheless upheld. The analogy to turnpikes could be stretched this far. The direct public user was deemed sufficiently certain the necessity of a linear-rights-of- way was apparent and the delegation of this transportation function from the state to private cooperation was not deemed impermissible" (Rose, 1975, p.29).

The use of eminent domain by the private transportation Corporation was approved in the mid 1830's. This power was limited in the exercise of the acquisition of rights-of-way and to the necessary lands. The consideration of public use served by canals and railroads become a mixture of two doctrines: The concept of public utility and public benefit.

Rose (1975), stated that these experiences do not suggest that eminent domain be used for either the creation of development rights. These examples

bring into the consideration the rights of individually owned lands. According to Rose, the public utility contemplated was the expected multiplier effect on the state and national development.

The Milldam Acts

An equal consideration as the private turnpike cooperation in the colonial period of USA, was that of the landowners who established dams on a stream. He, thus, created a special right in himself. However, lands which stand on the upper streamcourse could be flooded because of this dam. "Had their right to exclusive possession of their properties been inviolable, they could have sued to have the dam torn down and their properties freed of the pond's encroachment" (Rose, 1975, p.30).

However, in many states, upstream landowners were limited by the statue, to actions only for damages resulting from the flooding, by the early 1700's.

Millers who operated under state regulation, applied this regulation in their lands. Millers could grind the grain of other farmers and they could charge the fee in terms of flour. In this case, the public user and the public utility of the mill was provided by the 'power of eminent domain'. Because there was a regulated participation among public and a compensation that was paid for unavoidable damages to the other property owners.

Rose (1975), establishes the legal precedents of milldam acts on two principle purposes. "First, in several jurisdictions the perceived multiplier effect of water power on the employment and industrial base of the state served to advance the public-use-as-public-utility concept with such vigor that the multiplier effect become a sufficient justification for placing eminent domain powers in the hands of private dammer's" (Rose, p.32).

Proper management of land resources by the use of development rights can produce beneficial multiplier effects. In some states, the private use of eminent domain was justified by this multiplier effect of resource use.

Secondly, the milldam statutes were reasonable police power regulations. This consideration was developed by the courts as a doctrine. The adjustment and protection of exercise of the correlative rights of individual owners created this doctrine. This may be the version of correlative rights in a commonly shared resource use and the development rights system.

Drainage and Irrigation Projects

Drainage and irrigation projects have different physical results but are considered equally in the legal structures. Drainage and irrigation projects require large amounts of front-end capital. In the 1800's, governments could not have paid these initial costs, but they created legal structures for the private sector to meet these ends capital. There was little actual acquisition of property on both types of projects. The areas of drainage and irrigation occupied property, like in the transportation and milldam acts. However, the majority of properties which were affected, were benefited by the projects, and not those occupied by them. The legal mechanisms were created by statue, for both projects. The courts empowered the commissioners to investigate and report on the economic feasibility of the projects as a result of the petition to a local court.

Under statutory authorization and court supervision, property owners could vote and impose their vision of desirable land use. In the drainage projects, majoritarian imposition caused the alteration of the physical characteristics of the lands involved. Here it is impossible to exclude any interior landholdings. Additionally, by contrast to milldam acts, there would have been no alteration in the physical nature of property in the irrigation districts.

There is a sharp difference in the physical effects on lands in the drainage and irrigation districts. However, benefits were assessed on all benefited properties within both types of districts. The assessment process, reflected a decision more in physical reality, than any alterable exigency arising from the reality of resource use.

A landowner in the drainage district could protest the project but he could not block the project. He might be a free rider. (Free rider conceive the immediate and inevitable benefits of the drainage from which he could not be excluded, while being excused from paying any of the costs because of his protestation that he neither wanted not would receive any benefit.) However, this situation does not exist in the irrigation projects. Because, if any landowner does not want to irrigate his lands, he will not have to pay any costs, he cannot benefit from the resulting project.

Courts adopted a special assessment (variation on taxation) in approving the legal structure of these districts. In this special assessment, a charge was assessed against a property for a benefit conferred on the property by a public or quasi-public expenditure. Therefore, the charge was assessed against the land but in the case of nonpayment the land, could be sold to satisfy the charge.

In the case of drainage and irrigation projects in general, public did not have the direct right of a user in the benefits created by the project. However, the situation was different in the case of turnpikes, canals and railroads and grist mills. The direct use of benefits was confined to the owners of the affected tracts (Rose, 1975, p.36).

The response of the judicial people for this problem was that the user, to be public, need not inevitably create practical user benefits in the entire public. Supreme Court adopted the common-resource, or common-property theory. "If it be essential or material for the prosperity of the community, and if the improvement be one in which all the landowners have a certain extent a

common interest, and the improvement cannot be accomplished without the concurrence of all or nearly all of the such owners by reason of the peculiar natural condition of the tracy sought to be reclaimed, than such reclamation may be made and the land rendered useful to all and at their joint expense" (Rose, 1975, p.36).

In these projects, public utility is a dominant notion (in the sense of multiplier effect of resources being put).

Oil And Gas Production Regulation

Another precedent of development rights is oil and gas production regulations in the United States of America. These two resources commonly occur together in nature. It may be impossible to recover all oil and gas from a resource-pool because of the pressure level in the initial production. Therefore, the pressure level is important in the recovery stages of oil and gas. Early production practices were simply an all-out race in United States of America. Each property owner produced as fast as possible to get as much oil and gas from his property and to drain as much from his neighbor's property as he could (Rose, 1975, p. 39). Hence, the oil in that pool was wasted.

The initial police power regulation to the use of reservoirs characterized oil and gas as a fugitive resources. (Fugitive resource is the resource that does not belong to anyone until captured that is reduced to possession.)

The result of this regulation were:

1- Reservoir energy was depleted rapidly with gas often being vented into the atmosphere once it has served the immediate purpose of bringing the more valuable oil to the surface.

2- The oil in reservoirs has been stolen by different landowners.

3- Full production of energy took place which exceed limited demand.

United States Supreme Court therefore, had to decide some rules related with over production of oil and gas. Some quotas had been determined to prevent over supply of these resources. Supreme Court believed that in the consumption of oil and gas and the rights of private landownership had to be prevented by statutory prohibition. Therefore, the regulations determined by the Court provided common relationship between private landowners which was called as correlative rights. The court decided to prevent the violation of correlative rights.

In some states, there were police power regulations which determined the quantity that each landowner could use the oil and gas resources.

This compelled the landowners to be connected each other by an eternality web.

The exercise of oil and gas production regulations, are connected with the concept of development rights in two points:

1- In oil and gas production regulations there are common resource pools. This is the same as the "development potential and development rights pool" in an area. In the transfer of development rights concept, although there is a zoning district, there is also a development pool and each landowner has correlative rights from that development pool.

2- In oil and gas production regulations there are rules to use the resource efficiently: These are density, type and time. These rules provide

common profit for all landowners in the area, and a basis for the redistribution of development entitlements.

The two results of these regulations are therefore, Pooling and Unitization:

1- Pooling: Pre-rules and pre-rationing has been determined in the common-resource use. Everyone has to follow these rules. For example, technically, one well is enough for 160 ha land for efficient resource-use. Therefore, one drilling unit is enough for 160 ha land and the place and the number of wells are determined at the initial stage of production.

2- Unitization: The whole of reservoir determines as one reservoir independent of the relationships mentioned above. A common-management system is determined to use the resource efficiently.

Therefore, the impact of a development rights system on land owners is comparable to the impact under compulsory pooling and Unitization. Pooling implies the strong likelihood, and in the case of Unitization, development decision and its execution will be stripped from the owner by administrative process.

b. EARLY STAGES OF THE TDR PROGRAM IN USA

In this part, the history of the TDR program with the New York case and with the legal precedents will be explained to show the development process of the program. New York has been a laboratory for many TDR regulations. Approximately in 1909, zoning in the United States was provoked by tall buildings and this comprehensive zoning has been a case of constitutional exercise of the police power.

By these years, there were zoning regulations which restricted the height of buildings. For example in 1893, the Boston regulations prohibited buildings over ten storeys. This prohibition was implemented easily because, owners of property in the immediate neighborhood of the business area wanted it to stop, owners of undeveloped sites objected to being assessed on the basis of a 16 story potential and finally owners of existing skyscrapers wanted to keep their monopoly. Additionally, there was an over-supply of office space and rents were falling.

Before 1983, during the colony period, Landowners had rights to build skyward and the common law allowed to build upwards without legal limitation. Of course by that time, the actual height of buildings were severely limited by the available technology. There was no elevators and this brought about a decline of rents above the third floor. Additionally, there was no steel frame construction which caused the thickness of masonry walls to increase in direct proportion to their height. In England this was not the case, it should have been granting a right of action to landowner who was cut off from the sunlight by the erection of a building on his neighbor's land, if the first landowner had interruptedly enjoyed that access for 20 years or more. (Richards D. A., 1986, p. 440).

In 1870, first equitable building at Broadway was established which was the first seven story building to incorporate an elevator in its original design.

Forty-five years later, the second equitable building was built with forty-two stories and 1250000 rentable square feet (Richards, D.A., 1986, p.441). It was the worlds largest office building with a seven acre shadow. Therefore, New York City Zoning Resolution in 1916 was introduced.

The 1916 Resolution was based on the Heights of Building Commission Report. In this report there was a twin theme dominant in planning policy in the central business district and which prevailed up to the present: The preservation

of property values and the encouragement of office buildings. This limitation was called the "zoning envelope" which was to be maintained in height, setback and area limitations on building size. According to a resolution, there were five classes of height districts based on street width. "Towers could rise to any height as long as they covered at their base not more than 25 percent of the lot area, and observed certain given setbacks from the street.....permitting a builder to add height if he provided open space beyond that required by the applicable district ordinance."(Richards, 1986, 442).

Other cities in USA like Boston and Chicago that had already enacted similar height limitations. The Boston Regulations had prohibited building over ten stories. The regulations were accepted easily because;

"1) Owners of property in the immediate neighborhood of the business area wanted it stop expanding vertically, so growth would be lateral,

2) Owners of undeveloped sites objected to being assessed on the basis of a 16 story potentially,

3) Owners of existing skyscrapers wanted to keep their monopoly. There was also an oversupply of office space and rents were falling. In Chicago, height limit was raised to 260 feet in 1902 and reduced to 200 feet in 1911, because there was an oversupply of the buildings. (Richards, 1986, p. 442)

After many years in New York, planners have decided that the 1916 height and area regulations were insufficient. According to their estimations, if New York City had been developed to the densities permitted by the overall municipal zoning envelope, its commercial districts would have been a working population of 344 million. By that time density restrictions were made within a plan, but it was a complex situation for implementation. Additionally, these regulations were inefficient being almost entirely devices to insure adequate light and air and only incidentally limiting the concentration of the working

population. A right and desired density can not be used to generate and ideal height and setback configuration. "Furthermore, a builder could thwart all these calculations by lowering ceiling heights and thereby squeezing more stories into the permitted height of a building" (Richards, 1986, p.443).

By the amendment of the 1916 Zoning Resolution, floor area ratio (FAR which has designed to control the amount of physical volume on a giving zoning lot by limiting the amount of usable floor area to be developed in the lots improvement) was to be used as the restriction in density. With the FAR, the direct regulation of density and control of the amount of physical volume was possible. It limited the amount of usable floor area to be developed in a given zoning lot. The FAR number is a multiple of the lot area which produces the maximum allowable square foot floor area of a development there on. Thus, a 10000 square feet lot area will allow a maximum of 120000 square feet building area where the FAR is 12 (Richards, 1986, p.443)

The FAR regulations limited the growth of business by fixing the maximum office floor space that can be erected in a city's business district. "Developers argued that setting the FAR too low would make it almost impossible to erect buildings large enough for the bigger companies, and with a FAR limit, the taller the building erected, the smaller its floor plan would be, with a loss of efficient office space to the elevator core"(Richards, 1986, p.444).

So in 1961, the New York City Planning Commission established 15 as the FAR in the highest density commercial districts under the 1961 Resolution. By that time, planners in NYC had two features. First one was a bonus device which granted the developer a 20 percent increase in permitted floor area (FAR from 15 to 18),in exchange for a plaza surrounding his building. The second one was liberalization in the definition of the zoning lot to which the FAR figure was applied, including not only the project site but also any other parcel within the same city block owned or "controlled through a lease with a term of at least

75 years. Both of these figures, in their intended and unintended results, have since then shaped the history of the development rights transfer in the New York City.

So in 1961, the TDR concept was first introduced by Gerald Lloyd in US This resolution permitted the transfer of development rights from a low rise building (landmarketed or not) to a continuous parcel, provided that both sides were under the same ownership in the same designated "zoning lot". After 1961, in New York City transfer of development rights program has started with the landmark preservation. The experiences of New York City can be found in the part of experiences of TDR process in this study. These practices and events have directly contributed to the development of the TDR technique.

Table 2.2 Conservation Easements.

CONSERVATION EASEMENTS	PDR'S	TDR'S	SPECIAL ZONING DISTRICTS	FEE SIMPLE PURCHASES
Permanent: partial legal interest only rights necessary to protect conservation values are required	Same as easements	Permanent: only rights necessary to protect conservation values are transferred	Temporary: laws, regulations, land use planning goals, politics change	Permanent: full interest, all rights acquired
Compensation: potential tax benefits, many landowners do not gain substantially	Compensation: direct cash payment	Compensation: direct cash payment for each development right transferred	No direct economic compensation; landowners may resist regulation	Compensation: direct buyout; landowners may not willingly sell
Land stays on tax rolls	Land stays on tax rolls	Land stays on tax rolls	Land stays on tax rolls	Land is removed from tax rolls
Inexpensive local acquisition costs; federal tax incentives	Moderate local acquisition costs can be 30-70% of fee simple value	High administrative costs; cumbersome, yet market place funds system	Administrative costs only; fees and taxes fund system, routine planning function	Expensive local acquisition costs: 100% of fee simple value
Low management costs	Low management costs	Moderate management costs	Low management costs	High management costs
Potentially high enforcement costs	Potentially high enforcement costs	Potentially high enforcement costs	Low to moderate enforcement costs	Low enforcement costs
No liability exposure	No liability exposure	No liability exposure	No liability exposure	Significant liability exposure; public use insurance is needed

Encouraged by stewardship; financial incentives are important but not the driving rationale	Economic compensation is very important; stewardship secondary	Economic compensation is very important; stewardship secondary	General public interest is served; may be compatible with stewardship	Private stewardship is eliminated
Record: 1000000 acres; unknown amount of tax incentives used	Record: 205000 acres in 9 state programs; costing $400 million; approximately 1.5 million acres under federal and other programs; cost unknown	Record: 36000 acres; cost unknown	Record: acreage and cost unknown	Record: millions of acres bought by all levels of government and by private conservation groups; cost unknown

Source: Wright, John 'Designing And Applying Conservation Easements' , APA Journal, Summer 1994, P. 381.

CHAPTER 3

TRANSFER OF DEVELOPMENT RIGHTS AS A PLANNING TOOL

In this part, the literature of Transfer of Development Rights Technique is taken into consideration by several authors points of views.. This study provides to understand the basic aspects and types of the technique even the literature on the TDR technique is not wide enough.

3.1. DEFINITION

Transfer of development rights technique (TDR) have been used as an instrument to achieve desired land use patterns within a community or region. It has been a satisfactory solution to a variety of land use problems. TDR technique depends on the idea in the ownership of land as bundle of rights. Development rights, among these bundle of rights is the "difference between existing use of the parcel and its potential use as permitted by existing law." (Pizor, 1986) In other words, a development right is equal to the unused development potential of a parcel of land.

So, the technique shifts the future development potential from one piece of property (the sending site) to another piece of property (the receiving site). Therefore, TDR technique depends on the idea that ownership of land entails the

ownership of bundle of rights including rights to access (easements), minerals (mineral rights), and undeveloped space above the parcel (air rights) (Pizor, 1986).

In United States of America, the legal understanding of ownership of real property is based on the ownership of a "bundle of rights". The potential to use the bundle is limited by many factors like zoning and land use restrictions, building codes, provisions, environmental laws and other public policy restrictions with the market of demand and supply. A zoning ordinance that classifies a particular piece of property for single family residential development for instance gives the owner the right to develop the property for that use, while taking away the right to develop a high rise office building.

To explain the basic structure of any TDR program, Costonis J. (1974) gives a simple transfer model of an historical building by a simple figure. In figure 3.1, the light building is the historical building with the present height of A and suppose that the landowner is restricted with the current height for this area. Therefore, the difference between B and A gives the unused development rights of the building. The unused development rights might be shared and purchased between other owners of the land who want to buy additional development rights.

Additionally, the basis of transfer can be explained with the example of Carmichael. In the figure 3.2, there are three owners A, B, C, each with 100 acres of land. Suppose that every unit acre of land will be equal to the one unit of density. The landowner A is allowed only 25 density in number of units. So, he/she has 75 unusable or surplus rights. He can therefore sell all unused development rights to a TDR market or a TDR bank.

The owner B is permitted 100 density units in his land. He holds rights necessary for allowable density. But the landowner C has 175 units of allowable density in his land, therefore, he might buy 75 additional development rights. In this example the landowner A can be compensated by the TDR program. The landowner can sell his development rights to landowner C, therefore, he will be compensated and the landowner C will not gain extra profit (windfall).

Sales of rights can therefore compensate landowners for the costs or losses of restrictions on development of their land. Rights (measured in various units of development density) are purchased in open market transactions by those who want to build at bonus densities on other parcels, (Pizor, 1986, 203). So, the buyer of the development right gains extra density, while the seller of that right is compensated. Therefore TDR can be considered also as a fiscal tool The important point here is that the community benefits in terms of open space, farmland, historical sides or environmentally sensitive lands.

In any TDR program, there are two districts that are determined in the beginning steps of the program. One is the "sending site" (preservation or transferor area) which is restricted in development rights or to low density uses to protect social or collective values like open spaces, landmarks, farmlands and historical sites. The other is the receiving site (transfer or transferee area) which is permitted for extra development.

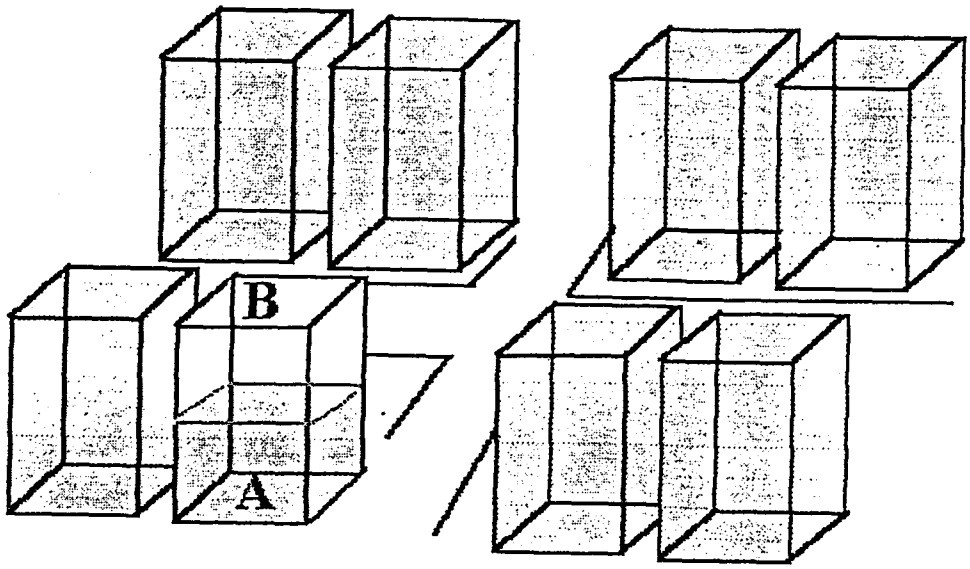


Figure 3.1 The Basis Of A TDR Program

OWNER	ACRES	DEVELOPMENT RIGHTS	ALLOWED DENSITY IN NUMBER OF UNITS	COMMENTS
A	100	100	25	Holds 75 unusable or surplus rights
B	100	100	100	Holds rights necessary for allowable development density
C	100	100	175	75 rights short of number needed to meet allowable density
TOTAL	300	300	300	

Figure 3.2: The explanation of TDR Technique (Carmichael, Donald M., 'Transferable Development Rights As A Basis For Land Use Control' Florida State University Law Review, Vol. 2:1, 1974, p. 100.)

The transferred development rights can be measured in various terms, such as floor area, dwelling units or parking spaces. There are five different proposals for the distribution of development rights distribution. These are:

a) Proportional to acreage (by Maryland Senate)

b) Proportional to market value (by Chavooshian and Norman)

c) Proportional to assessed value (by Jerome G. Rose)

d) Proportional to the difference between market value and restricted value at the time the TDR programs is initiated (by New Jersey Assembly)

e) Proportional to the difference between "maximum restricted value" and restricted value under TDR (Barrows and Prenguber A, 1976, p.765).

Some TDR programs are mandatory, in which all potential sending sites are restricted; others are voluntary and allow the market place, first to match a buyer and seller of the TDR's before the sending site becomes burdened by a land use restriction.

The technique is also proposed as a land use policy tool designed to overcome the "windfall-wipeout" dilemma and the perverse economic incentives created by traditional land use techniques. (Barrows and Prenguber, 1976, p.549).[1] The program has many varieties of implementation like protection of historic landmarks in Denver, the flood plain in Chicago's chic North Shore suburbs, cypress swamps in Florida, farmland in Maryland pine barrens in New Jersey... and so on.

[1] Wipeout is a decrease in the value of real estate and a windfall is an increase in the value of real estate because of zoning and other property restrictions.

Additionally Richards, (1986) agree that development rights transfer is as a method of fiscal, rather than estate zoning "The owner of designated landmark building can realize an economic gain by selling his unbuilt development rights; the buyer of this rights can acquire additional floor area he would otherwise not have; the neighborhood, can retain an essential amenity, a revitalized landmark plus new development harmonious with the character of the area....The city can benefit by new tax revenues from what was previously untaxable" (Richards, 1986, p.448).

Additionally TDR operates under the implicit assumption that all societal gains are increased in values resulting from changed regulations governing land use, and that all societal losses requiring compensation result from land value decreases. (Field and Conrad, 1975, p.331-340).

In any TDR program there are three points that have to be taken into account in the operation process.

1) Decision about which lands are to be preserved and which lands are to be developed. This type of decision making depends on biological, physical and economic information.

2) The planning agency of the TDR program endows landowners in a preserved area, with some fixed number of development rights. There are two ways to carried out: either, a certain number of rights per acre are given regardless of physical characteristics of the land involved, or rights are assigned according to the development value foregone by that acreage being placed under preservation status. (In terms of potential development, more valuable land and more rights.)

3) Usually, there are density restrictions at the transfer area, and a developer can only build at the transfer area up to a certain density. Therefore, a developer must purchase a number of development rights from the owners of land in the preserved area, in order to exceed the existing density restrictions.

3.1.1 THE BASIC PRINCIPLES OF TDR

Audrey Moore (1975 p. 221) has summarized the basic principles of TDR in 6 steps. These are:

"1- Separation of land use of land for purposes of regulation.

2- Equal compensation for all landowners for development potential of a plan at no cost to the public.

3- Taxation of a property by use while keeping to the standard of fair market value for assessment purposes.

4- Provision for purchase of land for public facilities at minimum cost.

5- Elimination of lengthy procedures involved in government approval of development.

6- Provision of economic mechanism for total approach to population distribution."

3.1.2 ACTORS IN TDR PROGRAM

In any TDR process there are generally three types of actors. These are landowners, facilitators and developers. The duties of the actors might be changed according to type and implementation area of the TDR program.

LANDOWNERS

Generally, before a TDR program is implemented, the landowners in the agricultural areas have two choices. One is to sell their land, and the second is to subdivide their land and sell a few of the lots. However, such sales from an agricultural zone decrease the land efficiency or the commercial viability of farming. But after a TDR program is implemented in the area, landowners will have many choices regardless of the initial situation. Now they could retain or sell the development rights or they could purchase land in the development district and develop it using their own TDR's. Also they could keep their land regardless of the development rights. By selling their rights, they will gain. Similar choices with the same logic are available also for their for restricted property than agricultural landowners. TDR is therefore a technique to compensate the restricted area landowners. They can exploit new ways to cash in their development rights, by selling their development rights to developers and facilitators.

FACILITATORS

TDR program demands changes in the traditional real estate business practices. The program requires different types of facilitators according to the nature of each implementation area. For example, in Maryland, farmers were concerned that the program would not work well, and they asked the planning commission to establish a bank to provide a guaranteed value for the rights. The

TDR bank is empowered to issue loan guarantees with the development rights as collateral and may acquire and sell development rights. In New Jersey, there is a TDR bank which was authorized by the legislature but vetoed by the governor. In Burlington County, there was used issued bonds to create its own bank, which was authorized to buy credits from county landowners for later resale. Here, the bank was a purchaser of last resort to the landowners who otherwise would not have found a purchaser for their rights.

In Maryland, real estate firms have also listed the TDR's and collected commissions for the sale of development rights. "The seller paid a 7% commission on the first TDR transaction in Montgomery County, and while some real estate brokers were reluctant to disclose exact commissions rates, they acknowledged collecting them. At least three real estate firms have dealt in TDR's, and most owners of land with development rights appear to have been contacted by real estate agents seeking to list the rights." (Pizor, 1986 p. 208). Besides these facilitators, attorneys have been involved in the TDR process both defending and challenging it in courts as well as advising clients on purchases and sales of rights.

DEVELOPERS

The development process changes in a TDR program than the actual development process.

Developers:

buying land

↓

preparing development plans

↓

gaining approvals for planning and subdivision

↓

constructing dwellings

↓

selling them to the public

Generally, in a TDR program approval process has a complex structure in the implementing area. Developers are same as other firms in the market place except the large developers. Therefore, they opposed to all forms of zoning, including the TDR. But their decisions whether to purchase rights or sidestep the TDR program depends on how the purchase of development rights affect the profitability of a given project. Developers who could still develop at a profit by producing the additional building surface, would purchase rights.

The willingness of the price paid by developers for the unused development rights, forms a decisive part of the TDR market.

3.1.3 AREAS OF USE

Transfer of development rights as a technique for land use planning can be used in different areas with different types according to characteristics of the problem. The followings are examples of its use as implemented in different locations throughout the USA. In chapter III, the finished applications of TDR technique was widely explained.

TDR AS A TOOL TO PRESERVE LANDMARKS AND HISTORICAL AREAS

The present legal methods to preserve landmarks and historical areas could not function effectively to preserve landmarks located in high development sections of the nation's cities. American cities have adopted a variety of zoning programs in a determined attempt to expand their leverage over private land use decisions. However, the programs encourage development decisions which would normally be precluded by the realities of the market place. Some programs have been successful and enabled the cities to channel development in accordance with municipality selected urban design policies. The programs were different according to implementation areas and were all premised upon a trade between the city and the developer.

The ineffectiveness of the present land use tools is caused by their structures that ignores the economic realities. The reality that underlies the landmark dilemma is that landmark ownership in downtown areas of high land value is markedly less profitable than redevelopment of landmark sites.

The owners of historical buildings and cities can not shoulder the full costs of preservation. The solution of the problem requires enlarging the present economic framework to include other participants who will themselves assume a major share of these costs. The general solution of the problem would be to spread the costs of preservation to all taxpayers within the city. However, political pressure and structure of today makes this view unsuitable.

Therefore, another method of costs distribution must be held. The program of TDR redistributes costs of preservation among interest groups by compensation.

TDR AS A TOOL TO PRESERVE OPEN SPACE AND FARMLANDS

In the early times, land ownership of open space and farmlands was in the fee simple title in the USA. The fee simple title means the ownership which confers upon the owner the right to do anything he wants with his land except what is prohibited by local, state and federal governments in the United States of America. However, the freedom to build as one desired without limitations was substantially restricted by zoning and planning under the exercise of the police powers as urbanization increased. In recent years, the awareness of present and possible environmental problems were adding other restrictions to the development process. The existing land use tools have become insufficient to protect the open space and farmlands. Especially, around the metropolitan areas, there is high development pressure on lands. The new techniques like TDR were desired to protect such areas.

The program provides a sustainable protection of the areas. Because, the right of development of any parcel of open space, is removed from the land to other locations of the city. The permanent protection by the TDR program is either held by a private market or by a government agency. If the government intervenes such a preservation program, the technique of purchase of development rights (PDR) is used to purchased the unused development rights from the restricted lands, such as farmlands.

TDR AS A TOOL TO PRESERVE FRAGILE ECOLOGICAL RESOURCES

Generally, the dilemma of preserving fragile ecological resources, reflects the inadequacies of public finance. The landowners are restricted without any compensation in such areas. But, the TDR technique provides permanent solutions

of such problems. No public finance is required by the TDR technique, and the wipeout of the landowners of such areas is prevented. The unused development rights of the lands might be sold either in private market or to a public agency.

TDR AS A TOOL FOR A PRIMARY SYSTEM OF LAND USE REGULATION

"The increasing land values in the fringe areas surrounding large metropolitan areas, combined with mounting pressures for more intense development have raised the sensitive issue of how to control 'urban sprawl' and converse upon spaces, without denying local jurisdictions of their tax- based means of support" (Rose, 1975, p.210).

Existing control methods are not effective, and as population and urbanization increase, development pressures on privately held uncommitted land will become overwhelming. Therefore, the TDR technique will be an effective method for a primary system of land use regulation. The technique can be adopted in different problem areas of land use activities. It allows to solve land use problems with financial solutions.

TDR AS A TOOL TO ENCOURAGE THE CONSTRUCTION OF MODERATE AND LOW INCOME HOUSING

There is encouragement problems of moderate and low income housing in metropolitan areas throughout the USA. Most suburban communities are utilizing various techniques of zoning such as large lot districts, minimum floor space requirements, apartment restrictions and controlled sequential development. These techniques are not efficient to encourage the construction of moderate and low income housing. TDR technique is again a solution for that problem. The

agreement process between the public agency and developers provides the encouragement of these housing types.

TDR AS A TOOL TO REGULATE THE LOCATION AND TIMING OF COMMUNITY GROWTH

In places where there are limited space suitable for intensive residential, commercial, industrial and recreational uses, planning and control is essential. With the establishment of TDR technique in such areas, a desirable general development rate could be determined by the public. In this case, a local government would issue the number of development rights each year which equals the rate of growth desired. These rights are distributed to landowners in proportion to their land holdings and may be transferred, bought and sold. The technique can be used in different locations subject to density limits established.

The public agency may hold one block of rights to be used to encourage development in specified areas or for other types of explicitly defined and socially desirable development.

TDR AS A TOOL TO AVOID THE WINDFALLS AND WIPEOUTS SYNDROME

Some property owners would turn into windfallerss when they gain extra land values due to the government action of land use regulations. Other landowners, however, suffer substantial losses in value, (that is, they are wiped out) by government activity. The TDR technique avoids the windfall-wipeout syndrome by the compensation principle. Restricted landowners (wipeothers) are compensated by the payment of windfallers development landowners.

3. 2 MARKET SYSTEM OF TDR PROCESS

In this part, the market system of TDR process is explained to see the basis and the procedures of the program.

3.2.1 MARKET FUNCTIONS IN THE OPERATION OF TRANSFERABLE DEVELOPMENT RIGHTS

TDR markets are created by transferring unused development rights from a sending area to another receiving area. The transfer process of these development potentials form a general framework of development rights market with the actors of the program. The market is either created by private holders or by public action which may establish a TDR bank to regulate the process of TDR program.

In theory, the development rights market distributes economic rents generated in the development process.

The distribution depends on "the market power of development rights holders and development district landowners, the elasticity and strength of demand in the development district and the bargaining skills and strategies of all parties involved". (Barrows, 1971, p. 551).

The cost of TDR is distributed among several groups. One is the restricted landowners who may not be fully compensated for, with the development right program. TDR program also brings cost to developers in the initial purchase of development right and land. But the cost may be partially or fully offset if the developer is able to offer lower prices to landowners in the development district. The process may be changed if landowners exploit their monopoly position created

by the TDR programs. Therefore, the cost of TDR is distributed among restricted landowners, development area landowners, developers and final consumers.

In TDR market, timing of development right purchase and sale is an important factor when requirements for development right purchase, do not coincide with the willingness of development right holders to sell their rights. In some of the TDR programs, the problem can be solved by following the historic pattern. It is generally hypothesized that preservation district landowners sell land whenever they receive a sufficiently attractive offer. "Since sale of development rights allows the landowner the continued use of the land, the only reason for withholding development right would be inanticipation of increased development right prices or as a bargaining strategy" (Pizor, 1978, p.365).

a. TYPES OF TDR MARKET

Pizor, Peter J. (Pizor, 1978, p. 365), has divided the market system of TDR process into three groups:

Open Market

In the open market, the existing real estate transfer system is valid. The development rights are purchased and sold in the open market. The price of that right is established by negotiation between the willingness of buyers and sellers. The private market principle is valid for this type.

The Modified Market With A Development Rights Bank

A governmental organization can establish a TDR Bank to function in the process of selling and buying of the development rights of the related landowners. The bank serves as purchaser of last resort for the development rights.

One Time Sales

In a situation of One Time Sales, a private group or generally a government purchases the rights and development rights are retired in the market of any TDR process.

b. THE DETERMINATION OF VALUE OF DEVELOPMENT RIGHTS

The value of the development rights is determined by different methods according to its use area and type of TDR program. Generally, the valuation of rights can be determined in three ways: The first way is valid for the modified market. The valuation of development rights is determined by the Development Rights Bank. Therefore, the bank gives the decision of the selling and purchase price of development rights.

The second way is valid for the open market system of a TDR program. Here the price of purchase and sale of development rights can be determined in agreement between buyers and sellers. In this situation, developers have an important role in determining the price of development rights.

In the third way, the value of development rights is equal to the difference between the value of property without restrictions, (subject only to zoning and other limitations, common to other properties) and the value of the property with restrictions. Here, the landuses of transfer area effect the value of the development rights such as residential or commercial uses.

COMPENSATION PRINCIPLE IN THE TDR OPERATION

The principle of the TDR program is designed to compensate landowners who are restricted from development under a legally adopted community land use plan. There are different views about the fair compensation in each community. Some restricted landowners desire full compensation while other desire very little compensation. The degree of compensation generally depends on the unpredictable and unsuitable TDR market. Barrows and Prenguber (1975), define the fair compensation as the unearned increment that is the difference between the property use value and development value.

However, Small (1976) is not agree with this definition of compensation. Accordingly, there is no possible way to know what the actual selling price for development. Claims for compensation are based on the projections of what the land would worth for development some years hence can only be speculative in nature and are not compansable under the constitutional requirement of just compensation. In this case, the definition of just compensation is the difference between the market value of the property immediately prior to the taking and its market value immediately subsequent to the taking ·

Barrows and Prenguber (1976), believe that the level of compensation legally required by TDR depends on whether the courts view it as an exercise of the police power or the power of eminent domain. "If TDR is held to be a police power exercise, compensation legally required from development right sale depends on whether the preservation zone restrictions allow the owner a reasonable return on his property, as defined by the courts. The legal definition of just compensation may not be nearly as critical for TDR success as the notion of fair or just compensation held by members of the community" (Barrows and Prenguber, 1976, p. 761) .

Furthermore, according to Barrows and Prenguber (1976), no compensation is required legally from development right sale or any other source, if TDR is held to be a legitimate exercise of the police power and if the land use restriction in the preservation zone allows the landowner a-reasonable-return-from-use of his land. In the case of police power regulation with no taking of property involved in the restrictions, the development right market must meet only the community's definition of fair compensation. Additionally the TDR program must have the political support of the community in order for the development right market to function smoothly. Because development right market may be strongly influenced by expectations of the future viability of the program and expectations of the likelihood of basic program changes by the local government. Program performance is effected by the community's feeling about just compensation and development right sale.

Police power can legitimately and legally reduce property value up to some maximum. Barrows and Prenguber (1976), defines the maximum restriction value as the value of the property under the most stringent restriction that would be allowed by the courts under the police power. "If the TDR preservation zone restriction reduces the property value to some level (termed TDR value) below the maximum restriction value, than a taking increment may be defined as the difference between the TDR value and the maximum restriction value" (Barrows and Prenguber, 1976, p.764).

As a result, the legally required minimum development right price is that which yields the property owner a total development right value equal to the taking increment.

"Under TDR process the unearned increment becomes an explicit property right for which the property owner is entitled to seek compensation, eventhough

the compensation is market determined"(Barrows and Prenguber, 1975, p.552). So any TDR program could arrest the evaluation in the balance of private versus public rights in the privately owned land which provides a balance in private and public ownership.

On the other hand, Costonis defines the taking increment as the difference between "reasonable beneficial use" and "resource protection use" (Costonis John, 1975).

In real world, it is not possible to estimate development right prices under bargaining strategies, therefore, full compensation can not be predicted. In the case that development right holders know the value of their development right and do not sell until that price was offered, wide differences in development right prices could occur. Furthermore, full compensation implies price instability and stable development right prices means that some owners receive much more than full compensation and others less (Barrows and Prenguber, 1975, p.552). However, Small (1976 p.761) suggests that just compensation is possible with stable development right prices. Small defines stable prices as a pattern of prices over time such that the present value of the prices prevailing at any two points in time discounted by the rate of interest appropriate for risk-free investments is constant. With this definition, the timing of sale of a given landowners development rights has no effect on the present value of the amount he receives.

According to Small (1976), the relationship between just compensation and stable prices for development right is straightforward. With stable development right prices just compensation could occur only if the initial distribution of development right among land parcels is in proportion to the "compansable value" of the parcels at the time at which the TDR program is initiated. However Barrows and Prenguber allocate development rights on the basis of the total assessed value

of the land. Small suggested that it is conceptually deficient (and would lead to inequities among landowners) because it ignores the residual value of the land that remains with the land owner after he has sold development right. (Small, Leslie, E.,1976, p. 572). Additionally, price stability alone is not sufficient because development right prices could be stable at a level either above and below that which would result in just compensation.

Barrows and Prenguber (1976), explain that the courts' principle defining just compensation is compensation that must be commensurate with the diminution in property value. Costonis (1975) said that estimation of market value is particularly troublesome when market forces and public regulations are entwined. The courts may take into account any existing or probable restrictions on the property such as zoning when determining compansable value. The courts usually allow a potential market value, contingent on zoning change and subsequent development be standard for compensation in eminent domain cases.

The other principle of the court is that payment must be in money, must be unconditional and the value of the payment must not be based on uncertain future events (Barrows and Prenguber,1976, p. 765).

3.3 PURCHASE OF DEVELOPMENT RIGHTS TECHNIQUE

In this part of the thesis, purchase of development rights program is explained with several authors points of views. The program is studied to see how a TDR based tools could be used with several points to achieve desired land use patterns in different problem areas of urban and rural areas.

3.3.1 DEFINITION

The purchase of development rights (PDR) is a tool for the protection of agricultural land and open space, that has become increasingly popular in the United States, in recent years. This tool has been used for many years and it provide to be successful in several locations. The public money for the use of PDR, as a way to preserve agricultural land and open space, is popular in the Northeast and particularly in urban fringe areas.

These areas are under intense pressure for conversion to urban land uses, but many of the states in the US. do not want to use PDR, because of the high costs involved. They do offer more permanent protection tools than zoning or property tax breaks and provide private landowners with compensation in return for restrictions on development.

In the report of "Saving The Garden" (Buckland, 1987, p. 239). PDR is divided into three groups:

1) Direct purchase,

2) Purchase of fee simple ownership with subsequent lease or resale with restrictions,

3) The use of preemption as part of the police power of government. (Caughlin,et al.,1977)

Farmers have usually two choices; one is to continue in farming and hope that the farm passes to the next generation, and the second is, try to sell out for development. The three groups of PDR mentioned above are used in some locations as a middle choice between the two usual choices for the landowners or

farmers. As mentioned before, a landowner's property rights are the boundle of rights that are separate rights and can be used or disposed of separately. Therefore, by the PDR program, the farmer sells the DR's and receives compensation for the development restrictions placed on the land. So, the farmer retains title to the land and can sell or pass along the land to others, however, his land is limited to farming and open space.

Ordinally, ZONING is a type of conservation tool, and it restricts farmers use of the land without any compensation. But it is used in the US. over 300 counties and communities (Toner,1984). Also many farm zones have minimum lot sizes that allow the land to be broken into parcels that are too small for commercial farming. So, depending on the study of the US. Department of Agriculture and the Council on Environmental Quality in 1981, between 1967 and 1977 the United States lost 3000000 acres of farmland each year. And the first and second quality of soil is located within metropolitan counties in the US.. Therefore, a PDR program is much useful in preserving agricultural land and open space than other programs.

In recent years, the use of public money to purchase development rights to privately held land has used in USA. For the program, several states and counties have devoted substantial finance. However, a number of states have chosen not to use the purchase of development right technique in their growth management techniques. "Although PDR programs are likely to remain controversial because of the sizable cost involved, they do offer more permanent farmland protection than zoning or property tax breaks and provide private landowners with compensation in return for restrictions on development" (Daniels, 1991, p. 421).

By this way, the farmer can use the money received to buy down debt, reinvest in the farm or for other purposes. The principle under the PDR program is that the farmer has a right to develop the land only in the situation of not being

limited by the current zoning programs. The payment purchases that right to develop and inessence gives the buyer an interest in the farmer's real estate. Table 3.1 shows the purchase of development rights by state to March 1990.

ADVANTAGES AND DISADVANTAGES OF THE PDR PROGRAMS

The PDR has both advantages and disadvantages (Table 3.2). In regard to its advantages it can be said that the PDR has the benefits for both public and private powers, because of its conservation and compensation. There are ,moreover, incentives for both public and private as a hole. Maintaining that planning growth is "more desirable and as profitable as unplanned growth..... development rights purchase as a way to make plans more acceptable to the public" (McHarg,1969). Furthermore there are public benefits of open space preservation through easement acquisition as agricultural land conservation, recreation and control of sprawl. In addition to this it has the potential benefit because of the reservation of future options.

Also Smith (1971), notes that the cost of easements are less than fee simple purchase, the property remains on the tax rolls, maintenance is free and the land can continue to be farmed. Additionally, development rights method includes, that restrictions may be "adapted to cultural values to be protected". Because of its compensation, the equity issues are addressed openly and directly. And finally, the most beneficial characteristics of PDR programs is that it avoids the use of condemnation to acquire property.

Table 3.1: Purchase Of Development Rights By State To March 1990

STATE	PDR BEGUN	ACRES	FARMS	FUNDS AUTHORIZED (millions)	FUND SPENT (millions)
Connecticut	1978	17313	114	48.3	40.8
Maine	1990	330	1	1	0.38
Maryland	1977	79482	534	78	68
Massachusetts	1977	27650	285	80	65
New Hampshire	1979	2090	26	3.6	3
New Jersey	1983	8900	68	100	50
Pennsylvania	1989	496	5	100	0.6
Rhode Island	1982	1362	18	10.5	7.5
Vermont	1987	9128	30	6.9	5.1
TOTAL		146751	1081	428.3	240.38

Source: Daniels Thomas L., 1991, p.422.

On the other hand there are So, some disadvantages of the program too. The most problematic one is the cost of development rigs. The National Agricultural Land Study in the US. reported that the cost of development rights is $1800 per acre at the average. That is why government may be unwilling to use that program. But the cost of PDR is directly related to the degree of development according to Dunford (1987). Where development pressure is highest, the cost of development rights will be greatest. Additionally, Fletcher and Litte (1982) have written that "in areas where development rights would be inexpensive to purchase (that is, where development pressure is light), the technique is not thought to be needed. Also Baden (1984) claims that "where purchase of development rights by

government is extremely expensive, tax payers will (rationally) choose other means of protection so as not to transfer the cost to current landowners."

It must be noted, however, that local governments may not be able to purchase all protection areas, because of high costs of PDR. The result is that less than adequate land area is preserved and a patchwork pattern of open and developed land may appear.(Bucland, 1987, p.21)

Another disadvantage of the PDR program is , that most of the property will be in the governments hands. Krasnowiecki and Paul suggested that "most Americans would probably react strongly to any proposal designed to put government in the real estate business on an extensive scale" (Krasnowieecki and Paul, 1961, p.196). Of course this creates political objections to such programs. So, this socio political reactions have been suggested as disadvantages of PDR.

Besides there will be another additional problems by causing higher housing prices, thus preserving a certain social status and creating "private amenity at public cost." (Daniels, 1991, p. 421).

In the National Agricultural Land Study, there are two methods that reduce PDR costs which will be mentioned. The one is partial compensation that involves paying the farmland owner for only a part of the loss of his development rights. The second one is land banking. Government purchases large portions of rural land and acts as its own developer. But in the US. it remains theoretical because of the constitutional and political problems.

Besides these there is another technique that uses value taxation. "Once development rights have been surrounded, the owner's taxes should be based on the land is current use. Hadwiger and Browne (1978) state that this is beneficial to

farming since no other use is legal. Lapping (1980) explains that although the land must remain on government tax rolls, taxes can only be based on current use value, which may lead to a reduction of the overall tax base. Roe (1976) also expresses his concern as placing a limitation on use of the technique by local governments that are greatly depended on property taxes."(Bucland, 1987, p.242).

Some programs are voluntary in the implementation process which creates a problem in the prices of PDR. The voluntary implementation of such a program means that many farmland owners may choose not to participate in a PDR program undermining the accumulation of critical mass of farmland to support the agricultural infrastructure which would result in the creation of isolated islands of preserved area. The situation invite development because of the permanent open space. Also the voluntary implementation frustrates the negotiation of a mutually agreeable easement price.

The other inefficiency of PDR program is that it compensates landowners for the increased value of their land brought about by public investment in roads, schools and sewer and water lines, not by the efforts of the landowner. "It was exactly this unearned increment that Henry George sought to capture with his famous single tax which would recoup for the public any increase in private land value brought about by public investment" (Daniels, 1991, p. 421). Therefore, the landowner is effectively giving up any future appreciation in the development value of the land by selling an easement. He is preserving land in farming and open space for the benefit of the public at large.

Additionally, Lyons (1989) (Daniels, 1991, p. 424) suggested that purchase of development rights to some farmland may drive up the price of other farmland in the area. However, farmer with no development rights remaining should sell its

agricultural use value, thus aiding in the transfer of farmland within a farm family or to another farmer.

Table 3.2: Pros and Cons of PDRs

PRO	CON
Fairness: Landowner compensated for development restrictions	PDR not based on landowner's financial situation.
Permanence, except for eminent domain, 25 year term easement, or if government purchasing the easements sells it back to the landowner.	Expensive. Development possibility of rights may cost over 50 % of fair market value, and cost may exceed value of land as farmland or open space. Some protection might be achieved at far less cost through zoning.
Landowner turns part of fixed asset (land) into liquid asset (cash). May reinvest cash in farm or pay off debt.	Compensation is paid to landowner for development value that the landowner did not create. Rather this increased land value was created by public investment in roads, schools, and sewer and water lines that have made the landowner's property more accessible. Thus PDR pays landowner an unearned increment.
Possible reduction in property taxes and estate taxes. Provides greater security for farming in a neighborhood or region.	Weakens the creditability of zoning. Restrictions on land use need not require compensation if they further the public health, safety, and welfare and if some reasonable economic use remains.
Program is voluntary, of greater acceptability to landowners than police power methods.	Landowners may refuse to participate.
	Administration may be cumbersome. May foreclose future options by selling development rights.

Source: Daniels T., 1991, p.423.

PURPOSE AND GOALS

The goal of PDR programs is to keep land in agricultural and open space use. This program has the assumption that the landowner or the farmer has the right to develop the land in a way that may not be limited by the current zoning. So, it is a tool used by local governments desiring to protect rural land.

Looking at the literature over the purpose and goals of the purchase of development rights, it can be seen that the technique can be applied to a number of situations involving interests in land. Whyte denotes it as a technique for an effective open space preservation tool and developed about its wider use. Shamon states that "the purpose of a conservation easement is to assure the permanent preservation of land in its natural state or in whatever degree of naturalness the land possesses at the time the easement is granted" (Shomon, 1971, p.57). But after that when it began to be used for agricultural land protection the primary goal behind PDR has been questioned. In 1984 Baden claims that "the purchase of development rights might be more acceptable as an open space preservation technique, rather than offering real farmland retention value. The urban land institute has also recommended that open space policies be pursued separately from farmland preservation concerns, (Rose, 1984). Wolf (1981) has suggested that the approach is valid for both purposes, but on a limited basis, as it is not effective in protecting large amounts of land against ensuing development. White (1962) has admitted that it does not work well where development is impending. This is in conjunction with other techniques."(Bucland, p.241).

Additionally, this PDR technique is used by more and more agencies in the US. and its use and effectiveness will be increased by the time.

3.3.2 HISTORICAL DEVELOPMENT OF PURCHASE OF DEVELOPMENT RIGHTS PROGRAM

As mentioned before the concept of purchasing less than fee interest in land is not new whereas the application of the method to farmland protection is the new concept. For acquiring different interest in different forms. The use of easements as a separate right in land can be traced to Roman Times (Netherton, 1979, as cited in Daniels, 1991). Europe has also been adopted by the technique. In the United States, the traditional use of easements developed as a way to accommodate physical needs such as rights of way for highways and railroads, or rights to cross property with power and water and power lines (SilverStrong, 1974).

The first known application of purchase of development rights program was in Ohio in the early 1913. The program was established to acquire farmland for water storage and it was the part of a flood prevention program along Ohio's Miami River. The first application at the national level was established by Federal Rights in Land Act of 1928 giving the National Capital Park and Planning Commission. In 1930's the National Park Service used the technique for acquisition of land adjacent to parkways. By these years, the parks such as The Blue Ridge Parkway in Virginia and North Carolina, Natches Trace Parkway in Tennesse were used the easement purchases.

By that time, there was no more experience with large scale use of less than fee purchase to protect rural land. Generally, state agents were used to negotiate purchases from local landowners. The price of development rights and the misunderstanding of the concept brought the Park Service to the court. Therefore, the National Park Service discontinued the purchase of easements in the 1950's, returning to full fee simple purchase programs to conclude aquisions for parkways (Cunningram, 1968). On the other hand, there were positive results on the Blue

Ridge Parkway. The Park Service saved the money and the natural situation was protected.

Therefore, the process of purchase of less than fee aquision was started with the scenery open space easements near to urban areas. After that years easement were used for small parcels of land and highway corridors with small acquisitions in the states of California and New York. By the years of 1950's easements were used to prohibit drainage and filling of these potholes and burning of marshvegetation in the Norht and South Dakota and Minnesota (Williams, 1962 as cited in Daniels,1991).

After the II. World War, the development expanded through the suburbs with the new phenomenon, urban sprawl, which make the open space preservation essential.

After 1950's many states like California (being the first) were established their legislation for the protection of large open spaces by this technique. The state of California provided the Open Space and Scenic Land Acquisition Act in 1959. Moreover, the federal level established the provisions for acquiring open space through easements by the Housing Act of 1961.

The usage of the technique at the national level has continued on the environmental protection. In the state of Maryland, the NPS purchased the development rights of 2000 acres at the end of 1960's to preserve natural landscape.

In 1968, The Wild and Scenic Rivers Act was established providing with the use of easements to protect the land along river corridors.

As a result the technique is used to find a variety of solutions to land use problems. It is generally used by state and federal governments to preserve farmland and open spaces near the metropolitan areas. It was legally used to protect the farmland after 1970. There is also a number of private organizations to acquire easements either as gifts or by purchase to protect the natural and scenic property.

3.3.3 ADMINISTRATION OF PDR PROGRAMS

Generally, the administration of a PDR program is difficult. Because government bureaucracies process applications to sell development rights, the long period may pass between the application date and actual settlement. The time has continue with the applications that have to be reviewed and ranked, appraisals performed and offers that made and accepted and approvals that have to be obtained from various government agencies. Therefore, the length of the acquisition process may discourage some landowners and may inconvenience others who are looking to settle for tax purposes within a certain calendar year (Daniels, 1991, p.424).

As a starting point the PDR process begins with the legislation which appropriates funds and creates an administrative agency. Then it continues with the administration process. This process starts with the creation of a state or county agency with autonomous or advisory statements. Then targeting farms and farmlands after that ranking applications by development pressure and the quality of farmland. The next point is coming with the conduct appraisals and after all these steps development rights are negotiated and purchased from the landowner. Finally, the PDR comes out of monitors and then it is enforced.

In the appropriation of funds there are two types of strategies used in the US.. One is that the program exists with substantial public expenditure and the other is that the program can continue indefinitely at a more modest level of funding. As I mentioned before, PDR is an expensive program, so it may be politically more expedient to spread out the costs over time and more realistic to acquire gradually large blocks of land under easement.

Also there are changing strategies of the PDR accounting to its size, that is in large states it will be best to have the program managed on the county level by using county and state money. This simplifies administration and allows each county to determine which lands to preserve and how much to pay. But in the small states PDR administration will be most efficient.

There are three agencies for PDR, one is the county planning department, the second one is the state department of agriculture, and third one is some combination of the two departments. It will be of use to examine closer how these agencies work:

The first step of the state or county agency is to determine which lands are to be purchased. Here, the preparation of the quality of soil maps are also involved. Then the ranking process starts. The importance here is that administrators will fallow the Internal Revenue Service (IRS) criteria concerning the donation of development rights to determine which lands to protect. "The donation of DR's is considered a charitable contribution which a landowner may use as a deduction from taxable income (up to 30% of adjusted gross income in any one years, not exceed 6 years)..... This service encourages the preservation of farms that are under moderate development pressure, where municipal sewer, water and major roads are not adjacent to the property, but where there is some development in the general vicinity." (Wright j., 1993, p.489) Also IRS spends public funds on purchasing

development rights in those areas where it could make a difference, but not where the development is unlikely to occur.

In the ranking system, administrators decide which development rights to purchase and in which sequence. The ranking system depends on two criteria; the degree of development pressure and the quality of the farmland. According to these criteria, properties are ranked and given numbers. Then finally the property with highest total point score ranks first and receives top priority for development rights purchase.

After these steps the development right is determined, for example, if the fair marked value is $700000 and the agricultural value is $400000, then the development rights are worth $300000.

After appraisal process, a further step is determining how to appraise the DR's of farmland subject to agricultural or other zoning, which is not permanent. "It is unclear precisely what kind of development would be allowed on a property if it were rezoned from farm to nonfarm use..... On the other hand agricultural zoning may limit the types of intensities of nonfarm uses, so as to severally restricts the lands development potential. Thus, in determining a fair marked value, the appraiser must face alternative options that entail widely divergent values of development rights" (Daniels, 1991, p. 426). The other thing is farm buildings. They should be included in the agricultural but not the development value of the land.

CHAPTER 4

EVIDENCES FROM TDR IMPLEMENTATIONS

Transfer of development rights technique has been used in United States of America to solve the problems of cities and rural areas since 1960's. The technique has been implemented to different areas to solve different problems of the country's cities and towns. Therefore, Americans had proposed and used different ways of the technique according to characteristics of the implemented areas. The technique is the same basically but the method and the type of it diverse according to elements of the problems.

These differences are occurred by the type of the program that is whether it is voluntary or mandatory, by the organization of the program, by the market elements and by the characteristics of transfer and sending areas etc.....

All these differences in implementing process of the technique create different solutions and different results. Moreover, they create the proof of the technique. Therefore, it is necessary to examine or to look into details of different TDR applications throughout the country.

The evidences from different TDR applications would be examined by classification of the problem areas. In the first part evidences from the preservation of agriculture and open space would be examined to show the effectiveness of the technique on the conservation of such areas. In the second part, conservation of historical areas and landmarks application of the technique

in metropolitan areas to make clear the system results that is depended on the design of the TDR technique. Finally, examples from TDR technique to solve land use regulation problems are examined proving that TDR technique would be a solution of different land use problems. (Table 4.1).

4.1 OPEN SPACE AND AGRICULTURAL LAND PRESERVATION APPLICATIONS

Open spaces have been preserved by PDR and TDR for many years in USA. The examples here, are the selected evidences from these application processes.

AREA	PROBLEM	YEAR	TYPE	ORGANIZATION	BANK	TRANSFER AREA
MONTGOMERY COUNTY MARYLAND	LOSS OF AGRICULTURAL LAND	1980	MANDATORY	THE MONTGOMERY PLANNING COMMISSSION	TDR BANK	DETERMINED AND INDEPENDENT TO SENDING AREA
SOUTH KINSTOWN RHODE ISLAND	LOSS OF COASTAL RESOURCES	1983	VOLUNTARY	SOUTH KINGSTOWN PLANNING DEPARTMENT	FREE MARKET	DETERMINED AND INDEPENDEENT TO THE SENDING AREA
NEW JERSEY PINELANDS	THREATMENT OF ECO-SYSTEM	1980	MANDATORY	PINELAND PLANNING COMMISSIONN AND LOCAL GOVERNMENT	PDC BANK	PREDETERMINED TRANSFER AREA
KING COUNTY	DECLINE IN AGRICULTURAL LAND	1979	MANDATORY PDR	PDR	PDR	PDR
SEATTLE	LOW INCOME HOUSING AND LANDMARKS	1985	MANDATORY	DEPARTMENT OF COMMUNITY AND DEVELOPMENT	MARKET	ONLY SAME BLOCK
SANTA MONICA MOUNTAINS CALIFORNIA	LAND USE	1979	VOLUNTARY	COASTAL COMMISSION	BANK	NO RESTRICTION

Table 4.1. The Examples From TDR and PDR Implemantations

4.1.1. SOUTH KINGSTOWN, RHODE ISLAND

CHARACTERISTICS OF THE AREA

South Kingstown is located on the north of Atlantic Ocean and the east of Charlestown in the Rhode Island (figure 4.1). It covers 62.3 square miles and has a year-round population of 20414 residents.

The region has the characteristics of glacial outwash plain terminating in a series of salt-water ponds. The salt water pond is separated from Block Island Sound by a narrow barrier (Mackgilvrey, p.27). The town has got also a university, a summer resort and rural characteristics. The Rhode Island University is the towns largest employer. In the summer session the population is increased with the summer residents.

PROBLEMS OF THE AREA

South Kingstown is confronted with the task of balancing the conflicting goals of economic growth and protection of its coastal resources. South Kingstown's population has increased very rapidly since 1950. Water quality of the salt water ponds is decreased by the growing suburbanization of the region.

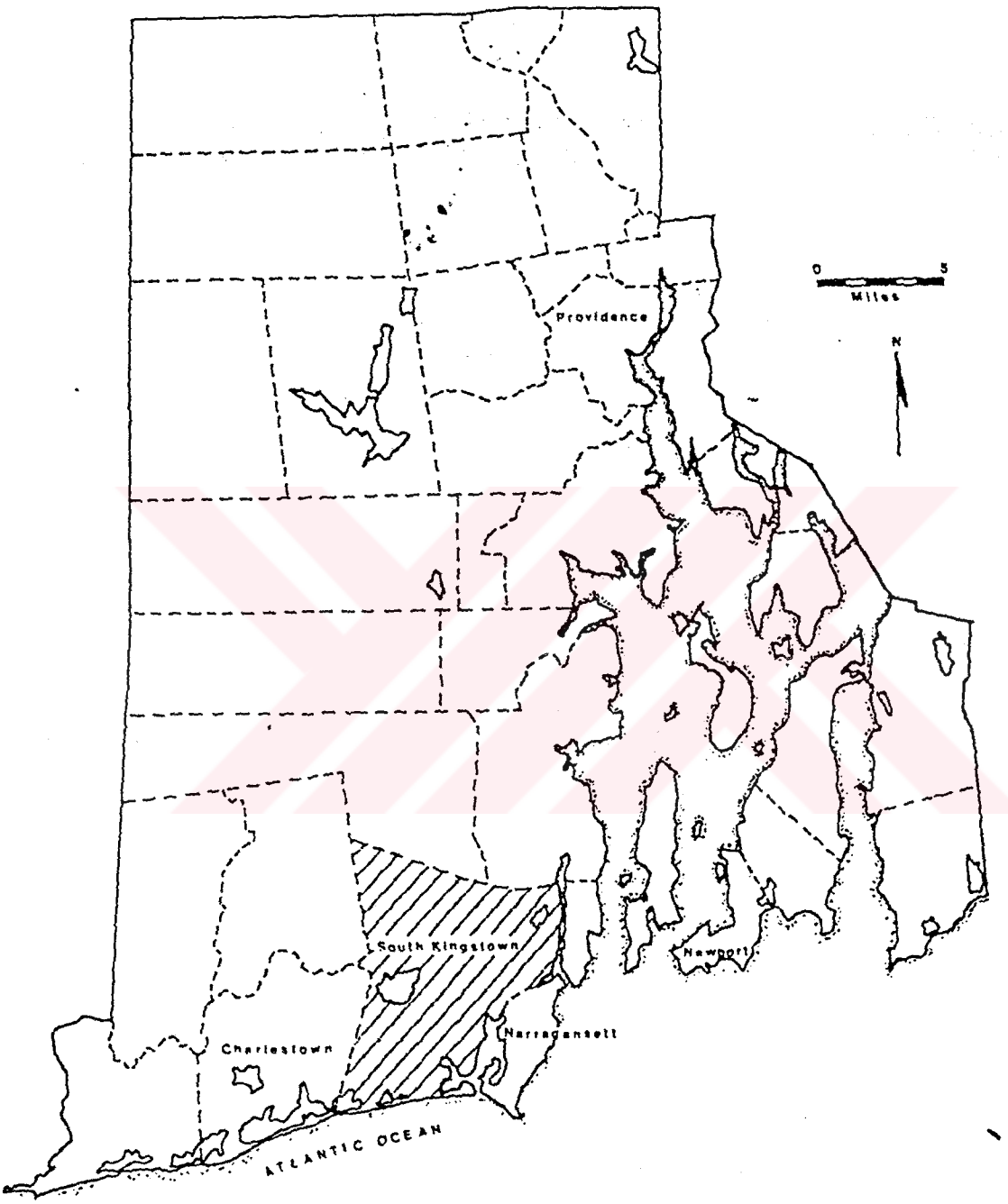


Figure 4.2 Location of South Kinstown In Rhode Island

It is surprising that there were 71% undeveloped land in the Salt-Pond region, although residential development were suitable. Town officials had considered that existing land use regulation was not sufficient to protect the area from development. In 1975, a town ordinance was adopted to protect the residential development and it was challenged by a landowner in 1983. Additionally, down zoning was prevented by the fragmented ownership of barrier beach property. Therefore, only local building codes and state permits were used to preculate the barrier beach development (the cost of developments increased by these barriers). Another proposal was put by the Town's Planning Board: a new five-acre residential zone in the Salt--Pond region. However, the population of coastal region was more than double under five acre zoning.

At the end of these applications, fiscal constraints were considered to prevent acquisition of coastal open space at prevailing market prices.

SOLUTION OF THE PROBLEMS

As a result, transfer of development rights technique was selected to prohibit coastal open space in South Kingstown. South Kingstown Planning Department had proposed the program that can be used to shift development from preservation areas to other high dense areas. As a result, landowners could be compensated by the program unlike down zoning or exclusive use zoning.

IMPLEMENTATION OF THE TDR TECHNIQUE

TDR program is set to shift development from the coastal region to more developed sections of the town. The program is chosen is a voluntary one due to the landownership patterns in the coastal region and uncertain immediate marketability of the development rights certificates. These landowners are from families that have resided in the area for generations (Mcgilvray, Anderson and West, 1985, p.30). Additionally, the town had completed a state-mandated property revaluation that may result in as much as a five-fold increase in

property taxes for owners of large coastal parcels in the years of 1980's. Therefore, a voluntary TDR program encourages the landowners to sell their unused development rights due to the compensation and reduced property taxes.

The definition of preservation zone is put by mapping all the important natural resources. These are prime agricultural soils, ground water, sheds, wetlands, surface water, wildlife habitat, historical and cultural features and areas of high scenic quality. After that determination, lots under four acres, publicly owned land parcels experiencing little development pressure and a planned residential compound were excluded from the preservation zone. At the end, the zone was 2933 acres in 138 separate parcels. In South Kingstown, development right certificates were distributed according to estimated development value of each parcel that is the best approach for a hetoregen coastal land. The value of development rights were calculated by the following way:

Prediction of market value of each parcel

(using actual land transactions data and an economic model)

↓

Calculation of current use values for each parcel

↓

Subtractions of use value from market value

↓

estimated value of development rights

At the end, the value of development rights were calculated by the subtraction of estimated market value from the use value. The result is shown on the figure 4.2.

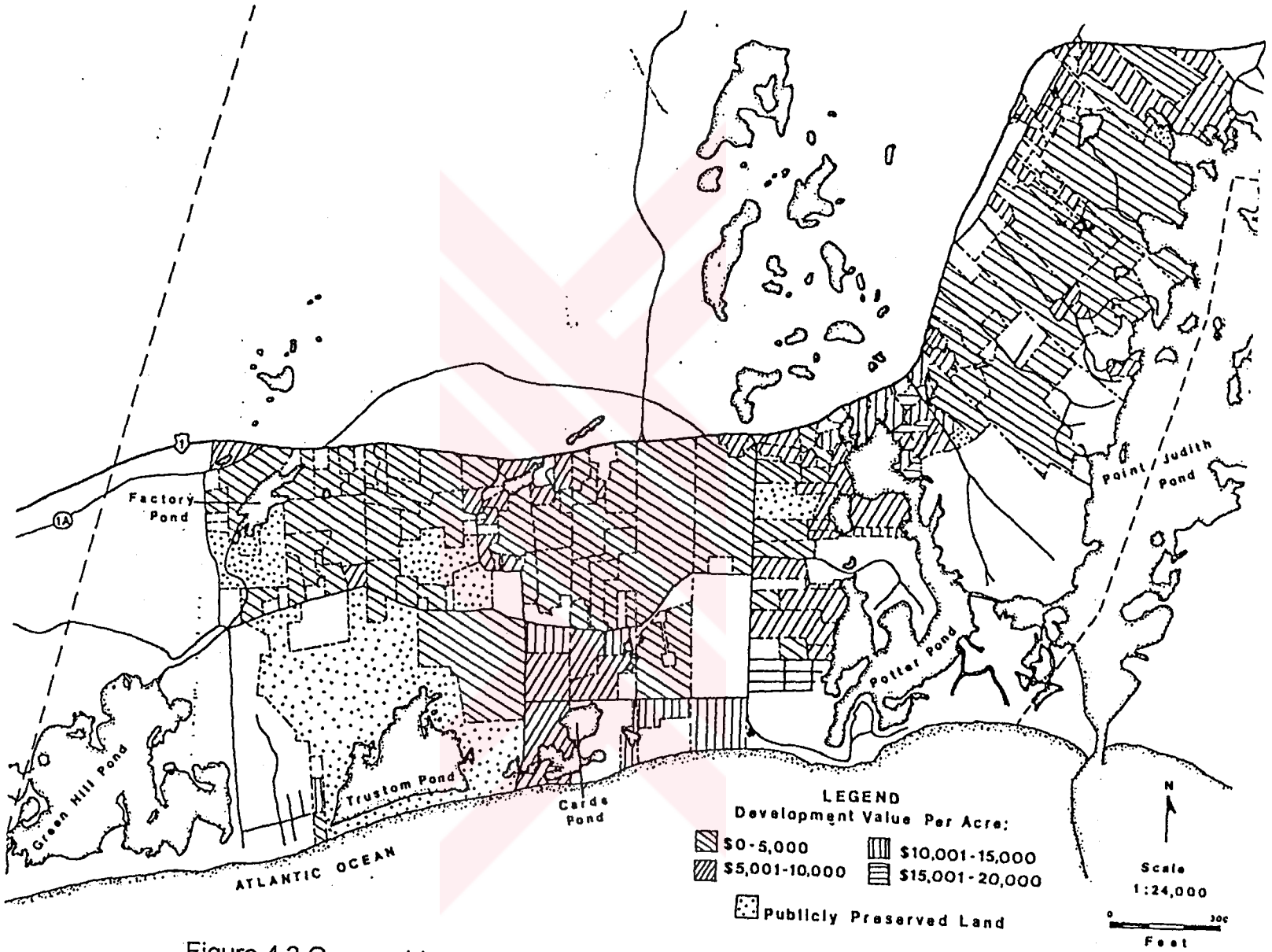


Figure 4.3 Geographic distribution of development value in the preservation zone

In the transfer zone, Realtor's perception of developer's willingness to pay for development rights certificates (DRC) was determined as $5000 per DRC. This procedure resulted in the creation of 2531 DRC's.

The transfer zone has both designated and floating components in South Kingstown. A density bonus is permitted in the floating component, it is added to the town's Residential Cluster Development (RCD) Ordinance. By this way developers can build up to 75% multifamily units in a cluster (50% is under the RCD Ordinance) only if they bought DRC's.

On the other hand, the designated portion of the transfer zone was determined by the two criteria's:

"1- The transfer zone could not conflict with South Kingstown's Rural Low Density Zones,

2- The transfer zone should only include areas serviced by existing public sewers and water' (McGilvray Anderson and West,1985, p.34).

Therefore, a general transfer zone was determined by the recommendations of the South Kingstown Planner. After that, wetlands, lots with less than three acres and any acreage associated with existing houses were excluded from the transfer zone. At the end the transfer zone was 598 acres. These acres were divided as: 238 acres is zoned R20 (one house per 20000 square feet), 360 acres zoned R30 (one house per 30000 square feet.

The maximum density was allowed as four units per acre for detached housing (single family) and 6 units per acre for attached housing (town houses). One DRC was required for each additional unit of density above the number allowed by the existing zoning.

SIMULATION OF THE DEVELOPMENT RIGHT MARKET

Demand and supply characteristics of the development rights or additional density form the market for development right certificates. A total of 253 DRC forms the supply side of the markets. In the transfer zone, 6 units per acre is assumed as the maximum density. In this case, the supply will be 2548 DRC's. The demand of DRC's is depended on the demand for high density housing. The real estate professionals believe that there is a housing shortage in the town, however, generally single-family house units are preferred in the town and the demand for town houses is in the coastal area.

Therefore, the result of the implementation of the program was 200 townhouses were built with 128 DRC's if they are built in the R20 sections of the transfer zone, and 152 DRC's if they are built in the R30 zones. Density bonuses for single family dwellings were also included. The potential that DRC's for single-family houses was estimated by the sensitivity analysis and it is assumed that 100-150 building permits are issued for new homes each year (McGilvray Anderson and West, 1985, p.35). Therefore, 3000 dwelling units would be constructed only if this rate were constant. 50% of construction will be in the transfer zone. Table 4.1 shows the how many DRC's would actually be transferred. If these assumptions are correct, the program would not protect all the resources of the coastal ponds area.

Table 4.1 Development Right Use As A Function of the Percentage of New Homes

PERCENTAGE OF NEW HOMES			NO.OF HOUSES ALLOWED BY ZONING	NO.OF HOUSES ALLOWED BY ZONING	NO. OF DRC'S USED	NO. OF DRC'S USED
INVOLVED IN TDR PROGRAMS	TOTAL NUMBER OF HOUSES	APPROXIMATE ACREAGE	R20	R30	R20	R30
10	300	75	163	108	137	192
20	600	150	326	217	274	383
30	900	225	490	326	410	574
40	1200	300	653	435	547	765
50	1500	375	816	544	684	956

Source: McGilvray Anderson and West (1985), p.36.

EVALUATION OF THE PROGRAM

In any TDR program the environmental objectives, the marketability of the DRC's and the equally distribution of costs and benefits effects the successibility of the program. McGilvray, Anderson and West (1985) evaluates the South Kingstowns TDR program by this way.

They suggested that the marketability of development rights depends on the willingness of the preservation and transfer zone landowners to use DRC's. Therefore, the supply of development rights (as mentioned before) depends on the economic situation of holders of development rights, their expectations of present and future demand of their property. Time preference and motivation for landownership also effects the supply of unused development rights.

On the other hand, the demand for development rights depends on the development industry. There is enough supply of land for development in South Kingstown. Additionally, it does not constitute a unique housing market that developers would elect to build in South Kingstown at any cost. Also, there was limited market for non resort town house development. Therefore, there

was a low demand for DRC's. This marketability could be provided in number of ways:

1- The good information affect the supply and demand of development rights. A bad information system would cause a low demand for DRC's. (The information system was not good in South Kingstown).

2- Agencies or organizations such as land trust could purchase the DRC's. This provides the DRC's more valuable. Also this could effect both supply and demand for DRC's.

3- The demand for development rights will change as the land becomes scarce. Therefore, the potential marketability of RDC's is low by the tears of 1985.

The other aspect in evaluating the TDR program is the central equity question. McGilvray, Anderson and West believes that, theoretically any TDR program could provide the equally distribution of costs and benefits among preservation and transfer zone landowners. Therefore, they believe that in South Kingstown, transfer zone landowners will be unfairly burdened.

4.2 HISTORICAL SITES AND LANDMARK PRESERVATION PROGRAMS

4.2.1 NEW YORK CITY

New York City is said to be a laboratory for TDR implementations. Because it has many TDR implementation programs and proposals. Therefore, in the history of TDR New York City becomes most important city for to develop the technique.

Landmark Preservation, 1968:

New York City Planning Commission has implemented its first major development rights transfer regulation for a specific class of structures in 1968. With this regulation, the owner of a landmark was permitted to transfer his authorized but unused floor area development rights to continuos or adjacent parcels. Therefore a developer can built a skyscraper with additional density obtained by the transferring air rights through the zoning lot merger. A city block is the limit of a zoning lot. 'Individual parcels on the block may be merged into a zoning lot by a declaration of single-lot status filed by parties with interest in the adjacent parcels on the block. Structures with unused floor area ratio (FAR) may use these -as of right- zoning lot mergers to transfer unused FAR to vacant parcels in the same block for new development' (Roddewig and Ingram, 1987, p.8). In the mid of 1969, 285 structures had been designated as landmarks. "This is markedly successful program of preservation had been achieved without resort to the tax relief possible under the preservation laws"(Richards, 1986, p.447).

In the 1961 Resolution, as mentioned before, TDR was permitted in the continuos parcels with the same ownership but this has the future of impossibility since all the lots continuos to a landmark were already fully developed. The neighboring buildings were themselves landmarks and the planners had elected to preserve the state of underdevelopment in the immediate vicinity of the landmark. In that time the basic transfer requirement that the lots be undercommon ownership imposed an additional barrier.

Therefore, in the 1968 amendment, these burdens had tried to pushed up. They solved the problems by establishing a new definition of adjacent transferee lots across the street or intersection from the landmark for transferor landmarks. Development rights were calculated on the basis of a one-to-one transfer of unused FAR from the landmark to the receiving site.

Also it was permitted transfers between separately owned zoning lots. However, there was a limit that it was permitted only 20% increase in its original floor area. A new law was introduced at that time, that is, landmark owner could sell his unused development rights to several adjacent owners, not more than one. Therefore, the excess development rights of the landmark's zoning lot were forever reduced by the amount of rights sold, and notice of the restrictions upon further development had to be filed in the appropriate land records office.

The process of TDR program was started with the application of landowners to City Planning Commission, (including not only a site plan of the original landmark and the transferee plot, but also a plan for preservation and maintenance of the land mark). Thereafter, the Landmark Preservation Commission proposed transfer, and commented on the site plan for the landmark. "The Planning Commission may then condition its approval of the TDR transaction upon an estimate of maintenance costs to be funded by the transfer process; the Commission may also make recommendations to the builder concerning design modifications of the proposed building to insure comparability with the landmark"(Richards, 1986, p.448).

Grand Central Terminal Transfers, 1969.

The New York plan determines to build over the terminal (as designated landmark) a 55 story office building which would bring 12000 more workers into the area. The terminal utilized only FAR 1.5 in an envelope with a permitted maximum FAR of 18 (20% plaza bonus).

New York Central Railroad proposed to construct a skyscraper with 2 million square feet of floor space above the Terminal in 1967. After one year Penn Central Railroad leased these unused space to a private developer for 50

years. However, this situation created many problems in the area. (Richard, 1986, p.450).

The terminal presented a situation where a massive amount of development rights were available to be transferred only within an area but all the adjacent lots were already intensely developed. They thought that the control of the underground railroad right-of-way between two sites meets the requirement of a chain of common ownership. Therefore, the adjacent lot principle of the TDR program was also amended to assist with preservation in the South Street Seaport District. (Roddewig and Ingram, 1987, p.8). So, the 1968 amendment could not solve this problem.

The amendment introduced in October 1969 by the Planning Commission defined adjacent sites in the highest density commercial districts to include"a lot...which is across a street and opposite to another lot or lots which except for the intervention of street or street intersections form a series extending to the lot occupied by the landmark building all such lots shall be in the same ownership"(Rose, 1970, p.24).

Therefore, this amendment allowed the Penn Central to distribute the Terminals excess development rights among the properties up Park Avenue from 42 nd to 51st streets as long as the first link in the chain was across the street from the landmark, (according the zoning resolution there are two cases:"a) that the permitted transfer of floor area or minor variations in the front, height and setback regulations will not unduly increase the bulk of any new development, density of population or intensity of use in any block or nearby blocs, b) that the required program for continuing maintenance will result in the preservation of the landmarks"(Richards, 1986, p.448). Therefore, with this amendment DR's could be not to nearby adjacent parcels, jumped over entire city blocks. This amendment revoked the 20% restrictions with regard to

the highest density commercial districts. Therefore, the transfer of all the unused development rights to one thus permitted.

The permission could caused the congestion of transit facilities in the grand central area and its the direct opposite of rational planning.

Although the Terminal wanted to preserve with TDR technique , it also preserved by the New York Landmarks Preservation Law.

Public Landmarks ,1970:

One quarter of New York's designated landmarks were publicly owned. However, the original rights transfer was applied only to privately-owned landmarks. (Transfers from publicly owned landmarks, however could conceivably be made under the 1961 resolution definition of zoning lot if the landmark side was continuos to the developer's parcel and was under his control by way air rights lease.)

In the fall of 1969 an owner of land adjacent to the Appellate Division Courthouse which was owned by public proposed to construct an office tower with 500000 square feet (applicable FAR limitations for the district permitted the construction of only 400000 sq.ft). The city decided to lease the Courthouse for 99 years to the developer to gain some revenue. The developer of adjacent lot to the courthouse leased it 50 years with a 25 year renewal option. Than, he subleased it back to the city reserving 100000 square feet of floor area for his project. Therefore, the city gained a total for the lease term of $ 3.45 million. However, none of the money was market for maintenance of the courthouse or implement of the courthouse or improvement of the transit systems.

In 1970 amendment has announced, "that in the case of landmark sites owned by the City, State or Federal government, TDR's shall be contingent upon provision by the applicant of a major improvement of the public pedestrian

circulation of transportation system in the area"(Richards, 1986, p.453). Therefore, public benefits were to be extracted as the price of transfer by levying upon the private builder who would utilize the DR's in future. Commission have explained "the additional requirement in the case of DR's transfers from public landmarks was an attempt to recognize the additional obligations borne by public in supporting its own landmarks. Transfers of air rights over public landmarks must therefore accommodate the notion of private transferee developer providing a major improvement in the public pedestrian circulation or transportation system in the area. Developments incorporating formerly publicly owned air rights are therefore held to a higher amenity standard than these utilizing privately owned and transferred air rights" (Richards , 1986, p.443)

1971 TRANSFERS OF DEVELOPMENT RIGHTS

Until the year 1970, transfer of unused development potential was used only in residential development or enlargements. However, provision of high rise apartments had the advantages of the tax.

Therefore, the Planning Commissions of New York City decided a zoning amendment at the end of 1970. This would have allowed builders of high rise apartments to exceed their restrictions in floor area ratio by purchasing the development rights of smaller townhouses which are located in the east-west midblocks between the great North-south avenues. After that time, the Planning Commission revised its proposal amendment in November 1970.

This amendment allows builders of high rise apartments to exceed their FAR restrictions by purchasing and utilizing the unused DR's of smaller townhouses. This unused DR's from the buildings in the midblock R-8 districts to R-10 lots fronting the owners where R-8 and R-10 districts were located with

in the same city block. But the builder of the high rise might not exceed his FAR limit by more than 20% of the transferee parcels original FAR limitation.

Additionally, the developer should increase the amount of the open plaza space by as much as he increased the floor space of his building. This was valid for only office developments using the unused development rights. But this was not valid for the residential development in the city. The Planning Commission's objective were to stop further redevelopment of the mid blocks by keeping them at their present scale and to increase the potent number of dwelling units in new buildings on the avenue, although the first priority seems to have been new construction. (Richards, 1986, p.497.)

Public Institution, 1971.

Planning Commission proposed to allow public institution such as hospitals to increase their size by permitting DR's transfer from smaller, outlying buildings. The New York Planning Commission decided that 1971 amendment would not alter the total density permitted an institution but would permit greater flexibility in its development. Than, the Local Community Planning Board suggested that it would remove light and air available to nearby apartments.

Private Park Transfers,1972.

Commission proposed to replace the Tudor City Parks, two small, private oases on 42nd Street near First Avenue, with two new luxury apartment towers. The purpose of this proposal was to promote the most desirable use of land in this area and thus to conserve the value of land and protect the City's tax revenues.

The Planning Commission wanted to bring together the desires of builder and local residents. Therefore, they proposed a Special Park Districts

which the unused development rights of privately-owned open spaces that might be transferred to lots within the CBD. The transferee lots was limited to a 10% average on their normal floor area ratios and the transferor lots would be limited to park related passive recreation for the general public. But the Court stated that the transfer of development right was unconstitutional for several reasons: 'The development rights of the park were not nullified by the city's action . In an attempt to preserve the rights they were severed from the real property and made transferable to another section of the mid-Manhattan in the city but particular parcel or place. There was this created floating development rights, utterly unusable until they could be attached to some accommodating real property available by happenstance or prior ownership or by grant, purchase or device and subject to contingent approvals of administrative agencies. In such case, the development rights disembodied abstractions or man's ingenuity, float in a limbo until restored to reality by reattachment tangible real property' (Fred, p. 478).

Museums, Theaters and Churches,1982.

In 1982, new development rights transfer variations began to be discussed in New York City. But the Manhattan midtown zoning in 1982, didn't go so far as to incorporate the suggestion that theaters and landmarks owned or held by not-for-profit groups, be permitted to sell floating development rights district wide.

Firehouses and Police Stations,1984.

Firehouses development rights(by reason of now being within a single block and continuos to the landmarked police station) could also be transferred diagonally over the intersection of Fronts Street and Old Slip.

Also City spire with a 72 story project of New York's tallest residential building is important. The developer agreed to contribute $ 3 million to the City

Opera and $ 3 million to the City Ballet in consideration for the development rights transferred , the 20% FAR bonus available for renovation of landmarked theaters in the new Theater District, the developer agreed to spend a further $5.5 million in rehabilitation of the City Center Theater.

But finally, landmark TDR in NYC has benefited very few landmarks, and can not be relied upon to provide preservation funds for any significant portion of them without development of the city to unbearable density levels.

TDR mechanism in New York City is still in action, but, there have been only a dozen transfers from the nearly 700 landmark structures in the city. Because, developers have easier and so more attractive ways to gains density. The first way for the developers to gain additional density is the zoning lot merger. It is as of right and is not subject to a process of review and approval. The other way for developers is the change in zoning to a higher density permission. Therefore, if these ways do not occur, the developer chooses the TDR program.

Additionally, the TDR program in New York City (NYC) was limited to individual landmarks and was not extended to properties within designated historical districts. The New York City Landmarks Preservation Commission thought that the extension of TDR to the designated districts could create an oversupply of development rights. This was true for the market with low demand and the commission calculated a current supply of 20 million square feet of potential development rights from all nearly designated landmarks.

Therefore, the program was extended to one historical district: The South Street Seaport Area through a special zoning amendment which covers the preservation area and a redevelopment area. 'A consortium of financial institutions agreed to accept development rights in exchange for writing off delinquent mortgages enabling the owners of buildings in the Seaport District to qualify for loans to renovate their properties. The commercial banks were

permitted to held the development rights in a TDR bank and to sell the rights for new construction . The TDR mechanism was the catalyst for reinvestment in the historical buildings of the South Street Seaport area. Several major office buildings have been constructed with TDR's from the bank' (Roddewig and Ingram, 1987, p.9).

4.3 LAND USE REGULATIONS

4.3.1 SEATLE

PROBLEMS OF THE AREA

In Seattle there was a shortage of low income housing and there was damages of historical buildings.

PROPOSALS TO SOLVE THE PROBLEMS

A new downtown plan with four TDR components has adopted in 1985. The objectives of plan were; to retain and rehabilitate low income housing in the downtown, to preserve Seattle landmarks, to encourage compatible in-fill development in historic districts and to retain varied building scale in high density office areas.

IMPLEMANTATION OF THE TDR TECHNIQUE

Adoption of TDR is not voluntary, it is by downzoning and limitations on density in the office and retail core. Under the new plan FAR is 10 for the office core and with the bonuses it permits to achieve 20 FAR. The increase from 10 to 20 is like the following way; from 10 to 13, provision of daycare, parks, sculptured building tops or retail atriums or from the transfer of unused development rights from designated Seattle landmarks.

From 13 to 15, affordable housing bonuses and TDRs from low income housing or landmarks. From 15 to 20, only through the low income housing TDR or through bonuses that involves construction of low and moderate income housing rehabilitation or vacant residential buildings, or density bonuses for the provision of low income housing.

There was a limitation of the TDR program. TDR's can be transferred from landmarks located within office, retail or mixed commercial districts in the downtown core. Within retail districts development rights can be transferred only on the same block. Sending site limitations about office can be transfer TDR only difference between base FAR and the FAR of existing structure. In retail mixed use and in residential districts transfers are generally limited to the difference between the FAR of the landmark structure and an FAR of 6.

For the landmark transfers, the Seattle Department of Community Development has established a guidelines which require certificates of approval from the Seattle Landmark Preservation Board. This approval requires the restoration and adoption of a plan for long term preservation of the landmark structure.

Roddewig and Ingram (1987) continue with an example: Let say a receiving lot owner applies for development project review a schematic drowing that shows the proposed rehabilitation of the landmark buildings must be included in the application. Also at the same time, the sending lot owner must apply for a certificate of approval for the proposed rehabilitation or restoration. The fund or restoration is coming from the sale of development rights. New building in the receiving site can not be built until the landmark is rehabilitated. If landmark does not need restoration, than the sale of development rights are not regulated by the city. So, the owners of the sending and receiving sites must file a TDR agreement.

RESULTS OF THE IMPLEMENTATION

As a result, no transfers from landmark did not occur between the years of 1985 to 1987. However a number of transfers from low income housing have occurred. This was created by the design of the program. 13 FAR can be used as general bonuses. From 13 to 20 FAR with housing bonuses without compicating the process by negotiating a landmark TDR purchase and submitting to review and agreements that delay and add expense to the development process. Apparently low income housing groups have been competing to sell their development rights depressing the price well below the protected price. Developers could pay up to $25 per square foot for additional density according to calculations, however, TDR's from low income housing have been selling only $9 per square foot. This decrease of price, brings the city development proposes. (Roddewig and Ingram, 1987, p.10-11).

Other TDR program implemantations could be seen on appendix g of this thesis.

CHAPTER 5

TDR IN TURKISH PLANNING SYSTEM

5.1 PLANNING AND POLITICAL SYSTEMS OF TÜRKIYE

In general, the concept of property is hypothesed as full rights of profit maximization of landowners from their property. In urban environment this maximization means speculative gains from urban land. The pressure on public investments and speculative expectations on empty urban land are said to be for the same purpose. In Turkey, the aim of private property landowners and the aim of government on city planning are not the same and are always in conflicts.

Therefore, there have been two opposite views on this subject since 1920's.

a) The defenders of private property ownership

b) The defenders of government intervention.

THE DEFENDERS OF PRIVATE PROPERTY

The defenders of private property agree that the type of land use on a piece of urban land could be only determined by the type of land use which provides maximum profit for this piece of urban land.

For example, high dense commercial land use could be located in a city's central business district, or in city center which has the maximum accessibility.

Because they could pay higher rents and they could reach and serve more people. Or many new buildings in city center is rebuilt to obtain more number of floors, for maximum profit.

The belief of defenders of private property landholdings would be true for the city when government bureaucracy and technocracy could not solve the problems for urban and rural environment.

DEFENDERS OF GOVERNMENT INTERVENTION

The defenders of government policy on urban land believe that private property landholdings have negative effects on shaping of urban land. Private property holders' aim which is to maximize their profit, does not maximize the public interest. Short run profit on urban land conflicts with long run benefits for whole public. Market function does not serve for all types of income groups of any city. Social infrastructure could not be provided by market function. Additionally, they agree that urban land is a scarce resource, therefore, landowners has the monopoly on urban land. By this way, liberal economic system which requires competitive market environment could not function in landholdings, in fact, there must be government intervention on the liberal economic system. On the other hand, public investments on urban land has enormous effect on shaping cities which causes conflicts on transferring rents which is created by public investments to the private property holders. Moreover they believe that any true decision on physical land use in short run could not be true the exact land use decision for long run. Therefore, the decisions on city planning have to be taken for a long period and this could not be provided by market mechanism.

As a result, Türkiye has the 'free enterprise-mixed economic system' which actually create 'private property weighted city planning'. In other words, the logic of private property landholdings effects the development of cities in Türkiye. Therefore, present city planning system could not function efficiently

and there are always conflicts between the public and the government policy on city planning:

Land property affects the location decision in city planning and in these decisions main purposes generally do not taken into account as it must be, indeed, the conflicts between the decisions and property holdings could be minimized. For example the location of primary school is chosen according to land ownership pattern (according to public owned land) but not according to the accessibility principle in city plans. Moreover, in any plan there will be always conflicts between the planning decision and private property holders. The pressure of private property holders can not be predicted before making a planning decision and planning principle can not accept all the pressure that comes from private property holders. hence there would be always disagreement between these two types of interests. For example, the decision of historical site preservation could not be accepted by private holders of this site. Because they hope profits from their land.

5.1.1 RESTRICTIONS ON PROPERTY RIGHTS

The concept of property and restrictions on it has had many different stages and definitions in the history of Türkiye. The present legislation on property restriction starts with the 1995 constitution. In 35th substance of new constitution, property right is defined as 'everyone has property rights and these rights could only be restricted for public interest. The use of property rights could not be contrary to public interest'. Hence, the private property rights are conserved by this law and restricted for public interest. In the 46th substance of this constitution, the expropriation was defined. Government could expropriate private properties by public interest with paying in advance its actual value which could be determined by law and it must be real market value. Therefore, the constitution agree with the free enterprise market system, it conserved the

property rights in a market environment. The decision of Main Court has been defended the same argument.

Main restrictions on private property rights was defined in 3194 numbered Development Law (9 November 1985). The degree and type of restrictions by this law depends on the balance between public interest and private property holdings. In the point of law, Civil Law determines the property rights and 3194 numbered law defines the restrictions on private property rights. Urban parcellation is prohibited by 3194 numbered Development Law according to plan decisions but Civil Law could accept parcellation by shareholdings.

Additionally, the system of private property has been accepted socially, and a concept of title-deed property has been used as full rights.

As a result, the concept of private property and its rights has been accepted politically and socially in Türkiye.

The ideas of defenders of government intervention could not be possible in this market system. If there has to be full restrictions on property rights in whole urban environment, all urban land must be held by government which is impossible. However, there were experiences on this subject by large-area expropriation in Ankara. Law of Expropriation no. 583 of 15th March 1925 was determined by the government. By this law the municipality of Ankara had expropriated 4 million m2 land in Yenişehir, to provide healthy development of the city of Ankara. However, this act is not suitable for the present system of Türkiye, and the land which was expropriated by municipality had been transferred to private landowners.

After this experience in 1948, Yenimahalle Municipality had expropriate large amount of land and had transferred land from government to provide housing fore low income groups. The plan was to provide housing for low

income groups. the plan was realized quickly but residential area created by Yenimahalle Municipality had sod to middle income groups.

The other experience to solve the conflicts between private property holdings and planning decisions had been in 1969 by 1164 numbered law. This law has provided to establish a Land Office (Arsa Ofisi) to create urban land stock for government. Land Office was given the competence of providing land for residential, industry, tourism, public service and controlling property market and having a land stock. Moreover, the expropriation competence was given to Land Office. However, the office could not function effectively, it could not solve the problem of private property and city planning dualism. It was not conform to present market system of country and it was not supported by the politicians.

Batıkent-Ankara is another example of providing public land stock in urban environment. In 1974 the municipality of Ankara had expropriated 1034 has. land for 300000 population. the purpose was to provide large residential area for low income groups hence the squatter areas would be resist. the project has been completed but the purpose of the project could not be reached effectively. the pre-determined density was not implemented, indeed high density areas were created. generally, middle income groups had the houses and low income groups are the tenants in Batıkent.

As a result, whole system of country does not conforms to these experiences and planning systems and tools does not fit to present system of Türkiye.

The conflicts between private property and city planning could only be prevented by expropriation of whole urban land which is impossible in this socio-economic system. In socialists countries lands are transferred to private properties and lands are held by public only in East-African Countries like

Somalia and Tanzania because of their traditions. On the other hand capitalist countries have chosen the way of urban lands by expropriation.

Even if government is the unique owner of urban land, it could not use it efficiently. On the other hand, city planning could not function with market mechanism. Therefore, the middle-mix system in planning has to be determined for effective land use planning.

5.1.2 FINANCIAL DEFICIENCIES OF THE PLANNING SYSTEM

The problems of the planning institution could be divided into two parts; the political system and the finance system of government. The local authorities and the central authorities of Türkiye are in both competence for planning institution. Central planning authority has finance problems and it could not provide enough finance for planning institution. Local authorities (municipalities) generally have the obligation of social and physical infrastructures investments which would serve for whole citizens of a city and even serve to shape the city. these investments require a large mount of money and income of the municipalities is not enough for the public investments. The municipality income comes from the government and from local direct taxes. The portion that is taken from government has changed since 1920's. Today 6% of total-budget tax revenues is given to municipalities (Table 2.3). The direct municipality tax revenues comes from the following:

A- Property tax

1- Building tax

2- Land Tax

3- Common Building and Land Tax

B- Declaration and advertisement tax

C- Entertainment Tax

D- Communication Tax

E- Consumption of Electric and Natural Gas Tax

F- Fire Insurance Tax

G- User Charges

The ratio of municipality revenues to whole public revenues determines whether the municipality's income is enough or not. This ratio, generally has been under 8-10% and denotes the income of municipalities; not enough especially in the case of rapid urbanization that Türkiye is faced with. The ratio was 8% in 1933, and it decreased to 5 % during II World War, after that period the ratio had increased regularly and reached 15 % in 1957-1958. Then it fell again to 6% in 1970's (İ.Tekeli, İ Ortaylı ' Türkiye'de Belediyeciliğin Evrimi', Ankara, 1978).

Türkiye has been in the continuos process of urbanization since 1935, the urban population increased from 25% to 60%. However, the income of municipalities did not increase. The ratio of municipality income to whole public revenues must be 17-18 % at this time (Akçura, 1982, p. 39)

Therefore, the municipalities revenues for city planning investments is not enough and it could not be always determined before any investment. The income resources have to be known before any project implementation.

All this problems of municipalities comes from the idea of central authorization, today local authorities is not autonomous financially, and

politically. Different financial tools has to be determined for efficient city planning and healthy developments of rural and city's environments.

Table 5.1 Municipality Income From Central Authorities General Tax Revenues.

YEARS	TAX RATIO (MILLION TL)	PERCENTAGE OF TOTAL TAX REVENUES (%)
1978	9679	3.9
1980	30115	4.0
1982	69408	5.4
1984	162989	6.8
1986	501857	8.4
1988	1247165	8.8
1990	4087140	9.0

Source: Öncel, 1992, p. 140.

PLANNING AUTHORIZATION OF TÜRKİYE

Planning authorization of Türkiye had been changed since the appearance of urban planning need. The central government had the planning authorization all over the country before the law of Development No. 3194 in 1985. With this act, planning authorization was transferred widely to local authorities, however, central government of the competence of plan making and controlling still continuos. Therefore , the division of the competence about plan making and controlling is as fallow:

THE MINISTRY OF DEVELOPMENT

The law of Ministry of Development gives wide power of planning in Türkiye even if though most of these qualifications were given to local authorities by the law of 3194. One reason is that local authorities do not have sufficient funds and qualified technical personnel to prepare development plans in their districts. Secondly the administration mechanism of Türkiye is

dependent generally on the central body. The ministry of Development determines the qualifications of the personnel that would prepare the development plans.[1] Therefore, the Ministry makes the necessary arrangements concerning these personnel.

İLLER BANKASI (BANK OF PROVINCES)

İller Bankası is related with the Ministry Development and with the municipalities. It prepares the development plans of small municipalities or villages. Additionally, it provides funds to municipalities to make their own development plans. The bank makes the plans without any cost for the municipalities that prepare its own development plans for the first time.

The Bank makes the plans either by itself or by making adjudication to private city planners.

MUNICIPALITIES

Usually it is only the Municipalities that have sufficient funds and qualified personnel that could prepare their own development plan. However, many municipalities in Türkiye do not have these qualifications, they therefore, delicate this power to the İller Bankası or to the private city planners.

THE MINISTRY OF TOURISM

The law of Tourism Encouragement No: 2634 in 1982, empowers the Ministry of Tourism of plan making and approving. The 1/1000 scaled plans and plan reports of tourism areas are approved by the Ministry. On the other hand 1/5000 scaled plans is approved by the Development.

[1] This competence was given to the Ministry by the law of 3194, Official Gazette 2.11.1985, No. 18916.

THE MINISTRY OF AGRICULTURE, FORESTRY AND RURAL AFFAIRS

Currently there is a trend of decentralization among authorities in Türkiye. Due to this trend, planning are decentralized to local authorities and different central authorities like the Ministry of Agriculture Forests and rural affairs. The Law of Conservation of National Parks gives the powers of plan making to this Ministry in the areas of National Parks. Additionally plan making of the areas that is determined as 'natural park' 'natural monument' and 'conservation of natural area' has given to the Ministry.

5.1.3 THE EFFECTS OF RECENT ECONOMIC AND POLITICAL TRENDS ON URBAN PLANNING (1980-1995)

Türkiye's political system has changed very rapidly since 1980 after the military intervention. Between 1980 and 1983 Türkiye tried to establish new democratic system with a new constitution.

By these years, privatization and new liberal economic system were started by Thatcher Administration in England and by Reagan Administration in United States of America. These trends in the world effected Türkiye in a wide range after 1983 elections. Therefore, Türkiye had a new face with democratic political system and liberal economic system.

The main purpose of governments which was established by the elections were to encourage privatization and the free enterprise market system with all its institutions all over the country. Therefore, some goods that were not available before 1980's, has entered the market.

Governments gave permission to export and import of goods which were restricted before 1980's. A free market system was established through the country with a decreasing intervention of government to market.

An example can be given from Bosphorus Bridge. The share of government on Bosphorus Bridge was reduced with the distribution shares of the Bridge with 'Income-Portion-Coupons'. Same implementations were functioned for Keban Dam.

As a result of these changes on political and economic system, speculation on urban and rural land increased enormously so that present planning system could not function effectively. Additionally, there was second home boom in coastal areas of the country.

In 1985, Development Law 3194 was introduced. Some of the central authority powers of the city planning was transferred to local authorities by the law. The articles of this law determined not to establish new urban policies indeed it is determined the development permissions with a static point of view.

'Toplu Konut İdaresi' was established to provide credits to cooperatives and to create 'residential' areas. The main purpose of the institution was to provide residential areas to low and middle income groups. However, it had established houses for middle and high income groups. The credits which were given to cooperatives was a good decision but the institution had to be responsible for their structures. By these years, the houses which were provided by the banks was for high income groups instead of low and middle income groups. Hence, local authorities and public institutions which were responsible for providing housing did not function according to their purposes indeed they created rents on urban and rural lands.

In 1987, powers given to local authorities in 1985 were transferred again back to central authority. Additionally, the conflicts of powers and the problems of coordination has increased by the law of Municipality no. 3030.

As a result, the 1983-1992 period was for the distribution of competence about local and central authorities, however, it was not for creation of urban policies. the basic result of these developments on city planning system was the government philosophy of 'lassies-faire, laissez passer'.

After 1991 coalition governments had a different policies. A New Import and Export regime program was established. There was a huge increase of import and export for every goods and all restrictions in the commercial sector were removed. The market rules were established according to free market mechanism. The efforts to enter European Economic Community were intensified, new rules and regulations were made to facilitate enter European Economic market. Privatization was supported by the coalition administration. Public Economic Institutions (KIT) were to be privatized to move towards a more liberal economic system. Especially after 1993, public lands and properties have started to privatize quickly even it has negative and positive results.

These developments require new planning system and new present planning tools to achieve positive land use goals. However, system of urban and rural planning could not provide a healthy development of cities and towns. Because, most of the urban and rural lands and / or no properties would be in private hand. Therefore, planning system has to be changed according to the rules of liberal economic system to provide public benefit. (New planning system should function in liberal free economic system providing public benefit.

The planning process of anyone capitalist country. Therefore, planning system in Türkiye needs new arrangements and tools, with only for the changing conditions in the overall context of economy and political

developments, but to be self sufficient in generating funds to achieve its own goals.

Balamir (1980) suggest that present land use control methods have to take into account existing all the channels of control together to establish a new planning mechanism. These existing powers of control are:

* The rules and economic regulations which controls directly rents of properties

* The Property tax system

* The direction of credits and other finance supplies to the process of property development and use

* Infrastructure and public services

* Allocation of Development rights

Development rights is the only tool of present planning system. He suggests that all items need to complement each other in an overall system together to achieve an effective control mechanism on properties. Additionally, economic relationships of properties are the decisive factors in the planning process. Therefore, a new planning system has to depend on economic tools and processes. From this point of view TDR is a most appropriate device for Turkish Planning System.

5.2 THE TURKISH PROPERTY SYSTEM AND TDR

Before an examination of the TDR technique in GIS environment, a review of the present situation of Turkish property system with its restrictions on property rights is necessary. Then, where a TDR program might be applied in urban problems is discussed. Legal applications of the TDR program in

Turkiye is also a crutial aspect of this approach and for this reason, the present legislation is examined to establish the possibility of accommodating TDR technique within the existing legal framework.

Certain rights can not be restricted, over property values in the American property systemand the transfer of development right technique is based on this principle. Naturally, these rights were restricted in the history of American property system, as in the cases of zoning regulations and police power regulations which restrict these rights by the development plans. However, planners and politicians have decided that these regulations were not effective planning tools. Therefore, they were inclined to adopt the Transfer of Development Rights as planning tool and implemented the techniqe in various urban and rural areas successfully.

In Turkiye, property rights system is different than the American system. Development rights on properties can be restricted, distributed and determined by the development plans. Development right is usually determined and indicated by the ratio of ground floor area to site area (TAKS) and the ratio of total building area to site area (KAKS) in development plans.

Development right on the properties that are restricted by plans are based on the notion of public benefit. The development right of the property can be used if and only if it does not contradict with public benefit. Development plans and applications are made with the aim of public benefit and they are never defined as private and corporate rights.

Development rights that are restricted by plans in Turkiye do not have characteristics of immunity against restrictions like the American system. On the contrary, even the development rights are not restricted according to the plans that have application rights if it contradicts with the public benefit principle. If

transfer of development rights technique is taken as a solution to land use problems in Türkiye, support systems should be created in a different manner.

Public benefit concept is used for many years in Turkey and applied by legal support i.e. by development laws. Also the transfer of development right should be based on the concept of public benefit and should be supported by legal constraints, since it is difficult to adapt a society to a new and complex concept. In order to apply it, some adjustments in law would be necessary. Since it is hard for the authorized and politicians to know all the details about a new understanding, a different form can be created instead of the actual one. Consequently, as a first step it is necessary to base transfer of development right on the public benefit concept.

5.2.1 RESTRICTIONS ON PROPERTY RIGHTS IN TURKIYE

The restrictions on property rights evolved in the history of planning system of Türkiye are:

1- Construction prohibitions:

The construction prohibitions in Turkey are in three forms:

a- Temporary construction prohibitions: This is based on the 642 numbered law made in 1925 which is the variant of 1882 construction law. At that time constructions were prohibited for one year for more than 150 burned buildings until a new development plan was made.

Later, by the General Health Law 264.th article, construction could be prohibited for six months for buildings that are damaged partially or totally by natural events or wars.

b-Construction prohibition for the purposes of implementing development plans: This is divided into two parts in itself. Prohibitions are either inside or outside the borders of a settlement area.

Construction prohibitions inside settlement areas are related with the public areas and development zones of the city. According to the article13.th of development law, construction permission is given if and only if there is infrastructure available and if the land is subdividied legally.

In the new law, there is no statement concerning construction prohibition in areas outside the settlement areas. Thus implication should be made according to the law for the construction outside the borders of settlement areas.

c-Other construction prohibitions: These kinds of prohibitions can be accountant in five parts:

i)Construction prohibition near historical and cultural areas: According to the 9.th article of the Conservation Law (1983), it is prohibited to make any kind of physical and human interference to the immovable cultural and historical areas. Besides, construction, reparation, boring and demolishing are included in human and physical interference. In addition, the 16th article of the same law prohibits construction in the cultural and natural aeros that should be conserved, without permission.

With the 14.th article of the Parks Law, if there is not an obligation, it is impossible to make and manage any establishment in the open areas.

ii)Construction prohibition in Bosphorus area: The 2960 numbered Bosphorus law made in 1983 brought several construction prohibition in that area. But the 3194 numbered law in 1985 changed this article and gave

permission for the construction, which was omitted afterwards since coasts belong to state.

iii) Construction prohibitions at coasts: In 1984, 3086 Law of Coastal Areas prohibited construction 10 meters. from the coast line. The 3621 numbered law (1990) changed this to 20 meters in areas that have development plan; and to 50 meters in the municipalities and villages that have no development plans and to 100 meters within adjacent areas of municipalities that do not have a development plan. But in touristic recreation areas public can uses exempted from such restrictions.

iv)Construction prohibition in environment conservation areas: In 1988 with the decision that is made by the Council of Ministers it is prohibited to construct buildings that pollute the environment.

v)Construction prohibitions in the highways and railways: With the 2913 numbered traffic (1983) roads are divided as roads inside and outside the borders of municipality. It is prohibited in the law to make constructions closer than 50m. from the road edges, outside the municipality borders, but no prohibition exist within the municipality borders.

3- Zoning

Another kind of restriction on properties is zoning. Zoning is a tool for planning that determines the use of urban land. Besides it is used to direct and control the development of urban land. The source of authority of zoning comes from laws and directory decisions. This tool is used both for public and private use but mostly to control the private use.

Zoning is divided into three groups, these are use, zoning height zoning and density zoning. This is based on Civil Law's 661 article which requires a person that is one should not give harm to his neighborhood while using his

property. In height zoning, rules are made by Bayındırlık ve Iskan Bakanligi for municipalities with the 44.th sentence of the development law. In height zoning, three kinds of tools are used which are; the determination of the smallest parcels area, the limitation of dimensions of parcels and control of relations between the parcel and building.

In Turkey the legal supports of zoning are dispersed in different laws and regulations.

Another property of development right different from other rights is that it can be seen and controlled by public. Thus, the restrictions and definitions of the plans should cover public benefit concept. Otherwise unfair distribution of rights can make people resist to decisions of the plan.

5.2.2 TDR IN TURKISH LAWS

In the existing laws and regulations in Turkey, the concept of TDR is not observed. But there are some restrictions of development rights and expropriation.

a) There is a regulation for the exchanging of property values in cultural and natural site areas with government properties in the 20427 numbered law made in 8 Feb. 1990. This regulation is made with the base of 2863 numbered law. Protection of Cultural and Natural Value laws are expanded with the addition of 3386 numbered laws 15/f sentence. The 4th sentence of this regulation is about the characteristics of properties.

By this regulation government properties are exchanged with private properties. But it is a difficult because of its application and restrictions. Some difficulties prevail again the case of expropriation.

b) 18th sentence applications: As known in the 18th sentence applications 35% of the land is taken when a development plan is applied on the cadastral plan.

c) 2981 numbered law that is applied to incongruous buildings was made in 1984. In this law permission of transfers of rights included.

With the decisions of plan, property owners in squatter areas could be entitled to another land in some other area. While the laws and regulations do not include TDR there is no law or regulation that restricts or prohibits a program like this. For the transfer of development right concept these laws should be organized again but it should be based on public benefit.

5.2.3 THE NEED FOR THE TDR TECHNIQUE

The restrictions of development rights on properties can not be applied properly in Turkey for many reasons. One of the reasons is the inadequate planning system. Most of these, come from political process. As a result of this, both the citizens and public workers have difficulties. A new understanding should be made for this.

For example, historical site areas identified by conservation law can not be protected properly, since the owner of the historical structure is prohibited to make any construction on his property and this causes losses for the people who are mostly in the low income group. Still, it is hard to prevent these people to undertake construction. In a situation like this, government should make expropriation.

Besides in Turkey there are other areas than historical buildings and sites, which need to be protected. These are generally small or large scale open areas. So, should the government make further expropriation?

Public authority and resources are not sufficient to protect every historical site or park by expropriation. So the TDR can be used as a new tool for this purpose.

Furthermore, it is not necessary that all the functions on properties are made by the government. By some changes on laws and with some methods these function could be transferred to the market. But this does not indicate the need to transfer all the functions to the market. The transfer of functions requires some regulation too.

5.2.4 TDR APPLICATION AREAS

There are five areas where the TDR might be applied in Turkey.

1- Protection of historical site areas: The problems arising from the protection of historical areas are collected in two groups. The first one arise from the scarcity of land in the choice of land while protection is made. The second is the restrictions made on the right of development of properties in the historical areas. The restrictions made on properties causes an unfair material and financial loss for property owners.

Besides, the unsolved protection decisions causes speculation on these lands and impossibility of application of plans. Especially in our big cities this problem gains more importance.

Right of property ownership is not a limitless one like other rights. But restrictions of rights made by plans on some parcels can be too much while rights given to other parcels can be more flexible. In such cases differences are created in development rights which cause more speculative pressure on property owners. Especially in city centers as development and renew is

intensive this speculative pressure is greater and less likely that protection decisions can not be applied.

In addition to this in a society where protection conscience is not strong it is impossible to solve the problems by a system of penalties to property owners.

At the some time the inefficient use of properties is possible. Even with the protection plan decisions effective usage is not brought to properties. In addition to this, the costs of maintenance of protected buildings are too high for the government.

As a result, up to now, in our country only a passive protection that is based on restrictions is seen. The main problem is to protect such historical values of a low income country.

Transfer of development rights can be a proposal for the solution. Since the loss of the property owner can be compensated by transferring the development rights. Besides, the loss of both the government and property owner can be avoided by this program.

Property owners who are restricted by plans can sell the development right certificate given to them, and if they want they will be able to use this right in other parcels. But here an important point is that the chosen transfer area need not be in a physical relation to receiving sites. The transfer area that will be determined and the protection area should have functional connections instead of a physical connection. Besides, especially in a country like Turkey, the number of development rights and density calculation in the transfer area should be made very carefully. A bank, controlled by government, should be established in order to create a market for the transfer of rights.

An important possibility seen in the application of the TDR is the usage of the sources of development rights bank or the funds that are supplied from some parts of the values of properties which can be used for the organization and maintenance of historical surroundings.

2- Protection of Agricultural Areas: For the protection of agricultural areas the sale and purchase of development rights is used in the USA. But it depends on the political choice of the period and costs high. It is still used in the USA but works only in some places. And in the period of elections politicians use this as a tool and make possible the sale and purchase of development rights (PDR).

Therefore, development right transfer can be used to protect good qualified agricultural land and to transfer it to future usage.

3-Protection of Ecological Values: In the protection of ecological values TDR can be used. In the first place the damage of this values should be prevented after construction, so the speculative pressure can be prevented, too.

4-Protection and Creation of Green Areas: It is hard to apply the TDR on green areas, especially on the ones in private ownership, in the development plans. The implementation of the 18.th sentence on unplanned areas is not sufficient. But also the creation of green areas which most of our big cities are in need of expropriation is practiced but its costs are high and the procedures seems complex from the point of ownership. So, instead of expropriation TDR is a better way.

5-Regulation and Control of Land Use: The planning problems are especially valid for our big cities and the problem in the distribution of ownership can be solved by TDR with market mechanism. But it is necessary to create a good market and establish a bank.

To give an example to show how a TDR program could be effective in controlling land use regulations, Dikmen Valley project can be given even though it was started to in October 1989 with a different planning principle. The project contains 290ha. and has the aim of creating 5km long corridor with social, cultural, entertainment and recreational activities. However, the valley has many squatter areas which are to be cleared according to the aim of the project. To solve the property rights of squatter house owners, the houses in new residential areas above the valley are given to the owners of squatter houses as free of charge (as their rights). The houses in new residential areas are going to be developed in high quality and have the total construction area of 357.000 m2.

The project will have been finished in 1998. Most of the planning steps has been completed successfully and some of the squatter house owners had their new homes in new residential area of the valley.

Therefore, the property rights of squatter houses are transferred to the new development residential area from the inner side of the valley. The main principle of the TDR program can be seen clearly from this project. Most importantly, the municipality and planning organizations had no special regulations to monitor this change since present planning legislation do not restricts any action like transferring of property rights.

5.2.5 THE EFFECTS OF TRANSFER OF DEVELOPMENT RIGHTS TECHNIQUE ON HISTORICAL AREAS

As mentioned in previous chapters, conservation of historical areas and buildings are not successful in Turkiye because of various reasons, like economic structure of the country.

Conservation policies and implementations generally depend on zoning regulations by conservation plans. Government want to preserve these areas by

either planning regulations or by making expropriations. Planning regulations could not have been realized because of the economic pressures on urban or rural land. In urban areas there is a strong rent pressures on historical areas, because generally, historical areas are near the center or closest to the center of the city where land prices and speculations are higher. Therefore, historical areas in urban locations could not be preserved. Additionally, the owners of the historical buildings are in low income groups, so they could not find capital to repair and maintenance their old buildings.

The other way to preserve of such areas is expropriation by government. However, this is not a good solution for such a problem. Because Turkiye has limited capital sources with unequally distributed. Government could not expropriate all historical areas all over the country.

An example from the historical stock was chosen, therefore, to see to what degree the TDR implementation could solve the problems of such areas.

CHAPTER 6

A CASE STUDY WITH THE TDR TECHNIQUE BASED ON GIS IN İSTİKLAL DISTRICT

In order to explain how a TDR program might work in Turkish conditions, with Geographical Information System Environment, İstiklal Quarter was a chosen as a case study. The main aim of this application is to examine the TDR technique as a new planning tool to preserve historical areas which could not be conserved effectively with the present planning tools. GIS environment was used in the application process. The system is said to be a new environment for the technical solutions of comprehensive and complex urban problems.

6.1 THE FEATURES OF ISTIKLAL QUARTER

The application process of TDR has taken as a good example to show how a TDR program might be implemented on a historical area in Türkiye.

6.1.1 THE REASONS OF CHOOSING THE ISTIKLAL QUARTER AND BITPAZARI REGION AS A CASE STUDY

İstiklal Quarter (known as Old Jewish Quarter) is chosen as a case study because the district has many common features with other historical districts all over the country. It is located near the old city center Ulus and it is the under pressure of development.

The are has the characteristics of old Ankara civilization and land owners of these areas are in low income group, therefore, the area could not be repaired and preserved.

Outside of the area, developments were permitted by the planning regulations which creates a windfall-wipeout dilemma. Bitpazarı region located on the west of İstiklal Quarter has the development permits by the planning regulations. But the area has not developed yet. Therefore, land speculations are higher than anywhere near the area.

To solve these problems and to show how TDR might be effective on conservation of historical areas, İstiklal Quarter is chosen as conservation area, and the Bitpazarı region is chosen as the transfer area.

Therefore, it can be actually seen that the transfer and conservation areas have the common characteristics of the other historical areas in Türkiye.

6.1.2 CHARACTERISTICS OF THE AREAS

İstiklal Quarter is located on the north side of Ulus, old center of city of Ankara. On the east side of the quarter there is Anafartalar Street, on the west Denizciler and Hasırcılar Street, on the south Talatpaşa Street which are the important commercial axes of the city of Ankara. This makes the area been an important location.

The first development plan was prepared by Yücel-Uybadin which had permitted the high density construction in the area. Today, according to this plan, along major roads (Anafartalar Street) there are development with high density.

On the south of the site, there are major hospitals like Hacettepe an d Numune which causes to locate pharmacies in the area.

The quarter can be divided into two parts: Preservation area (İstiklal Quarter), and the development area (bitpazarı Region). The division is strictly operational because of the Ulus Conservation Plan which permits the development on the west side of the area while does not permit the development on the other, that is, conservation area (İstiklalQuarter).

Ulus Conservation Project is the second planning regulation for this area. development was permitted to Bitpazarı Region, however, it has not developed yet. The application plans and process has not prepared yet for the two areas, therefore, the speculation has taken in the area which causes higher rents (i.e., 1m2 building costs 70-80 million TL), on the other hand the conservation area has a little land value, for example, 1m2 building costs 7 million TL. Therefore, a windfall has occurred in the developable area and a wipeout has occurred in the conservation area because of the expectations from Ulus Conservation Plan.

The buildings in preservation area cannot be preserved with the existing tools because the owners of the buildings are in low income group, therefore, they could not have enough capital to restorate and to maintenance their buildings. Additionally, private holders do not want to invest to such areas because of the low rents, high restoration costs and low demands.

As a result, TDR will be implemented in these areas to:

* To protect historical area

* To provide social justice

* To gain additional rents which has occurred because of government investments to the public.

a. CHARACTERISTICS OF PRESERVATION AREA

A- LANDUSE: Main land use activity of the preservation zone (İstklal Quarter) is residential. Other uses of the area are: religion, public-education, service, commercial. Old religious buildings are Havra (old Jewish Religious building(, Eskicioğlu Mosque, Leblebicioğlu Mosque and Örtmeli Small Mosque. These buildings are active, with their old uses.

There is one primary school and one high school in the İstiklal Quarter. As public use, there are some buildings on Anafartalar and Denizciler Street. Historical 'Şengül Hamamı' bath and 'Marmara Hamamı' are also located and still functioned in the area.

Commercial uses located along the main axes of the district. Small scale service activity are located on the corner of Eskicioğlu Street and İnan Street, and at the end of the Eskicioğlu, Birlik and Kargı Streets.

There are empty and ruined buildings along the frontiers of Hasırcılar Street and Anafartalar Street. There is no empty space except the areas that mentioned above.

B- NUMBER OF STOREYS: Number of storeys of buildings in İstiklal Quarter ranges from 1 to 4, but generally, there are buildings that have 2 number of storeys.

4 storey buildings located along the Anafartalar Streets and Talatpaşa Boulvard. These buildings were developed according to Yücel-Uybadin

Development Plan. There is not any higher buildings along Hasırcılar Street and inner side of the quarter.

C- OWNERSHIP PATTERN: There are many small plots in the area and each small plots have owned by more than one person. This fact is also supported by the results of enquiry as below:

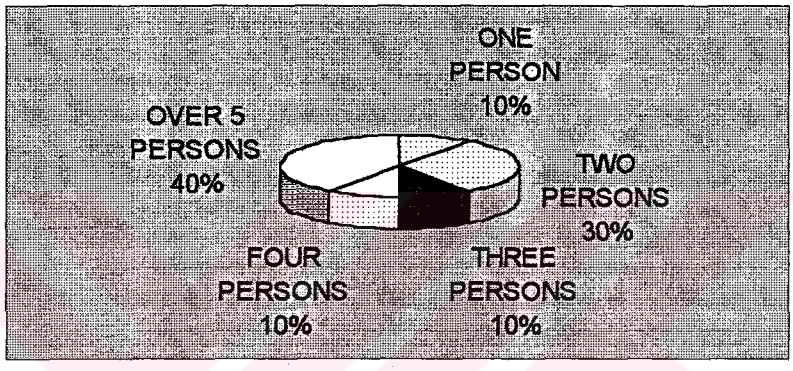


Figure 6.1 Ownership Pattern İn İstiklal Quarter.

That is, there is a multi-owneship pattern in the area which creates many problems in any planning process.

The most of the owners of the houses had bought their house by paying cash (80%). 13.3 percent of the owners had owned their house by inheritance.

D- SOCIAL STRUCTURE: Social structure is an important factor that has to be known in any planning acts and in any application of Transfer of Development Rights Technique. Because, the degree of application of the TDR technique depends on the social and economic structure of the people that are living in transfer and preserved area.

According to the enquiry results, number of workers in one house is as fallow:

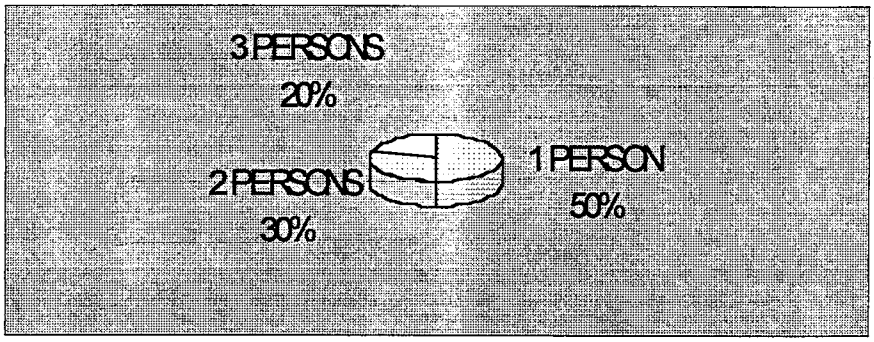


Figure 6.2 Number of Workers Per House Unit.

Generally, the people that lives in İstiklal Quarter are in low income groups. Most of them are small tradesmen (%19), and small official (%17.5). The percentage of qualified fabric workers are 17. The other jobs in the area are free employees, big tradesmen, unqualified workers and unemployees.

The workers are generally insured by Social Insurance Institution (Sosyal Sigortalar Kurumu-SSK) with 32%, and by Emekli Sandığı with 30%. And 6% of the workers are insured by Bağkur. However, 30% of these workers in İstiklal Quarter were not insured by any Insurance Institution.

The education level of the fathers of these families living in that quarter are mostly graduated of primary school with 55%. Additionally, 5% of these people were graduated from university or high-school.

On the other hand, the mothers of these families were graduated from primary school with 51.7%. 20% of these females do not have any education level.

Most of these families were migrated to Ankara from several cities of the country, and had generally 2 children.

75% of the people are the tenants who pay a little for the house. 43.5% of these people use 2 rooms, 28.3% use 3, 21.7% use 4 and 6.54% use 1 rooms in their houses.. The number of people that lives in one house are 4 with 31.8% and are 6 with the percentage of 28.

According to the results of the enquiry, most of people lives that area for many years:

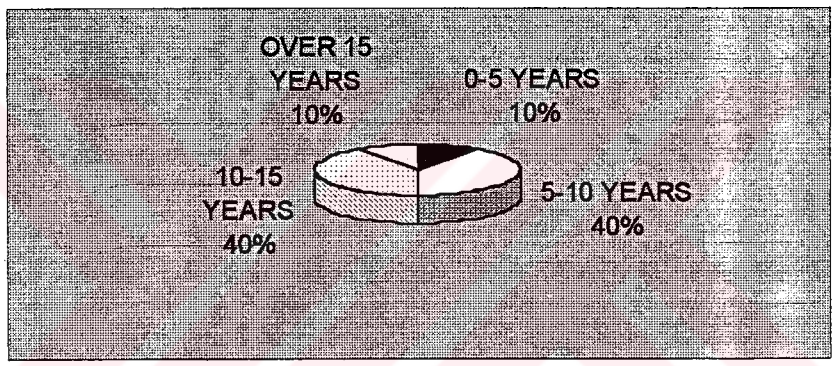


Figure6.3 The Living Period In Istiklal Quarter.

E- THE PROBLEMS OF THE AREA: The result of the investigation for the İstiklal Quarter showed that there is not any problem of electric and water system. The road connection to the other sides of the city of Ankara is provided by main axes like Anafartalar Street. However, all the roads inside the İstiklal Quarter is asphalt that causes problems for the houses because the water can not be sucked down by the ground.

There are insufficient green areas and playing parks. In the area the number of children is strictly high, therefore, playing parks or open spaces are needed.

There is any regulated garbage system because of the narrow streets. It has to be rearrange again for the quarter.

Most importantly, physical structure of the houses and living conditions in the structures is in a bad condition, because the structure can not be repaired by owners, by tenants and also by government policy.

This is also supported by the enquiry. Most of the people are not glad for their houses, only 20 % are glad. The reasons depends on the physical structure of their buildings. Additionally, the willingness of living in somewhere else different their quarter is 60%. The rest do not want to replace their houses to other quarters, because their relationships with neighborhoods are very well.

b. CHARACTERISTICS OF TRANSFER AREA

Transfer area locates on the west side of the İstiklal Quarter. The area is covered by the main axes of the city of Ankara like Hasırcılar Street on the north and Hergelen Square o the west.

Existing land use situation of the area consists of mainly small commercial uses and residential uses.

On the north of the Hergelen Square small commercial activities take place, on the north and south of the area there are public uses that is belongs to Gazi University and Ankara University. On the south west of the area there are other public uses like İller Bankası.

Except the main axes, the number of storeys is limited by 2 or 3. However, on the main axes there are 5-6 stories in the area.

Existing situation of the buildings except the new structures which has developed because of the development permits by Ulus Conservation Plan is in a bad condition. Most of the people are the owners of the commercial buildings:

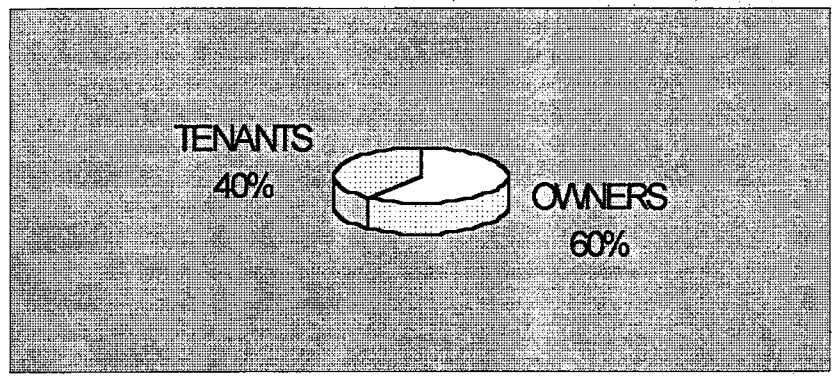


Figure 6.4 The Rate Of Ownership.

Additionally, according to the results of the enquiry, a high percentage of the tradesman have been living in that quarter for many years.

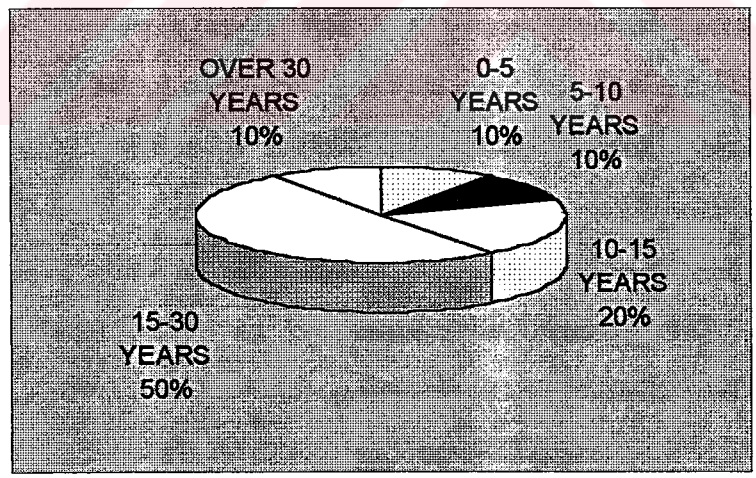


Figure 6.5 The Living Period Of Tradesman In İstiklal Quarter.

The same problem is also valid for the transfer area: multi ownership pattern. However, the degree of the problem is lower than the preservation area:

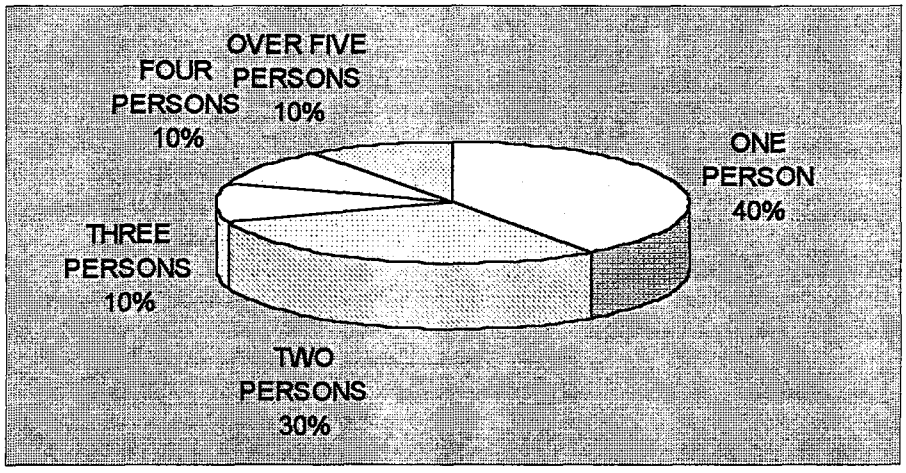


Figure 6.6 Ownership Pattern Of Bitpazarı Region.

The people are not Glad of their physical structures, they have been waiting for the drawing of application plans of Ulus Conservation project.

Like İstiklal Quarter, Bitpazarı Region has also 2 planning regulation by Yücel-Uybadin and Ulus Conservation Project.

However, the application plans of Ulus Conservation Project has not prepared yet, and there is an underdetermined situation in that area. Therefore, people that lives in Bitpazarı Region are waiting for the new planning decisions.

In Ulus Conservation Project, the area is determined as development area with 5 or 6 number of storeys except public uses. The land use activity has determined as wholly commercial uses.

The rents of the area is higher because of the land speculation. land prices are increasing by day to day, allowing a huge windfall to the owners of the areas/buildings.

Therefore, TDR application is required by that area:

* To provide social justice

* To protect windfall earnings

* To regulate the land uses

* To prohibit land speculation

* To return the excess profit to the public.

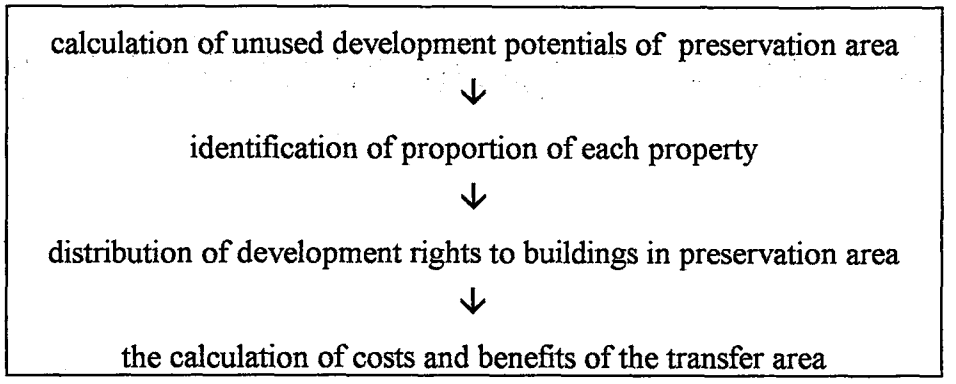
2. METHODOLOGY

İstiklal Quarter was chosen as preservation/restriction area (transferor area) and Bitpazarı Region was chosen as development area (transfer area). A further reason for the choice, is the fact that both transfer and the transferor area existed side by side in the case of Istiklal Quarter, which is seldom the condition for TDR exercises. This provided us the opportunity to cross-check the likely consequences of the TDR implementation, even if it was considered a limited and hermetic exercise, closed to the overall market.

Another purpose here, is to illustrate the pottentialities, convenience and two-way flexibilities the GIS methods of accounting and the calculation of the transfer operations. As a first step of the implementation process of TDR with geographical information system, the unused development rights of preservation area are calculated. There may be several ways to calculate these development potentials, but three different methods are used to calculate the volume of unused development rights, since the ownership pattern of preservation area is not clear, as mentioned below.

After analysing the development potentials in different aspects, the third method is chosen as the best result to clarify the unused development rights of preservation area. This unused total development right amounts to (36210.4 m^2)

as determined for the whole area. Therefore, the unused development right of each property is found.



The determination of proportion of each property from total unused development volume in preservation area, are calculated with the GIS technique in the second step.

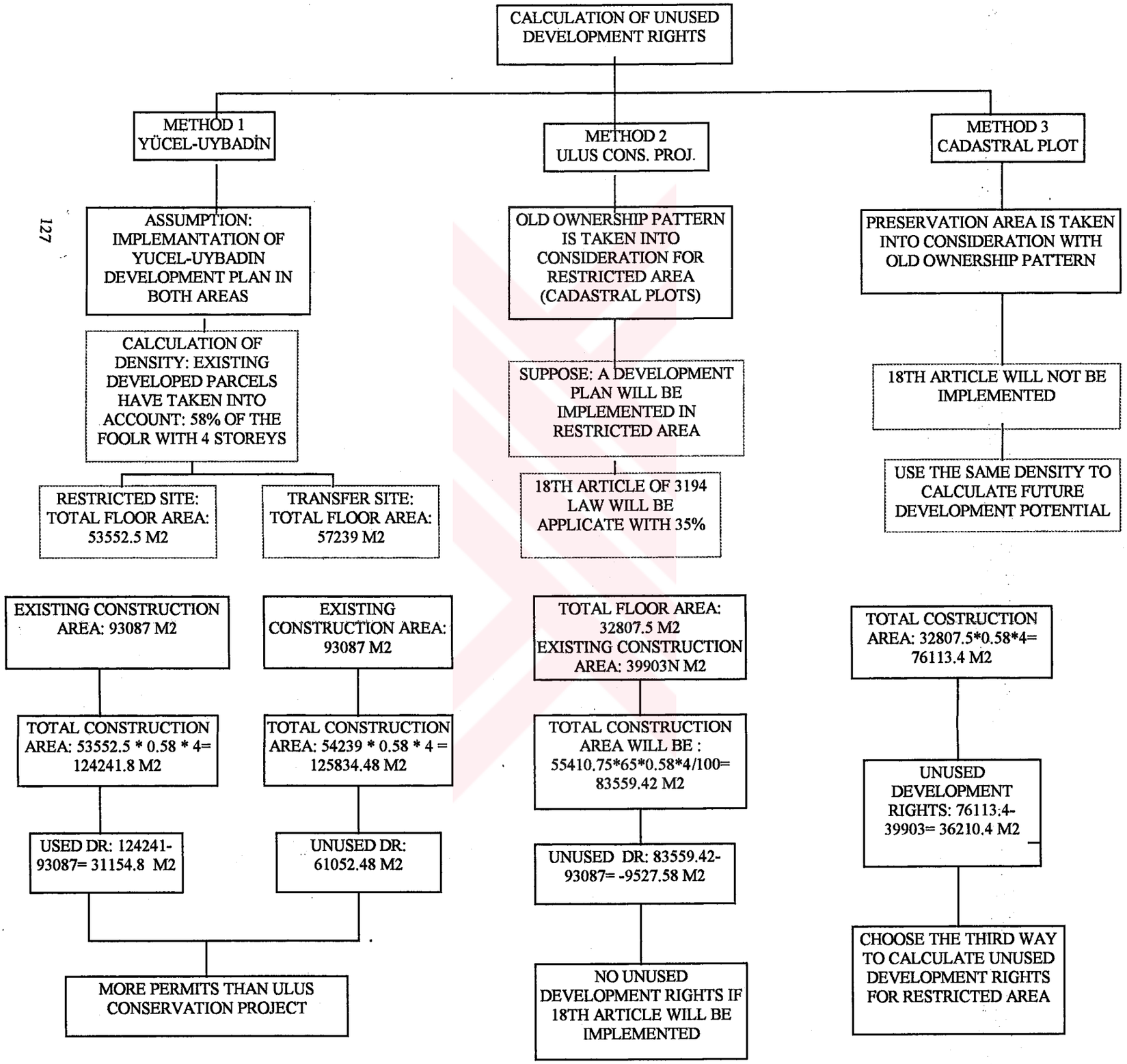
The proportion of each building are determined according to three main criteria:

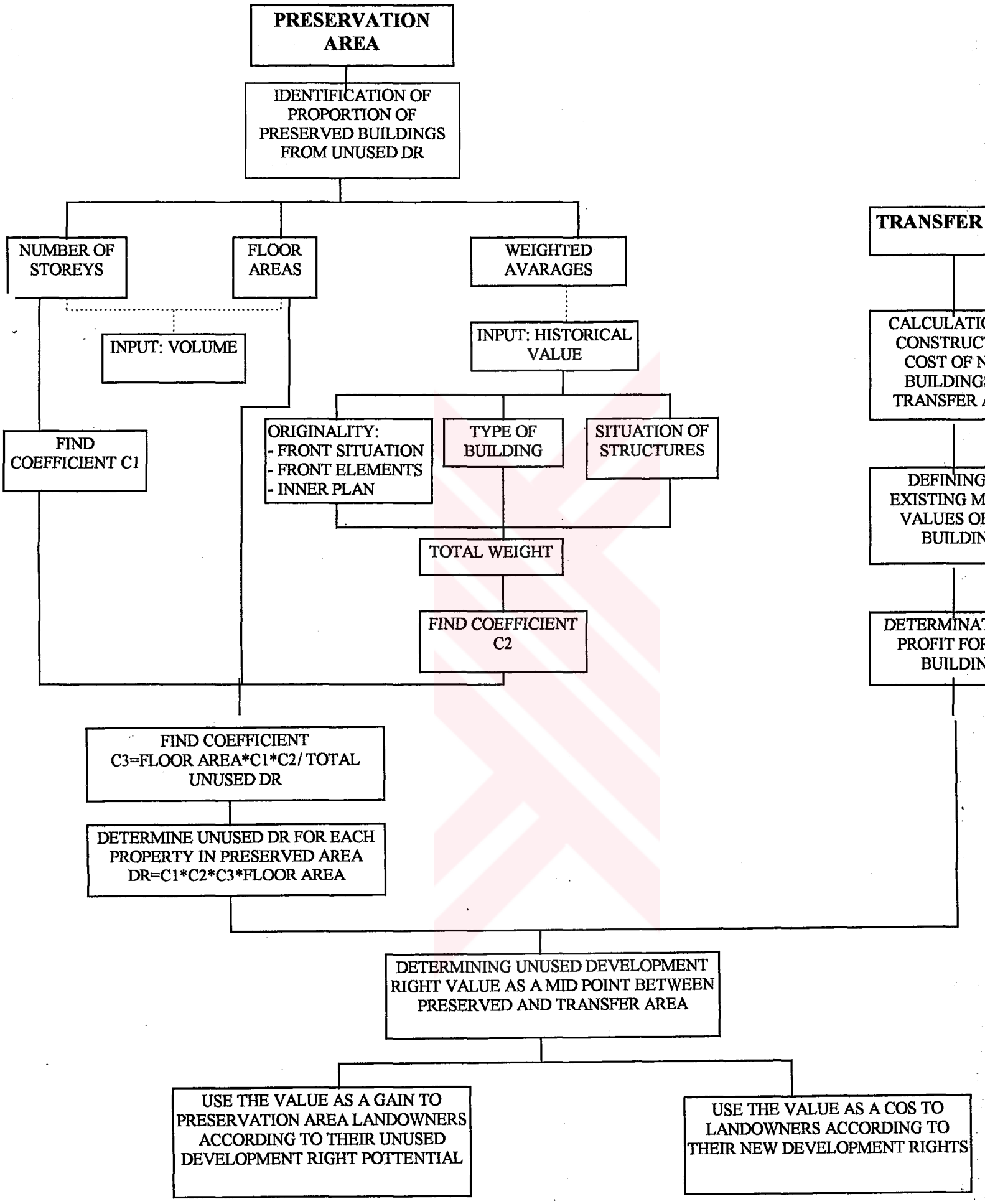
-The number of storeys of the buildings

-The floor areas of the buildings

- The weighted avarages of the buildings.

Number of storeys and floor areas of the existing buildings in preservation area are the criteria for volume, while weighted avarages is a criterion to find out the historical value or priority of each structure. As mentioned in the fourth chapter, the development rights are distributed in several ways, according to volume or physical value like in the USA. In this study, both volumes and physical characteristics of the buildings are taken into account for the distribution of development rights.


CALCULATION OF UNUSED DEVELOPMENT RIGHTS
METHOD 1 YÜCEL-UYBADİN
METHOD 2 ULUS CONS. PROJ.
METHOD 3 CADASTRAL PLOT
ASSUMPTION: IMPLEMANTATION OF YUCEL-UYBADIN DEVELOPMENT PLAN IN BOTH AREAS
OLD OWNERSHIP PATTERN IS TAKEN INTO CONSIDERATION FOR RESTRICTED AREA (CADASTRAL PLOTS)
PRESERVATION AREA IS TAKEN INTO CONSIDERATION WITH OLD OWNERSHIP PATTERN
CALCULATION OF DENSITY: EXISTING DEVELOPED PARCELS HAVE TAKEN INTO ACCOUNT: 58% OF THE FOOLR WITH 4 STOREYS
SUPPOSE: A DEVELOPMENT PLAN WILL BE IMPLEMENTED IN RESTRICTED AREA
18TH ARTICLE WILL NOT BE IMPLEMENTED
RESTRICTED SITE: TOTAL FLOOR AREA: 53552.5 M2
TRANSFER SITE: TOTAL FLOOR AREA: 57239 M2
18TH ARTICLE OF 3194 LAW WILL BE APPLICATE WITH 35%
USE THE SAME DENSITY TO CALCULATE FUTURE DEVELOPMENT POTENTIAL
EXISTING CONSTRUCTION AREA: 93087 M2
EXISTING CONSTRUCTION AREA: 93087 M2
TOTAL FLOOR AREA: 32807.5 M2 EXISTING CONSTRUCTION AREA: 39903N M2
TOTAL COSTRUCTION AREA: 32807.5*0.58*4= 76113.4 M2
TOTAL CONSTRUCTION AREA: 53552.5 * 0.58 * 4= 124241.8 M2
TOTAL CONSTRUCTION AREA: 54239 * 0.58 * 4 = 125834.48 M2
TOTAL CONSTRUCTION AREA WILL BE : 55410.75*65*0.58*4/100= 83559.42 M2
UNUSED DEVELOPMENT RIGHTS: 76113.4-39903= 36210.4 M2
USED DR: 124241-93087= 31154.8 M2
UNUSED DR: 61052.48 M2
UNUSED DR: 83559.42-93087= -9527.58 M2
CHOOSE THE THIRD WAY TO CALCULATE UNUSED DEVELOPMENT RIGHTS FOR RESTRICTED AREA
MORE PERMITS THAN ULUS CONSERVATION PROJECT
NO UNUSED DEVELOPMENT RIGHTS IF 18TH ARTICLE WILL BE IMPLEMENTED


PRESERVATION AREA
IDENTIFICATION OF PROPORTION OF PRESERVED BUILDINGS FROM UNUSED DR
NUMBER OF STOREYS
FLOOR AREAS
WEIGHTED AVARAGES
INPUT: VOLUME
INPUT: HISTORICAL VALUE
FIND COEFFICIENT C1
ORIGINALITY:
- FRONT SITUATION
- FRONT ELEMENTS
- INNER PLAN
TYPE OF BUILDING
SITUATION OF STRUCTURES
TOTAL WEIGHT
FIND COEFFICIENT C2
FIND COEFFICIENT C3=FLOOR AREA*C1*C2/ TOTAL UNUSED DR
DETERMINE UNUSED DR FOR EACH PROPERTY IN PRESERVED AREA DR=C1*C2*C3*FLOOR AREA
DETERMINING UNUSED DEVELOPMENT RIGHT VALUE AS A MID POINT BETWEEN PRESERVED AND TRANSFER AREA
USE THE VALUE AS A GAIN TO PRESERVATION AREA LANDOWNERS ACCORDING TO THEIR UNUSED DEVELOPMENT RIGHT POTTENTIAL
TRANSFER AREA
CALCULATION OF CONSTRUCTION COST OF NEW BUILDINGS IN TRANSFER AREA
DEFINING THE EXISTING MARKET VALUES OF NEW BUILDINGS
DETERMINATION OF PROFIT FOR NEW BUILDINGS
USE THE VALUE AS A COS TO LANDOWNERS ACCORDING TO THEIR NEW DEVELOPMENT RIGHTS

Weighted averages are obtained by the historical value of the buildings. It represents the degree of priority of preservation. That means, the buildings which were unchanged or changed a little from their original state should have priority in the preservation process. Therefore, they would take larger portions from the distribution of development rights and get relatively greater funds for conservation. In the project, the priority values are taken into account under the index of originality.

Weighted averages are obtained by the following steps:

a) Determining the value and the priority of preserved buildings in restricted area for inputs to the index of originality.

b) Weighting the facades, the situation of the facade elements, the situation of plan of buildings.

c) Weighting monumental buildings, registered buildings and the buildings preserved by plans.

Determination of all of above provides the priority of preservation. Then the situation of structures, the evaluation of facades, existing structure and land-use of restricted area are weighted. The application of the weights getting on each steps gives the criteria which will be used in 'attribute data' layers in GIS environment.

The originality index, will be obtained from the total values of;

- Facades of buildings

- The situation of facade elements of buildings

- The situation of plan of buildings

After that procedure, total weights of the buildings will be obtained by the total values of following criteria to get the priority degrees of the preserved buildings in İstiklal Quarter;

- Originality degree

- Type of building

- Structural condition

- Facades.

After the total weight of buildings are obtained, the number of storeys and the floor areas are taken into account to distribute the development rights to restricted landowners in İstiklal Quarter as a third step. The layer of existing situation and layer of plan will be intersected to find out the new structures that will come with the Ulus Conservation Project. In this step, the GIS methodology is used, that is, the technique has the logical methology in itself. Firstly, database are determined by defining the study area, coordinate system, data layers and attributes. Than the data automation and management are put in process in order to find the result of TDR implementation in the area.

As a fourth step, the construction cost of the new buildings in the transfer area are calculated (with the multiplication of construction area and the cost of construction for one square meter).

After that, the surplus of new buildings in transfer area are determined by the existing land and or property values.

As the final step, a mid-value is determined between the loss of the property owners in the preservation area, and the surplus of the property owners in the transfer area. Than the value is used as a cost to properties in transfer area

and a gain to properties in preservation areas, with a compelling program to transfer area landowners.

6.2.1 CALCULATION OF DEVELOPMENT RIGHTS IN THE PRESERVED AREA

The ownership pattern of the İstiklal Quarter has some crucial problems like any historical area all over the country. The area has many planning applications with different ownership patterns. The first application of ownership was done by Yücel-Uybadin Development Plan. It was designated as a developable area, hence the ownership of land was planned in development plots. Some of them was approved by the The General Directory of Deeds and Cadastral Records and some of them were not. After that, Ulus Conservation Project was approved, but application plans have not been prepared yet. In this plan, plots that are not approved by the Deed Organization were proposed in the old ownership pattern, that is, in cadastral plots. Additionally, the number of ownership units in one plot is too many to design and come to an agreement on any planning proposals.

All these conditions cause many problems in the application of TDR program for the area. All these problems of ownership pattern of the Istiklal Quarter, are common problems in all historical places throughout Türkiye. Therefore, an assumption is to be made for the ownership patterns for these areas.

The plots and buildings that were developed before are kept out from the application of TDR program. Because they were developed 5-10 years ago, and their plots were registered by Deed. As mentioned before, these plots are located near the Anafartalar Street with 5 or 6 number of storeys.

Inside the Istiklal Quarter, there are no developed plots and all of them contain historically valued buildings, that is, except the developed plots, the

other plots will be preserved and will be taken into account in the application of TDR program.

Therefore, the assumption that is necessary for application is that: Development rights will be calculated according to historical buildings, not to cover historical plots. It means that development right calculation will be based on the buildings and building characteristics alone.

Hence, unused development rights will be calculated for the whole conservation area, and then total unused development rights be distributed according to the individual characteristics of the buildings in preserved area.

This may, however, be carried out in several ways:

A-FIRST ASSUMPTION

As mentioned before, Yücel-Uybadin Development Plan suggested development for the Istiklal and for Bitpazarı Quarters. If Bitpazarı Quarter had developed according to Yücel-Uybadin Development Plan, 26900.98 m2 construction area is lost, as compared with Ulus Conservation Project.

The development potential on the plots of Yücel-Uybadin Development Plan were calculated to find out the result that was shown above. The assumption is that Yucel-Uybadin Plan will be implemented in the area.. According to this method, total floor area of the preservation site is calculated as 53552.5 m2, and the total floor area of the development site (transfer site) is calculated as 57239 m2. The existing construction in the conservation area is 93087 m2 and the amount in development area is 64782 m2.

In the area, some plots were developed according to the old planning proposals. Therefore, existing developed buildings are taken as an example of density and found as 58% on the floor with four stories.

According to this density calculated according to current developed building in the area, total construction area is;

53552.5*0.58*4=124241.8 m2

Unused development rights are:

124241.8-93087 (existing construction area of preservation area)=31154.8 m2

If we calculate the development area with the same density, we will find total construction area as;

54239*0.58*4=125,834.48 m2

Unused development rights are: 61052.48 m2.

However, Ulus conservation project requires the construction area as 98,933.5 m2 in the development area, therefore, if Ulus Conservation Project is implemented, 26,900.98 m2 construction area will be lost in the area.

In TDR application, the same assumption has to be made for both the preservation area and the transfer area. Therefore, Yücel-Uybadin Development Plan cannot be taken into consideration for the transfer area. Because Ulus Conservation Project permits development less than the Yücel-Uybadin Development Project.

B-SECOND ASSUMPTION

With a second assumption, the old pattern of ownership is taken into consideration wholly in all preservation area, in which total area is 55410.75 m2. Cadastral plots are taken, supposing a development plan was implemented on the conservation site. Therefore, the 18th. article of 3194 Development Law will be implemented, taking out 35% of the floor area for the public use. Total floor area of the preservation district is:32807.5 m2 with the existing construction area of 39903 m2.

Total construction area;

55410.75*65*0.58*4:100=83559.42 m2.

The unused development rights are;

83559.42-93087=-9527.58 m2.

As a result, there are no unused development rights in the conservation area.

In this case, unless interference is done in the area we will come to the starting point, that is conservation area can not be preserved because of the existence of landowners in low income groups and noninvestors of private holders. Therefore, an intervention is needed which is done by taking preservation district with the existing used development rights. In this case, the amount of transferable development rights are 39903 m2 in the preservation district, in the development area the conserved buildings have 5184 existing development rights (construction area).

C-THE 3RD ASSUMPTION

In the third method, the preservation district alone is taken into consideration with the old ownership pattern. In this way, if the 18th article is not be implemented, the total construction area will be;

32807.5*0.58*4=76113.4 m2.

The unused development rights then are;

76113.4-39903=36210.4 m2

The third method is the best choice to calculate the unused development rights of the preservation area. Therefore, the total unused (transferable) development rights of the preserved zone are 36210.4 m2 (construction area).

6.2.2 THE DISTRIBUTION PROCESS OF DEVELOPMENT RIGHTS WITH THE GIS TECHNIQUE

Geographical Information Systems (GIS) are computer based systems that are used to store and manipulate geographic information. It is an essential tool for the effective use of geographic information. The system is designed for the collection, storage and analysis of objects and phenomena where geographic location is critical to the analysis.

The system takes complex or comprehensive information related to geographic location and manipulate them in computer environment. In this thesis, it is used to calculate large amount of data belongs to the buildings, and join the geographical data.

The system requires a defined and organized database. Therefore, as a first step the study area is determined as below:

The study area is composed of two parts. One is the preservation area, and the other is the development area. Preservation area is the area between Anafartalar Street and Hasircilar Street. Along Anafartalar Street some buildings have 4 or more storeys, while the rest has 1 or 2 storeys (Figure 6.7 and 6.8) (İstiklal Mahallesi, 1988).. Development area has the boundary from Hergelen Square to Hasircilar Street. It has also an old structure mainly with 1 or 2 storeys. At the end of the planning process, the area will be developed up to 5 or 6 storeys according to the Ulus Conservation Project (Figure 6.9 and 6.10).

Figure 6.7 Land use of preservation area

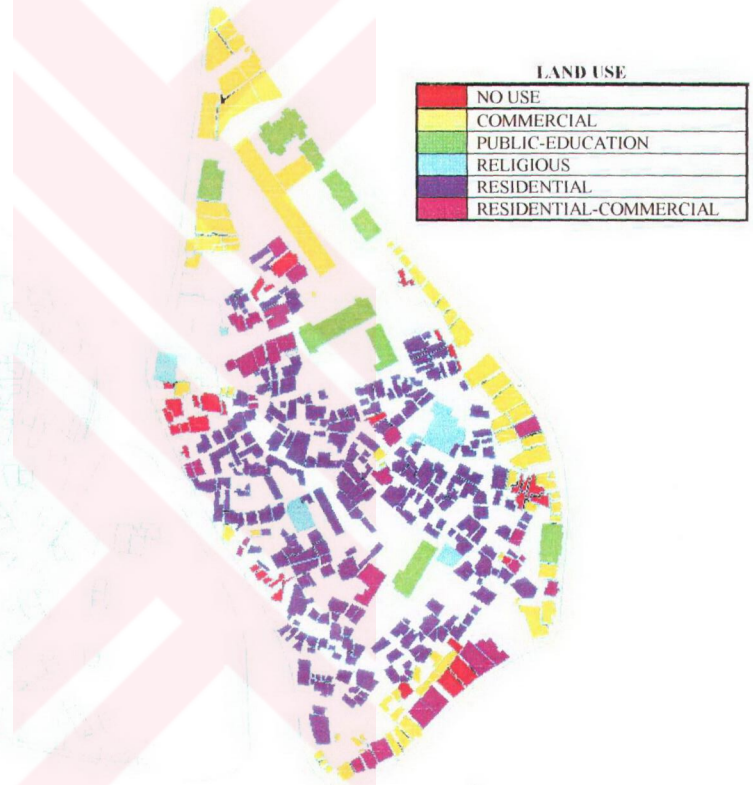


Figure 6.8 Number of Soreys of preservation area

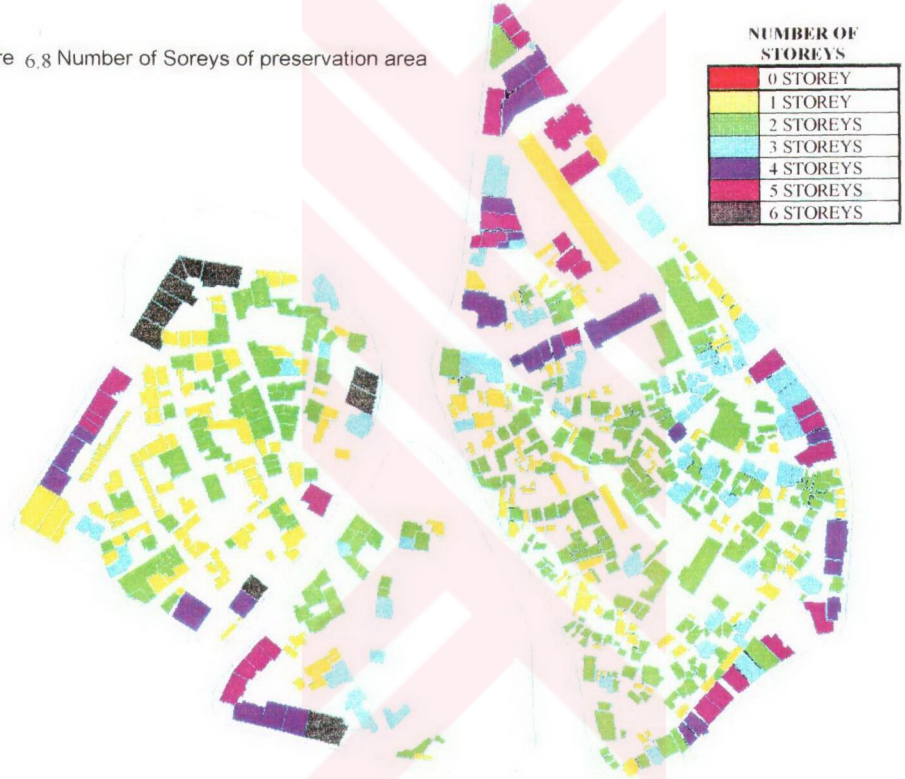
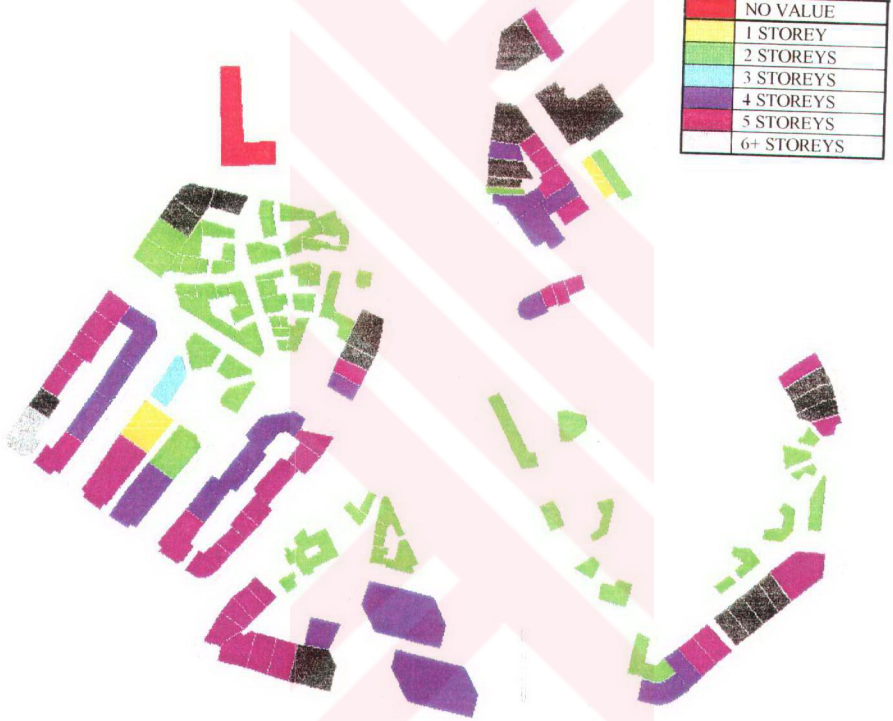


Figure 6.9 Land use of Ulus Conservation Project

Figure 6.10 Number of storeys given by plan



a. DATA LAYERS, COVERAGES

Cartesian Coordinate System is used in the project. The control points were determined manually. Data Layers grouping of geographic data that emulates the organization of information on map overlays.

Data layers are composed of two parts. One is the existing situation (existing land use with existing storeys) and the other is the planned situation. In existing coverage there are three layers; buildings, roads and garden walls while planned situation has buildings, roads and the green areas.

b. NECESSARY ATTRIBUTES

In GIS environment, attributes are the descriptive information about each land or facilities element in the database. Therefore, in the existing situation coverage that means in preservation area (İstiklal Quarter), building feature needs the attributes as follows:

Building Code

Floor Area

Number of Storeys

The Facades

The Situation of Facade Elements of The Buildings

The Situation of Plan

The Type of Buildings

The Valuation of Facades

Condition of Buildings

Land Use

Structural Condition

Restoration Cost

Ownership

Value of The Situation of Fronts of Buildings

Value of The Situation of Fronts Elements of The Buildings

Value of The Valuation of Front of Buildings

Value of Land Use

Value of The Situation of Inner Plan

Value of The Type of Buildings

Value of Existing Structure

Value of The Situation of Structures

Table 6.1 IDENTIFICATION OF COVERAGES

THEME	GEOGRAPHIC OBJECTS	ATTRIBUTES	COVERAGES	FEATURE CLASS
Buildings In Preserved Zone	Building Footprint	NOS, LU, TSFB, ES, OWN, TSFEB, TSIP, TTB, TSS, TVFB, RC, VTSFB, VTSFEB, VTVFB, VLU, VTSIP, VTTB, VES, VTSS, Originality, TW, DR, IDRC	BINAS_COV	Polygon
		NSDZP, LUDZP, TTBDZ, CC, MV, P, TDRC, NP		
Buildings In Development Zone Determined By Plan	Building Footprint		BINA2S_COV	Polygon
		NSEDZ, TTBEDZ		
Buildings In Existing Development Zone	Building Footprint			
Roads Name		NAMES	BINAS_COV	Polygon
Garden Wall	Roads By Roads Name	NONE		
Green Areas	Land Cover	NONE	YOLS_COV	Polygon
	Land cover		DUVAR_COV	Polygon
			YESIL_COV	Polygon

Table 6.2 Contents of Buildings in Preserved Area

THE SITUATION OF FACADES	LABEL
0	FULLY CHANGED, JOINT BUILDING
1	MOSTLY CHANGED
2	MINOR CHANGES
3	UNCHANGED
THE SITUATION OF FACADE ELEMENTS OF BUILDINGS	**LABEL**
0	FULLY CHANGED
1	MOSTLY CHANGED
2	MINOR CHANGES
3	UNCHANGED
THE SITUATION OF PLAN	**LABEL**
0	UNKNOWN
1	MOSTLY CHANGED
2	MINOR CHANGES
3	UNCHANGED
THE TYPE OF BUILDINGS	**LABEL**
7	BUILDINGS PRESERVED BY PLAN
8	REGISTERED BUILDINGS
9	MONUMENTAL BUILDINGS
THE VALUATION OF FACADES	**LABEL**
0.5	6 th DEGREE
1	5 th DEGREE
1.5	4 th DEGREE
2	3 rd DEGREE
2.5	2 nd DEGREE
3	1 st DEGREE
CONDITION OF BUILDINGS	**LABEL**
0.5	4 th DEGREE
1	3 rd DEGREE
1.5	2 nd DEGREE
2	1 st DEGREE
LAND USE	**LABEL**
1	COMMERCIAL
2	RESIDENTIAL
2	PUBLIC-EDUCATION
2	RELIGIOUS
1.5	COMMERCIAL+RESIDENTIAL
2	SERVICE
STRUCTURAL CONDITION	**LABEL**
2	GOOD
4	MIDDLE
6	BAD
8	RUINED

The attribute of the roads are their names. The street names and the main axes name is required in the project to make spatial organizations.

The feature 'garden walls', do not need any attribute data because they will be used only to calculate the open spaces which belong to private ownership.

In the second coverage (transfer area -Bitpazarı Region-), buildings have the attribute data as fallows:

Building Code

Floor Area

Number of Storeys

Construction Cost

Building Market Value

Profits Without TDR

TDR Cost

Net Profit

Again the attribute data of the roads are their names. It is required to point out the spatial relationships between existing situation and planned situation. Additionally, green areas does not have any attribute data.

c. CODING AND ORGANIZING THE ATTRIBUTES

The organization of the attributes that belongs to existing situation coverage buildings (preservation area) will be as follows:

Table 6.3 Existing Situation of Preservation Area

BUILDING CODE	**Floor Area**	**Number of Storeys**	**Land Use**
	Value of The Situation Facades	The Situation of Facades	The Valuation of Facades
	The Situation of Facade Elements of The Buildings	The Situation of Plan	The Type of Buildings
	Ownership	Value of The Situation of Facade Elements of The Buildings	Value of The Valuation of Facades
	Condition of Building	Structural Condition	Restoration Cost
	Value of Land Use	Value of The Situation of Inner Plan	Value of The Type of Buildings
	Value of Existing Structure	Value of The Structural Condition	

Similarly the organization of the attributes that belong to planned situation coverage buildings (Transfer Area) will be as follows:

BUILDING CODE	FLOOR AREA	# OF STOREY	CONSTRUCTION COST	VALUE
	PROFITS	TDR COST	NET PROFIT	

To code the existing buildings following criteria and valuations will be used.

These are all for the weighting of the preserved buildings. These codes are applied to buildings in preservation zone. All codes are given according to

personal point of view and they can be discussed. Higher grades are given to physically mostly destroyed buildings and getting smaller while the changes on buildings are increasing.

The valuation of the facades is as fallows (Figure 6.11):

Unchanged: 3

Less Changed: 2

Mostly changed: 1

Fully Changed: 0

Joint Building: 0

The values of the situation of facade elements of the buildings is shown below (Figure 6.12):

Unchanged: 3

Less Changed: 2

Mostly changed: 1

Fully Changed: 0

Joint Building: 0

Figure 6.11 The valuation of fronts of buildings

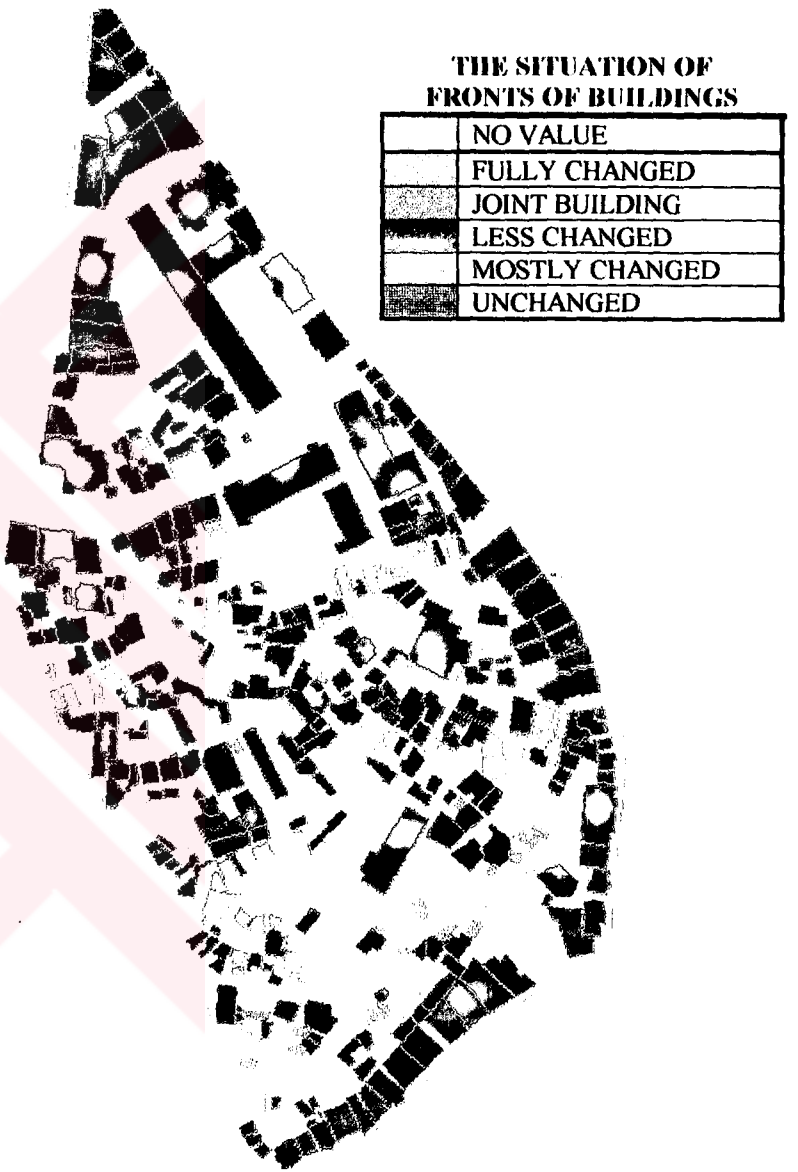


Figure 6.12 Fronts elements of buildings

Values of the situation of plan of the buildings in preservation area is as fallows (Figure 6.13):

Unchanged: 3

Minor Changed: 2

Major changed: 1

Unknown: 0

The type of buildings is determined according to following values in preservation area (Figure 6.14):

Monumental buildings: 9

Registered buildings: 8

Buildings preserved by plan: 7

Non preserved buildings: 0

Facades are taken into account by following values:

1st degree: 3

2nd degree: 2.5

3rd degree: 2

4th degree: 1.5

5th degree: 1

6th degree: 0.5

Figure 6.13 The situation of inner plan

Figure 6.14 The type of buildings

Structural Condition of the buildings are determined with the following values (Figure 6.15):

1st degree: 2

2nd degree: 1.5

3rd degree: 1

4th degree: 0.5

Present land uses of the preservation area have the values as belows (Figure 6.7):

Commercial: 1

Residential: 2

Public-Education: 2

Religious structure: 2

Structural Condition of the preservation area are valued as fallows (Figure 6.16):

Ruined: 8

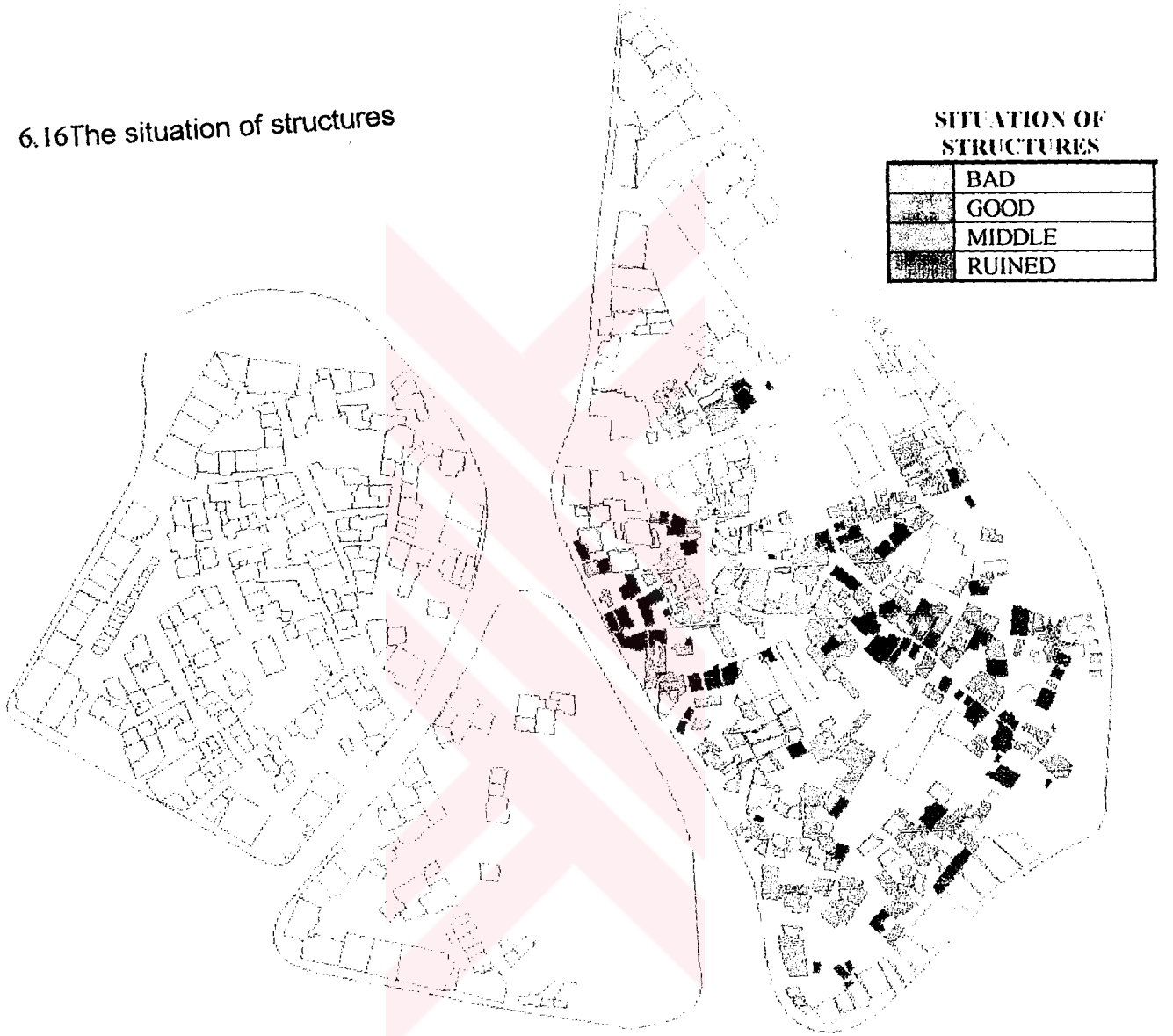
Bad: 6

Middle: 4

Good: 2

Figure 6.15 Existing structures

Figure 6.16The situation of structures



d. DATA AUTOMATION

So far the framework of workspace was drawn and the need to solve the problem. By now, the spatial and attribute data have to get into the database. Therefore, geographic database will have to be designed. The study area was determined as Istiklal Quarter. The collected data which are explained above are compiled in attribute tables.

Digitizing of existing situation and plan of Istiklal quarter will be coverage features. While digitizing the maps, there occur some errors that must be corrected. Then topology will be created and attribute tables will be built. These steps are the main phase of automation of the data. Using the determined database will be the main frame of the workspace.

After getting the spatial data, each attribute data will be put to the related spatial data. Mostly the polygons are used. Polygons will be defined with attributes deigned in polygon attribute tables. Elements of the coverages are explained in detail in Appendix F.

e. DATABASE MANAGEMENT

Two maps are joined together in order to find out the excess use of areas. In this case the main focuses on the coordinate system. Two maps must have the same coordinates so that while matching these maps there will not occur any problems.

By now, the questioning part of the study will be done. In this part we actually look for the answer of "Does the development compensate the preservation application?". Therefore, in the analysis, the determination of preserved building and their rights and to find out the excess rights given to the owners in the development zone will be the two main point of our questioning.

In the determination of the rights taken by the preserved buildings, the weights, that are explained above, are taken into account so that we can find the range of preserved buildings. Then finding out all kinds of costs (construction cost, market cost, etc.) will give us the level of development rights according to which the part of development transferred to the preserved zone.

6.2.3 QUERY CRITERIA

1) To calculate the level of changes in the situation of buildings structure in preservation area, originality criteria is taken into account. The criteria will be obtained by the total values of facades, the situation of facade elements of buildings and the situation of plans of the buildings in İstiklal Quarter.

ORIGINALITYn = VTSFBn + VTSFEBn + VTSIPn

At the end of the process, the level of originality is obtained. To weight the result the following intervals are used:

If Originality = 0 Fully changed

If 1 < Originality< 3 Mostly changed

If 4 < Originality < 6 Less changed

If 7 < Originality < 9 Unchanged

This calculation is done for the buildings in BINAS_COV which ID numbers are between 1 and 411 (for preservation area, figure 6.17).

2) After this process, the total values of type of buildings, structural condition, facades, condition of building and landuse will be added to originality results in order to find the degree of preservability called as total weight (TW).

TWn = ORIGINALITYn + VTTBn + VTSSn + VTVFBn + VESn + VLUn

The range of TW is as follows: (Done for BINAS_COV ID number between 1 and 411, figure 6.18)

Figure 6.17 The originality

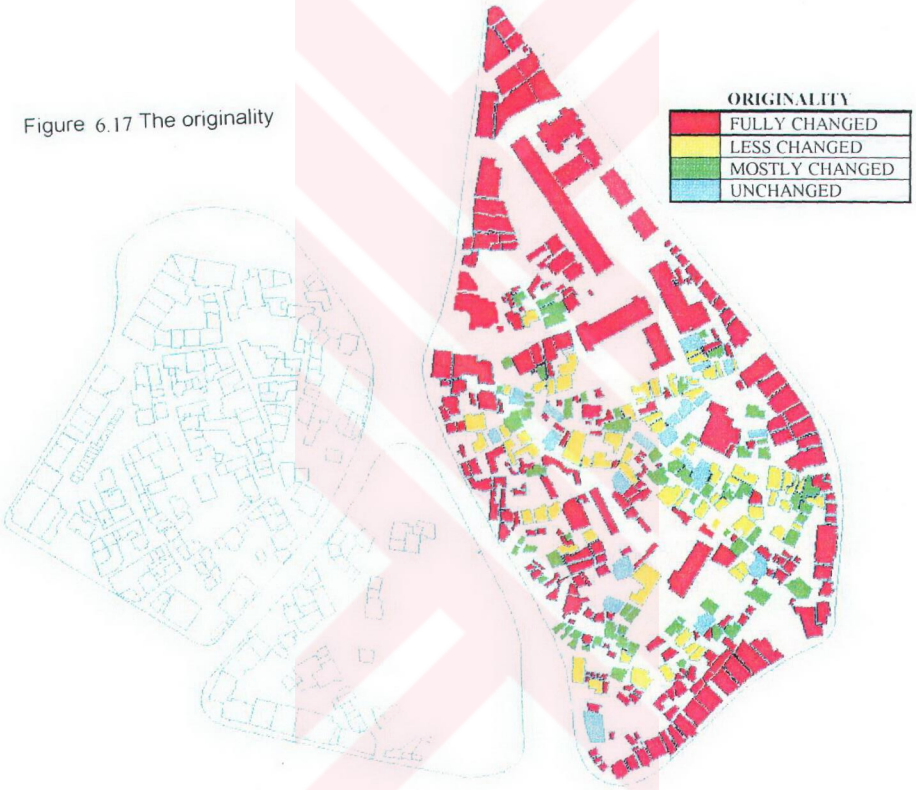
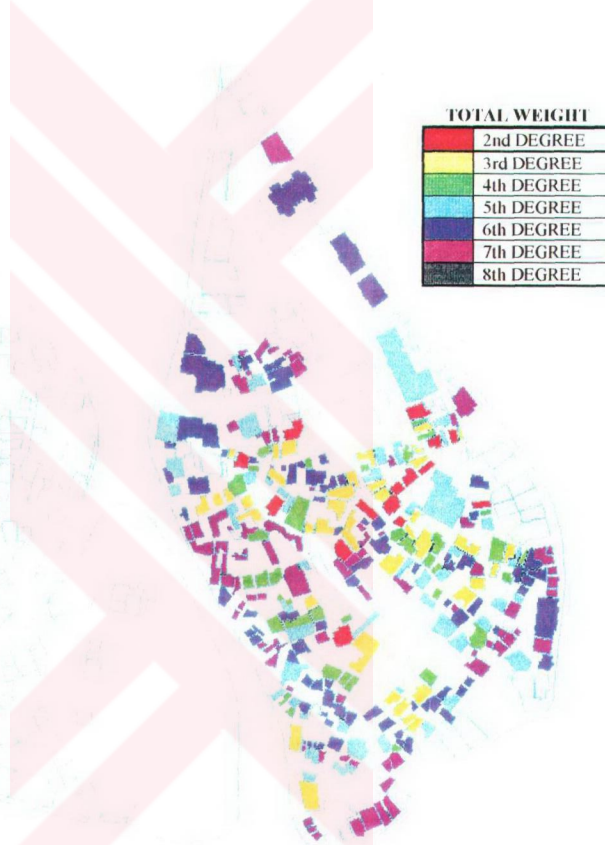


Figure 6.18 Total weight



$0 < TW < 1$	8th DEGREE
$1 < TW < 5$	7th DEGREE
$5 < TW < 10$	6th DEGREE
$10 < TW < 15$	5th DEGREE
$15 < TW < 20$	4th DEGREE
$20 < TW < 25$	3rd DEGREE
$25 < TW < 30$	2nd DEGREE
$30 < TW < 32$	1st DEGREE

After the process of weighting, the buildings according to development right criterias, the distribution of total development rights among preserved zone landowners will be started. Total development rights on preserved zone was previously determined as 36210.4 m^2. This quantity will be distributed according to:

-weights

-number of storeys

-floor area

Weights will have the coefficients like:

TW<1_____**0.125**

1<TW<5____**0.250**

5<TW<10___**0.375**

10<TW<15___**0.500**

15<TW<20___**0.625**

20<TW<25___**0.750**

25<TW<30___**0.875**

30<TW_____**1**

Number of storeys will have the coefficients like:

1st floor	**1**
2nd floor	**0.75**
3rd floor	**0.50**
4th floor	**0.25**
5th floor	**0**

3) The formula of distribution of development rights among landowners in preservation area is the multiplication of coefficient of total weights, the

coefficient of number of storey and the coefficient obtained from the following formula:

$$C3 = \frac{\text{Total of (Floor Area x C1 x C2)}}{36210.4}$$

$$DR_n = C_1 \times C_2 \times C_3 \times \text{floor area}_n$$

Where,

n: Building-ID

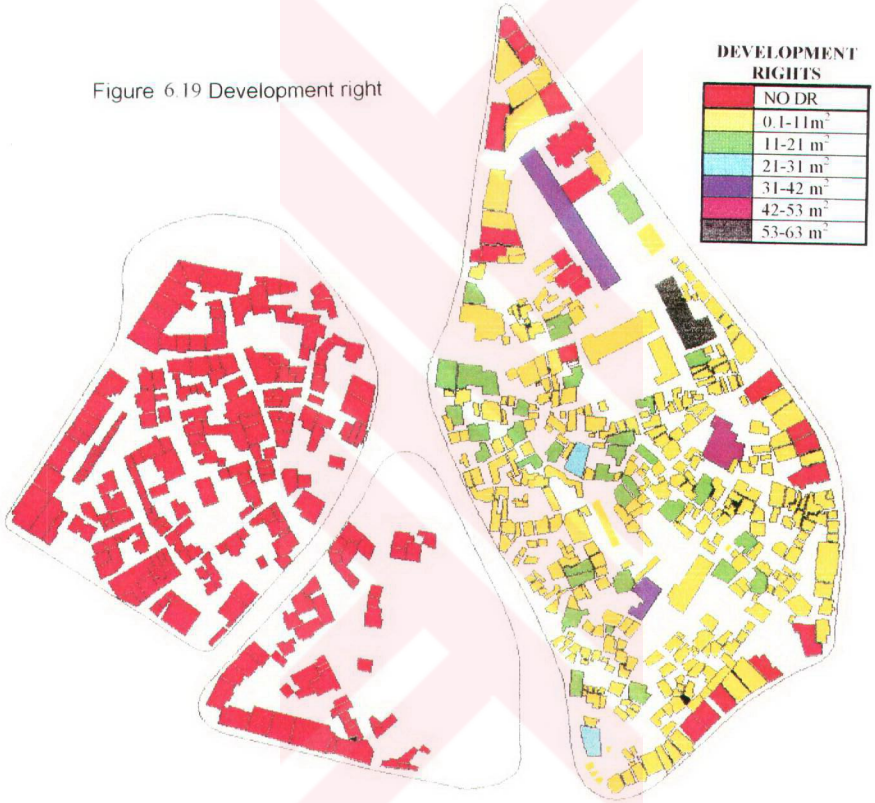
C_1: Coefficient of weights

C_2: Coefficient of number of storey

C_3: Coefficient of floor areas that will be calculated from the multiplication of C_1 and C_2 with the total floor area and divided by the total development right.

The result of the calculation could be seen on figure 6.19 which shows the distribution of development rights of landowners in the preservation area.

Figure 6.19 Development right



4) After that process, the money value of distributed development rights will be calculated by having a fixed value per m2 land as 12.000.000 TL/ m2 (R.G. 1993). This fixed price was determined according to market situation of that time (1995). Than, net income getting from the distribution of development rights will be obtained by subtracting the restoration cost of the building from the total money amount resulted from distribution of development rights:

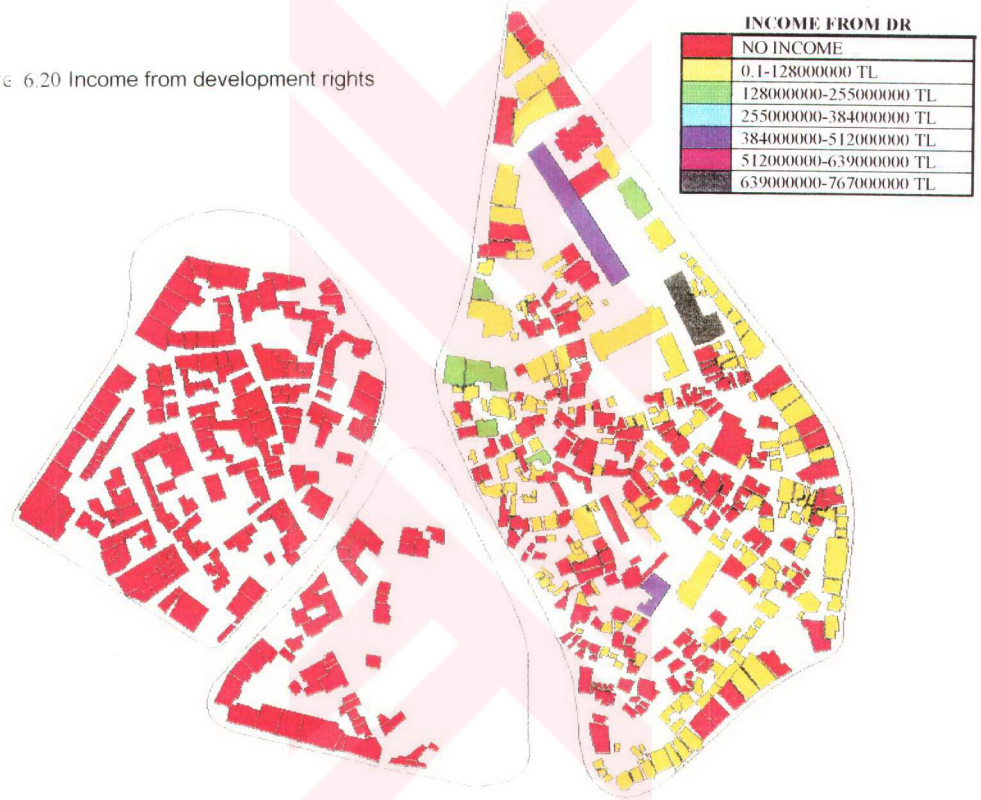
IDRCn = (DRn X 12000000) - RCn

After the subtraction of restoration cost from the amount of development rights fund, some of the buildings get more money than the others. As seen on figure 5.20, many of the buildings gain enough to restorate their buildings.

5) After the process of determining the development right prices and its distribution, compensation will be provided between the development zone and preserved zone. In order to realize it, the profit margin of the landowners in transfer area is calculated.

Total Construction Cost of Buildings determined by plan in transfer area is as fallows (the construction cost of 1 m^2 is taken as 2550000 TL .

Figure 6.20 Income from development rights



CC = Total of (FADZPn x NSDZPn x 2550000)

This calculation is done for BINA2S_COV and ID number between 1001 and 1155 (for Bitpazarı Region).

6) Total market value of the development zone have to be calculated to find out the profits of landowners in transfer area without any TDR application that means with any cost.

MV = Total of (FADZPn + NSDZPn + 35000000) which is done for the BINA2S_ COV and ID numbers between 1001 and 1055 (for Bitpazarı Region).

8) Than, we can calculate the total profit of landowners in development zone without any TDR cost:

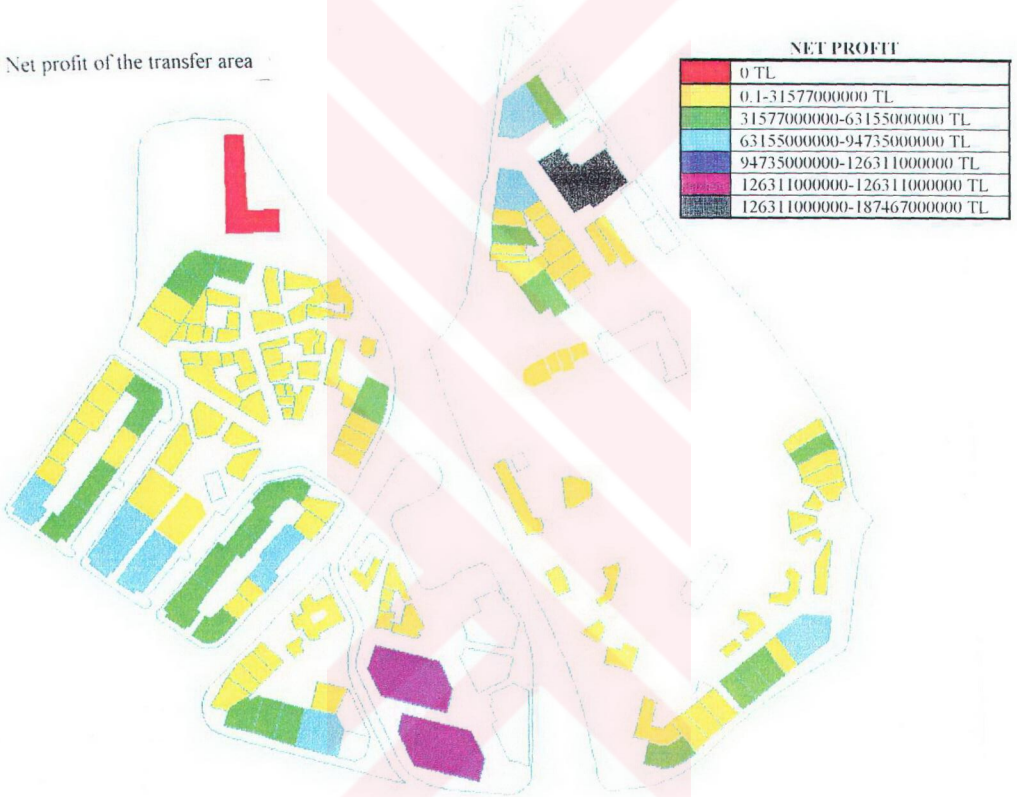
P = MV - CC.

9) Total net profit of the landowners in transfer area can be calculated after adding the TDR cost in the development zone:

NP = P- (Total of (FADZPn x NSDZPn)) x 12000000)

As seen on figure 6.21, landowners in transfer area has enough profit after, paying of development rights costs.

6.21 Net profit of the transfer area



6.2.4 RESULTS OF THE TDR IMPLEMANTATION

Different methods could be used to implement the TDR technique on such area. For example, only the phisical characteristics could be taken into account. However, historical values has also taken into calculation to reach an efficient result. By this way, in order to evaluate the program implemented in the area, 2 buildings are taken as examples.

The building with 71 code number gains 106.753.692 TL amount as a result of the TDR program implementation. This building locates in preservation area and used as residential. It has 2 number of storeys. The situation of fronts of buildings, the inner plan and the situation of fronts elements of the building are unchanged. Therefore, the originality criteria has the result of 'less changed', that means, the building has not changed from its original structure, so, it must have the priority in preservation.

It has the restoration cost of 53.217.580 TL. After the implementation of the TDR technique in the area, that building gains 53.217.580 TL + 106.753.692 TL as a restoration cost and the cost of restriction for the future development potential. However, some buildings in preservation area can not gain more than neccessary to restoren their buildings becouse of the many reasons like the building may loose the originality or having a big restoration amount.

In the transfer area, for example, 1008 coded building will be developed to 5 storeys after the development plan is implemanted in the area, and used for commercial activities. The landowners of the building gain 44.772.207.500 TL as the net suplus after deduction of the construction costs and TDR costs. So, the program provides additional funds to use in preservation area by reducing the excess profit from landowners in the transfer area.

CHAPTER VI.

CONCLUSION

According to the results of the enquiry, people living in the preservation area are not satisfied because of the conservation decision. As mentioned before, they have not enough funds to restore their houses. And day by day, the physical conditions of their houses get worse. Additionally, carried out by restoration the municipality in one street itself, was not implemented effectively. People who live in restored houses are not satisfied with the results.

The enquiry results also showed that the people in the preservation area demand funds from the municipality to restore their houses. If they take the funds, 80% of them responded that they will use it to restore their houses. On the other hand, 20% of the people will sell their houses and move to somewhere else in the city. The result proves that if the TDR program was implemented in this area, most of the problems of conservation would have been solved.

Additionally, if they could not take funds from the municipality to restore their houses, they will be willing to accept to change their houses with buildings in the transfer area. This creates an option for the different methods of TDR applications in the area.

In the transfer area, according to the results of the enquiry, 100 % of the people are waiting for the permission for multi storey structures. If they get the permissions, they will pull down the old buildings, and construct new buildings.

The most important result of the enquiry is that the people in the transfer area, have the willingness to pay for the charge which will be taken from all landowners for TDR cost.

90% of the landowners will pay the TDR cost, and make their new buildings.

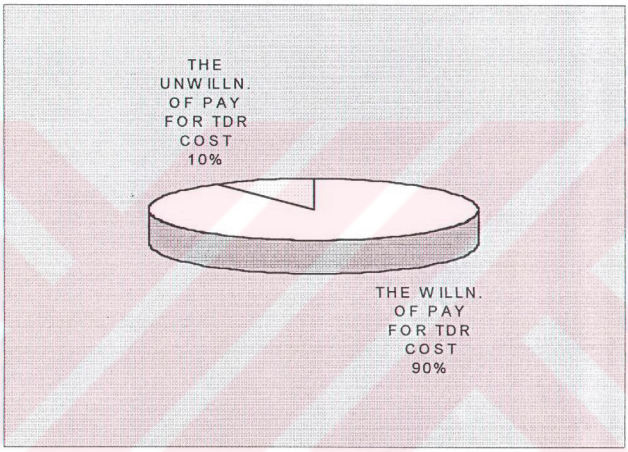


Figure 7.1 The Willingless To Pay For TDR Cost.

As a result, the application of TDR technique will be a solution of problems which belongs to historical areas. As seen from the case study, the program would be a middle point for problems between public and private sector to provide better urban areas.

In Türkiye, socio-economic conditions have been rapidly changing for the last decade. The planning system was not efficient in solving the problems of urban and rural areas in the past, and now it seems to have lost its significance and effectiveness in controlling land used developments. Therefore, revisions in

the planning system and introduction of new planning tools are required and inevitable to control physical developments in the urban and rural areas.

Transfer of developments rights technique, is used as an efficient planning tool in the United States of America. The technique is observed to provide solutions to a variety of land use problems in the USA. It could be organized and arranged according to characteristic needs of a problem area. The TDR system depends on the bundle of rights in property which can not be restricted by someone else. It operates under the assumption that all societal gains are increases resulted from changed regulations.

In Türkiye, as seen on chapter 5, there are no specific regulations for a TDR program but at the same time, there are no restrictions to discard such a technique.

The present land use techniques are not effective especially in preserving historical site areas. For this reason, possible incomes of implementation are investigated here and İstiklal Quarter is chosen as a case study to show how a TDR program could be used in preserving historical areas. Istiklal Quarter as a case, has similar problems as any historical area in Türkiye.

The main advantage of the TDR program seems to create funds both for public administration and landowners in the restricted areas. Türkiye as a developing country could not direct all its funds to the preservation of historical areas, raising of funds could both reduce impotence of public administration in land use problems, and on the other hand, provide to the landowners enough funds to preserve and conserve their buildings. As a result, historical areas can be conserved more effectively than compared to the present planning practice.

Additionally, TDR program provides social justice by shifting funds from windfallers to wipeouters.

In the case study, Bitpazarı area could exploit additional densities by the Ulus Conservation Project, while the Istiklal Quarter lose future development potential. That is, landowners in Bitpazarı area are windfallers but the landowners in Istiklal Quarter are wipeothers. Social justice could be instituted by implementing the TDR technique on the area.

On the other hand, the main framework and principles of the technique should be carefully designed, according to characteristics of problem areas before the implementation of the program. Any performance less than a competent organization of the technique will create many problems in rural and urban areas. The following questions should be clarified before the implementation of the TDR technique:

- What will be the boundaries of restricted area: The size of the restricted area effects the successfullness of a TDR program. The largest boundaries may cause to fail the program implemantation. In the case study, the boundaries of restricted area are determined according to the historical inputs. The area is small in size whcih provides an effective control on TDR technique. Bargaining process, technical application and results of the application could be controlled and desighned effectively.

On the other hand, there should be an economic analysis to determine the incentive neccessary to preserve an environmental assets or historical areas. Every TDR program has the same objective: to create an incentive that will protect environmntal, natural, historical or cuştural resources by compansating the owner for the difference between the value of that property as a resource and its speculative value for development.

- What will be the criterias to choose the transfer area: The criterias to determine the transfer area has a direct relation with a successfull TDR program, since the characteristics of transfer area creates the heart of the program.In order to implement the program effectively, the transfer area should

have enough characteristics to run the program. It should have the power to pull the unused development rights from restricted areas. In the case study, the landowners in Bitpazarı Region expect speculative gains and teherefore, land prices are highner. Additionally, it is close to old city center Ulus and the land are used for commercial activities.

The other advantage to choose the Bitpazarı region as transfer area is the closestness to restricted area which provides an effective implemantation of the TDR technique.

Additionally, the existence of a ready market for the additional space is important.For example, if a landowner in tarnsfer area, can not rent extra space or cannot gain extra profit made available by the TDR incentive, the TDR program will not be attractive.

The size of the transfer are is also an important factor to design an effective TDR program. The size must be specified on the basis of the following factors. Development approval, availability of infrastructure, density absorbtion rate, relationship to TDR's created.

- What will be the program type, voluntary or mandatory: The choice of program type implemantation has to be consistent with the characteristics of the problem area. Generally, if the market for development rights is powerfull, the type of TDR program is prefered as voluntary. Since there is no reason to put some pull factors for the unused development rights demand. Mandatory TDR programs are prefered when the market for TDR program is not enough to run the technique and if the area requires a strict control mechanisims. In Turkish case, it will be better to choose a mandatory TDR program to implement the technique efectively for historical areas. Therefore, the public has fully control on the areas and on the program in order to prevent undesired results.

Additionally, political situation in the community at that time tarnsfer of development rights program is proposed is also an effective factor.If there is a strong political support for the concept of protecting historical areas, a mandatory TDR program may be preferred.

In USA, in a mandatory program, the zoning classification of the protected resources is changed by or advance so that the speculative development potential of the resource is eliminated.

The advantage of the mandatory program is that it guarantees that the protected resource will be protected from future development pressure. However, voluntary TDR programs are easier to initiate than a mandatory one.

- Which organization will implement the technique:Some problem areas require a public organizatiobn to control or to implement the program while the others may not need a public organization when a free market mechanism is enough for a successfull TDR program. In Turkish case, TDR program has to be in control on a public organization which may be the municipality in problem area. Because, the program will be a new technique to implement, and control on any TDR program is a crutial factor for an effective TDR program implementation.

- Is it neccassary to establish a TDR bank: If the control mechanisms of the program are adequate and if the market for development rights are strong, a bank may not be required from the TDR program. In the USA, a TDR bank is preferable when the market for development right is established for long-run or the market for development right is not powerfull. In these cases, preservation area landowners sell their unused development rights to the bank, and when the demand occurs for these development rights, the bank will sell them to the transfer area landowners.

- What will be the technique in calculation development rights: The characteristics of problem area and the purpose of the program implemantation determine the method of calculation of unused development rights. In the USA, development rights are calculated generally, according to the number of storeys or the size of the parcel, that is, according to phisical characteristics of the program area. However, these inputs are not enough to implement the program effectively. Therefore, in Istiklal Quarter, development rights are calculated according to both physical characteristics and historical characteristics of the buildings in preservation area.

- What will be the transfer type: Transfer type is the important factor design an effective program since a rational landowner want to gain an efficient profit for their restricted future development potential. In Istiklal Quarter, the money is choosen as transfer type since the buildings are to be restorated.

- Who are the actors affected by the TDR program: Identification of the actors and motivation of each sector in the real estate market place is another important factor to design an efficicient TDR program, since the identification of actors, determination of their needs and desires, their traditional role in development process directly affect the successfullness of TDR program.

There are four essential actors in any TDR program; the developer of land in transfer area, the owner of property in restricted area, the local government, the mortgage lenders on property.

In Türkiye, the last actor may vary according to the problem area, since at present there is not strictly mortgage lenders on property. They may be the real estate brokers or speculators in urban areas.

- What will be the control mechanisms after implementation of TDR program: The control process after the implemantation of the TDR Program

could be provided present public autorities. Controlling of the area prevents the undesired situations.

These answers of questions are most important in consideration of implementation of the TDR technique in Türkiye. If there are any undetermined points in the framework of the program, the result of the implementation would fail.

As seen in the case study, historical areas can be conserved by the TDR technique, since it creates funds to the both public autorization and the people living in such areas. The technique can be seen as a new finantial resource from this point of view. Transfer of the rents in Bitpazarı Region could be a finantial resource for the İstiklal Quarter. By the implemantation of the technique, the excess rents which will be created by development plan for the Bitpazarı Region, could provide to conserve the historical assets in the preservation area.

There may be some disadvantages of the implemantation of thechnique on such areas. Firstly, there may occur some administration problems, if the size of the selected area is large. In this case, the aggrement process between the transfer area and the preservation area could be so complicated that the program would fail and has a negative results on both areas. Secondly, social justice in distribution of development rights and the correct program design is most important factors for a successful TDR program implemantation.

The program design should consider both economical and social conditions. The problem area characteristics have to be taken into account as an initial point.

In the case study, both phisical volume and historical value of the buildings are considered. Some programs which were implemented in USA takes into consideration only phisical volumes of the restricted buildings. This criteria would be so important factor that effect a successful TDR

implementation. Therefore, both the phisical volumes and the historical characteristics of the restricted buildings are taken into account to find out the relative proportion of each building from the total volume of unused development rights. By this way other characteristics of a preservation area are considered.

Therefore, all the characteristics of the problem area should be carefuly taken into consideration to design a program. In this case, TDR will be a new tool for Turkish planning system to achieve desired land use patterns and to solve problems in urban and rural areas and to provide social justice.

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APPENDIX A ABBREVIATIONS

FOR PRESERVED ZONE:

PRESERVED ZONE: **PZ**

NUMBER OF STOREY: **FA**

LANDUSE: **LU**

THE SITUATION OFFACADES: **TSFB**

CONDITION OF BUILDINGS: **ES**

OWNERSHIP: **OWN**

THE SITUATION OF FACADE ELEMENTS OF BUILDINGS: **TSFEB**

THE SITUATION OF PLAN: **TSIP**

THE TYPE OF BUILDING: **TTB**

THE STRUCTURAL CONDITION: **TSS**

THE VALUATION OF FACADES: **TVFB**

RESTORATION COST: **RC**

VALUE OF TSFB: **VTSFB** VALUE OF TSIP: **VTSIP**

VALUE OF TSFEB: **VTSFEB** VALUE OF TTB: **VTTB**

VALUE OF TVFB: **VTVFB** VALUE OF ES: **VES**

VALUE OF LU: **VLU** VALUE OF TSS: **VTSS**

INCOME GETTING FROM DEVELOPMENT RIGHT COST: **IDRC**

TOTAL WEIGHT: **TW**

DISTRIBUTION OF DEVELOPMENT RIGHTS ACCORDING TO FORMULA: **DR**

FOR DEVELOPMENT ZONE DETERMINED BY PLAN:

DEVELOPMENT ZONE DETERMINED BY PLAN: **DZP**

NUMBER OF STOREY: **NSDZP**

CONSTRUCTION COST: **CC**

MARKET VALUE: **MV**

PROFIT: **P**

TDR COST: **TDRC**

NET PROFIT: **NP**

LANDUSE: **LUDZP**

THE TYPE OF BUILDINGS: **TTBDZP**

FOR EXISTING DEVELOPMENT ZONE:

EXISTING DEVELOPMENT ZONE: **EDZ**

NUMBER OF STOREY: **FAEDZ**

THE TYPE OF BUILINGS: **TTBEDZ**

APPENDIX B QUERIES OF PRESERVATION AND CONSERVATION AREAS

PRESERVATION AREA

A. ADDRESS

1) STREET 2) NUMBER

B. OWNERSHIP

3) TENANTS OWNERS

4) HOW MANY PERSONS OWN THE BUILDING

5) HOW MANY PERSONS OWN THE PLOT

C. THE ECONOMIC AND SOCIAL STRUCTURE

6) THE PERIOD OF USING THE HOUSE :

7) THE NUMBER OF PEOPLE LIVES IN THE HOUSE :

8) THE NUMBER OF WORKERS IN THE HOUSE :

9) THE GLADNESS OF PHYSICAL STRUCTURE OF THE HOUSE

A- SATISFIED B- NOT SATISFIED

10) THE REASONS OF UNPLEASENT:

11) DO THEY WANT TO MOVE TO A DIFFERENT QUARTER IN THE CITY?

TO WHERE?

12) HOW IS THE NEIGHBOORHOOD RELATIONSHIPS?

13) HOW DIDTHEY EFFECT FROM THE CONSERVATION DECISION?

D. THE INFORMATION ABOUT TDR PROGRAM

14) DO THEY WANT FINANCIAL SUPPROT FROM THE MUNICIPALITY?

15) IF THEY GET FINANCIAL SUPPORT:

A- THEY USE THE FUND TO RESTORATE THEIR BUILDINGS AND CONTINUE TO LIVE THE AREA

B- THEY WILL SELL THEIR BUILDINGS AND MOVE TO ANOTHER QUARTER

C- OTHERS

16) DO THEY ACCEPT TO BARTER THEIR HOUSES WITH BUILDINGS IN TRANSFER AREA?

17) IF NOT WHY:

TRANSFER AREA

A. ADDRESS

1) STREET: 2) NO:

B. OWNERSHIP

3) TENANTS OWNERS

4) HOW MANY PERSONS OWN THE BUILDING

C. THE SOCIAL AND ECONOMICAL STRUCTURE

5) LAND USE:

6) THE PERIOD OF USING THE BUILDING:

7) THE GLADNESS OF INCOME:

8) THE GLADNESS OF PHYSICAL STRUCTURE OF THE HOUSE

A-SATISFIED B- NOT SATISFIED

9) DO THEY WANT TO MOVE TO A DIFFERENT QUARTER IN THE CITY?

TO WHERE?

10) HOW ARE THEIR SOCIAL AND COMMERCIAL RELATIONSHIPS WITH NEIGHBORHOODS?

THE INFORMATION ABOUT TDR PROGRAM

11) (IF THE BUILDING WERE NOT DEVELOPED)WHEN WILL THEY CONSTRUCTS THEIR BUILDINGS?

12) IF THE NUMBER OF STOREYS ARE INCREASED BY PLAN TO 5, WHAT WILL BE THEIR THOUGHTS?

13) IF THE RIGHTS TO DEVELOP THAT WERE GIVEN BY THE PLAN ARE CANCELLED, WHAT WILL BE THEIR THOUGHTS?

14) IF THE PERMISSION OF THE RIGHTS TO DEVELOP ONLY DEPENDS ON THE TDR COST:

A- THEY WILL PAY THE TDR COST AND CONSTRUCT THEIR NEW BUILDINGS

B- THEY WILL NOT PAY THE TDR COST AND WILL STAY IN THEIR OLD BUILDINGS

C- OTHERS

1051	COMMERCIAL	2	PRESER.\PLAN	5009023000
1052	COMMERCIAL	2	0	4805341000
1053	COMMERCIAL	2	PRESER.\PLAN	3880183000
1054	COMMERCIAL	4	0	27453716000
1055	COMMERCIAL	6	0	84914535000
1056	COMMERCIAL	5	0	36193432500
1057	COMMERCIAL	5	0	34917352500
1058	COMMERCIAL	5	0	37781375000
1059	COMMERCIAL	5	0	29678062500
1060	COMMERCIAL	5	0	20525665000
1061	COMMERCIAL	5	0	22098270000
1062	COMMERCIAL	5	0	17745487500
1063	COMMERCIAL	2	PRESER.\PLAN	3957484000
1064	COMMERCIAL	2	PRESER.\PLAN	25518737000
1065	COMMERCIAL	2	PRESER.\PLAN	4504317000
1066	COMMERCIAL	2	0	3614742000
1067	COMMERCIAL	2	PRESER.\PLAN	4997162000
1068	COMMERCIAL	2	PRESER.\PLAN	2211054000
1069	COMMERCIAL	2	PRESER.\PLAN	2454409000
1070	COMMERCIAL	2	0	8722334000
1071	COMMERCIAL	2	0	10880627000
1072	ANKARA U.	4	0	1.27314E+11
1073	ANKARA U.	4	0	1.31225E+11
1074	GAZI	0	0	0
1075	COMMERCIAL	6	0	68639607000
1076	COMMERCIAL	4	0	17647532000
1077	COMMERCIAL	6	0	38968293000
1078	COMMERCIAL	6	0	17490885000
1079	COMMERCIAL	2	0	5327225000
1080	COMMERCIAL	5	0	12861005000
1081	COMMERCIAL	5	0	19063490000
1082	COMMERCIAL	5	0	25871295000
1083	COMMERCIAL	4	0	21052048000
1084	COMMERCIAL	5	0	21692337500
1085	COMMERCIAL	4	0	28795236000
1086	COMMERCIAL	4	0	34108146000
1087	COMMERCIAL	1	0	4649512000
1088	COMMERCIAL	2	0	12119488000
1089	COMMERCIAL	6	0	1.89467E+11
1090	COMMERCIAL	6	0	82509615000
1091	COMMERCIAL	5	0	38359087500
1092	COMMERCIAL	5	0	13401907500
1093	COMMERCIAL	5	0	12829307500
1094	COMMERCIAL	5	0	11121732500
1095	COMMERCIAL	4	PRESER.\PLAN	20216870000
1096	COMMERCIAL	5	0	28213842500
1097	COMMERCIAL	6	0	33740046000
1098	COMMERCIAL	6	0	28536339000
1099	COMMERCIAL	6	0	24389079000
1100	COMMERCIAL	5	0	16663682500
1101	COMMERCIAL	2	0	3875684000
1102	COMMERCIAL	2	0	7232756000
1103	COMMERCIAL	2	0	3595928000

APPPENDIX C: TRANSFER AREA VALUES				
BDZP-ID	LUDZP	NSDZP	TTBDZP	NP
1001	COMMERCIAL	5	0	28901985000
1002	COMMERCIAL	5	0	28439815000
1003	COMMERCIAL	5	0	25299717500
1004	COMMERCIAL	5	0	16716852500
1005	COMMERCIAL	5	0	21856960000
1006	COMMERCIAL	6	0	27514248000
1007	COMMERCIAL	7	0	71222851000
1008	COMMERCIAL	5	0	44772207500
1009	COMMERCIAL	4	0	35919198000
1010	COMMERCIAL	4	0	28888488000
1011	COMMERCIAL	4	0	48023962000
1012	COMMERCIAL	5	0	94514787500
1013	COMMERCIAL	4	0	66770886000
1014	COMMERCIAL	1	0	12541576000
1015	COMMERCIAL	3	0	24627730500
1016	MUNICIPALITY	2	0	14684327000
1017	MUNICIPALITY	2	0	9361601000
1018	MUNICIPALITY	2	0	10849543000
1019	COMMERCIAL	5	0	57362250000
1020	COMMERCIAL	4	0	52280016000
1021	COMMERCIAL	4	0	60413390000
1022	COMMERCIAL	5	0	24541022500
1023	COMMERCIAL	5	0	22738355000
1024	COMMERCIAL	5	0	63490092500
1025	COMMERCIAL	5	0	17296610000
1026	COMMERCIAL	5	0	17054277500
1027	COMMERCIAL	5	0	37997122500
1028	COMMERCIAL	2	0	10880627000
1029	COMMERCIAL	2	0	21124032000
1030	COMMERCIAL	2	0	6031932000
1031	COMMERCIAL	2	0	9538698000
1032	COMMERCIAL	2	PRESER.\PLAN	6551771000
1033	COMMERCIAL	2	PRESER.\PLAN	6611485000
1034	COMMERCIAL	2	PRESER.\PLAN	5320272000
1035	COMMERCIAL	2	PRESER.\PLAN	3664231000
1036	COMMERCIAL	2	0	10290031000
1037	COMMERCIAL	2	PRESER.\PLAN	10475308000
1038	COMMERCIAL	2	0	8700248000
1039	COMMERCIAL	2	PRESER.\PLAN	9255670000
1040	COMMERCIAL	2	PRESER.\PLAN	10333385000
1041	COMMERCIAL	2	0	7053614000
1042	COMMERCIAL	6	0	61199079000
1043	COMMERCIAL	6	0	26155959000
1044	COMMERCIAL	5	0	22511360000
1045	COMMERCIAL	4	0	16816444000
1046	COMMERCIAL	6	0	37151106000
1047	COMMERCIAL	6	0	44524149000
1048	COMMERCIAL	6	0	36659079000
1049	COMMERCIAL	2	0	10227454000
1050	COMMERCIAL	2	0	7290834000

1104	COMMERCIAL	2	0	10697804000
1105	COMMERCIAL	5	0	73407320000
1106	COMMERCIAL	6	0	38590377000
1107	COMMERCIAL	6	0	32502003000
1108	COMMERCIAL	6	0	32567034000
1109	COMMERCIAL	6	0	29455362000
1110	COMMERCIAL	5	0	30883590000
1111	COMMERCIAL	5	0	30078882500
1112	COMMERCIAL	4	0	22490092000
1113	COMMERCIAL	4	0	41291822000
1114	COMMERCIAL	2	0	19252448000
1115	COMMERCIAL	2	0	10281033000
1116	COMMERCIAL	2	0	8476525000
1117	COMMERCIAL	2	0	3722718000
1118	COMMERCIAL	2	0	10936251000
1119	COMMERCIAL	2	0	5238472000
1120	COMMERCIAL	2	0	8219264000
1121	COMMERCIAL	2	0	7461796000
1122	COMMERCIAL	2	0	20022186000
1123	COMMERCIAL	2	0	13052826000
1124	COMMERCIAL	2	PRESER.\PLAN	4463008000
1125	COMMERCIAL	2	PRESER.\PLAN	2582835000
1126	COMMERCIAL	2	PRESER.\PLAN	5237245000
1127	COMMERCIAL	2	PRESER.\PLAN	2053589000
1128	COMMERCIAL	2	PRESER.\PLAN	2791425000
1129	COMMERCIAL	2	PRESER.\PLAN	2217189000
1130	COMMERCIAL	2	0	3478954000
1131	COMMERCIAL	2	0	7293697000
1132	COMMERCIAL	2	PRESER.\PLAN	5194709000
1133	COMMERCIAL	2	0	9308840000
1134	COMMERCIAL	2	0	1912484000
1135	COMMERCIAL	2	0	12219693000
1136	COMMERCIAL	2	0	3094903000
1137	COMMERCIAL	2	0	2335390000
1138	COMMERCIAL	2	PRESER.\PLAN	4491638000
1139	COMMERCIAL	2	PRESER.\PLAN	12219693000
1140	COMMERCIAL	2	0	24982947000

APPENDIX D: PRESERVATION AREA VALUES

BPZ-ID	LU	VLU	NOS	TSS	VTSS	TSFB	VTSFB	TSFEB	VTSFEB	TSIP	VTSIP	TVFB	VTVFB	TTB	VTTB	ES	YES	RC	OWN	ORIGINA	ORIGINALITY	TW	TW	C2	C1	DR	IDRC
1	COMMERCIAL	1	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 126	0	0
2	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	6th DEGREE	0	0 125	0	0
3	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 125	0	0
4	COMMERCIAL	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	9th DEGREE	0 75	0 125	6 43	77156966
5	COMMERCIAL	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 5	0 125	0 2	2345708
6	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 25	0 125	1 55	18598096
7	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	9th DEGREE	0 25	0 125	1 15	13827909
8	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	8	7th DEGREE	0	0 25	0	0
9	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	6th DEGREE	0 25	0 125	2 99	35772014
10	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 125	0	0
11	PUBLIC-EDUCATION	2	5	0	0	0	0	0	0	0	0	0	0	REGISTERED	8	0	0	0	0	0	FULLY CHANGED	10	6th DEGREE	0	0 375	0	0
12	PUBLIC-EDUCATION	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	5th DEGREE	1	0 125	5 19	82378755
13	PUBLIC-EDUCATION	2	3	0	0	0	0	0	0	0	0	0	0	REGISTERED	8	0	0	0	0	0	FULLY CHANGED	10	6th DEGREE	0 5	0 375	13 19	158335147
14	PUBLIC-EDUCATION	2	3	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	9	6th DEGREE	0 5	0 375	10 09	121138950
15	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 125	0	0
16	COMMERCIAL	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	1	0 125	38 39	456636383
17	PUBLIC-EDUCATION	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	6th DEGREE	0 5	0 125	5 05	60653250
18	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	6th DEGREE	0 25	0 125	1 47	17597764
20	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 125	0	0
21	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 125	0	0
22	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 125	0	0
23	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 25	0 125	0 82	7455893
24	COMMERCIAL	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 5	0 125	0 73	8712627
25	COMMERCIAL	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 5	0 125	1 2	14355720
26	SERVICE	2	1	0	0	0	0	0	0	0	0	0	0	REGISTERED	8	0	0	0	0	0	FULLY CHANGED	10	6th DEGREE	1	0 375	11 9	142782112
27	SERVICE	2	4	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	9	6th DEGREE	0 25	0 375	10 14	121641602
28	RELIGIOUS	2	1	0	0	0	0	0	0	0	0	4th DEGREE	1 5	0	0	0	0	0	0	0	FULLY CHANGED	3 5	8th DEGREE	1	0 125	0 68	8186566
29	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	6	7th DEGREE	1	0 25	0 7	8344011
30	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	9	7th DEGREE	0 75	0 25	0 98	11731893
31	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	0	0	0	0	3rd DEGREE	1	528,745,400	0	2	MOSTLY CHANGED	9	6th DEGREE	0 75	0 375	2 82	-4916894 76
32	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	6th DEGREE	0 6	0	0	4th DEGREE	0 6	0	0	0	FULLY CHANGED	7	7th DEGREE	1	0 25	0 82	7439239
33	RESIDENTIAL-COMMERCIAL	2	3	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	3rd DEGREE	1	913,422,600	0	0	FULLY CHANGED	7	7th DEGREE	0 5	0 25	2 64	-881788031
34	RESIDENTIAL-COMMERCIAL	2	3	BAD	6	LESS CHANGED	2	LESS CHANGED	2	LESS CHANGED	2	6th DEGREE	0 6	0	0	2nd DEGREE	1 5	1,375,014,100	0	6	LESS CHANGED	16	5th DEGREE	0 5	0 6	4 23	-1324212814
35	RESIDENTIAL	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	1	0 125	1 9	2277680
36	RESIDENTIAL	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	1	0 125	1 01	12154107
37	RESIDENTIAL-COMMERCIAL	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	0	0 125	0	0
38	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	0	8th DEGREE	0	0 125	0	0
39	0	0	1	BAD	6	0	0	0	0	0	0	0	0	0	0	0	0	451,981,000	0	0	FULLY CHANGED	6	7th DEGREE	1	0 25	3 99	40408845
40	0	0	1	BAD	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	8	7th DEGREE	1	0 25	1 37	16460153
41	RESIDENTIAL-COMMERCIAL	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	0	0 125	0	0
42	RESIDENTIAL	2	2	BAD	6	0	0	LESS CHANGED	2	0	0	0	0	0	0	3rd DEGREE	1	737,120,100	0	2	MOSTLY CHANGED	11	6th DEGREE	0 75	0 375	3 94	-686883449
43	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	9	7th DEGREE	1	0 25	1 09	13082336
44	RESIDENTIAL-COMMERCIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	4th DEGREE	1 5	0	0	3rd DEGREE	1	477,127,300	0	2	MOSTLY CHANGED	10 5	6th DEGREE	0 75	0 375	11 65	-334064981
45	RESIDENTIAL	2	2	GOOD	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	4	8th DEGREE	0 75	0 125	0 55	6587210
46	RESIDENTIAL	2	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 6	0	0	0	FULLY CHANGED	4 5	7th DEGREE	1	0 25	2 68	24938204
47	RESIDENTIAL	2	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	3rd DEGREE	1	12,822,810	0	0	FULLY CHANGED	5	7th DEGREE	1	0 25	4 89	48205882
48	COMMERCIAL	1	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	3	8th DEGREE	1	0 125	0 28	3347651
49	RELIGIOUS	2	2	0	0	0	0	0	0	0	0	1st DEGREE	3	MONUMENTAL	9	0	0	0	0	0	FULLY CHANGED	14	5th DEGREE	0 75	0 5	19 05	226605787
50	SERVICE	2	3	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	9	6th DEGREE	0 5	0 375	18 71	200522668
51	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	13	5th DEGREE	1	0 5	3 57	42799078
52	0	0	1	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	4th DEGREE	0 5	0	0	0	FULLY CHANGED	7 5	6th DEGREE	1	0 25	1 48	17720137
53	COMMERCIAL	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 75	0 125	1 84	220588
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	0	8th DEGREE	0	0 125	0	9
55	0	0	1	BAD	6	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	819,025,680	0	0	FULLY CHANGED	13	5th DEGREE	1	0 5	12 73	-666233105
56	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	0	8th DEGREE	1	0 125	0 95	11384620
57	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	0	8th DEGREE	1	0 125	4 3	5159547
58	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 6	0	0	0	FULLY CHANGED	0 5	6th DEGREE	1	0 125	0 78	9459
59	0	0	1	GOOD	2	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	8	6th DEGREE	1	0 375	3 86	46254
60	0	0	3	RUINED	8	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	749,917,500	0	0	FULLY CHANGED	15	5th DEGREE	0 5	0 5	2 5	-716048
61	0	0	3	GOOD	2	0	0	0	0	0	0	0	0	0	0	0	0	749,917,500	0	0	FULLY CHANGED	2	6th DEGREE	0 5	0 125	0 57	-7401
62	0	0	1	BAD	6	LESS CHANGED	2	LESS CHANGED	2	0	0	4th DEGREE	1 5	0	0	4th DEGREE	0 6	0	0	4	LESS CHANGED	12	6th DEGREE	1	0 375	12 12	145447165
63	RESIDENTIAL	2	1	GOOD	2	LESS CHANGED	2	UNCHANGED	3	MOSTLY CHANGED	1	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	551,878,100	RENTERS	6	LESS CHANGED	22	3rd DEGREE	1	0 75	14 38	-379607455
64	0	0	1	RUINED	8	FULLY CHANGED	0	FULLY CHANGED	0	0	0	4th DEGREE	1 5	0	0	2nd DEGREE	1 5	0	0	0	FULLY CHANGED	11	6th DEGREE	1	0 375	3 11	37286669
65	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	LESS CHANGED	2	3rd DEGREE	2	PRESER VPLAN	7	3rd DEGREE	1	275,938,050	RENTERS	7	UNCHANGED	23	3rd DEGREE	0 75	0 75	7 11	-1906189027
66	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	LESS CHANGED	2	0	0	2nd DEGREE	2 5	PRESER VPLAN	7	3rd DEGREE	1	0	RENTERS	4	LESS CHANGED	20 5	3rd DEGREE	0 75	0 75	5 37	64449943
67	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	FULLY CHANGED	0	0	0	2nd DEGREE	1	PRESER VPLAN	7	2nd DEGREE	1 5	275,938,050	0	2	MOSTLY CHANGED	17 5	4th DEGREE	0 75	0 625	12 36	-12765
68	RESIDENTIAL	2	2	GOOD	2	MOSTLY CHANGED	1	FULLY CHANGED	0	MOSTLY CHANGED	1	6th DEGREE	0 5	PRESER VPLAN	7	2nd DEGREE	1 5	265,560,600	OWNERS	2	MOSTLY CHANGED	15	5th DEGREE	0 75	0 5	4 8	-20797

69	RESIDENTIAL-COMMERCIAL	2	2	BAD	6	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	5th DEGREE	1	PRESER VPLAN	7	3rd DEGREE	1	0	0		2	MOSTLY CHANGED	19	4th DEGREE	0.75	0.625	3.02	3b7e1420
70	RESIDENTIAL-COMMERCIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	6th DEGREE	0.5	0	0	3rd DEGREE	1	0	0		2	MOSTLY CHANGED	9.5	6th DEGREE	0.75	0.375	1.45	17294246
71	RESIDENTIAL	2	2	GOOD	2	UNCHANGED	3	UNCHANGED	3	UNCHANGED	3	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	53,217,500	RENTERS		8	UNCHANGED	25	2nd DEGREE	0.75	0.875	13.33	1061536[illegible]
72	COMMERCIAL	1	2	GOOD	2	LESS CHANGED	2	UNCHANGED	3	0	0	2nd DEGREE	2.5	REGISTERED	8	3rd DEGREE	1	234,632,900	RENTERS		5	LESS CHANGED	19.5	3rd DEGREE	0.75	0.625	3.01	-198567673
73	COMMERCIAL	1	1	MIDDLE	4	0	0	UNCHANGED	3	0	0	3rd DEGREE	2	0	0	3rd DEGREE	1	0	0		3	MOSTLY CHANGED	11	6th DEGREE	1	0.375	1.6	19211331
74	RESIDENTIAL-COMMERCIAL	2	4	0	0	0	0	UNCHANGED	3	0	0	0	0	0	0	0	0	57,683,730	0		3	MOSTLY CHANGED	5	7th DEGREE	0.25	0.25	0.61	-50555075
75	RESIDENTIAL-COMMERCIAL	2	4	0	0	0	0	0	0	0	0	2nd DEGREE	2.5	REGISTERED	8	0	0	0	0		0	FULLY CHANGED	12.5	5th DEGREE	0.25	0.5	4.9	58748870
76	RESIDENTIAL-COMMERCIAL	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	FULLY CHANGED	2	8th DEGREE	0.25	0.125	0.63	7555685
77	RESIDENTIAL-COMMERCIAL	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	FULLY CHANGED	2	8th DEGREE	0.25	0.125	0.82	9843587
78	RESIDENTIAL-COMMERCIAL	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	FULLY CHANGED	2	8th DEGREE	0	0.125	0	0
79	RESIDENTIAL	2	3	BAD	6	MOSTLY CHANGED	1	UNCHANGED	3	LESS CHANGED	2	1st DEGREE	3	PRESER VPLAN	7	3rd DEGREE	1	1,768,888,000	OWNERS		6	LESS CHANGED	26	2nd DEGREE	0.5	0.875	12.42	-1609865309
80	RESIDENTIAL	2	3	MIDDLE	4	0	0	UNCHANGED	3	LESS CHANGED	2	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	633,958,800	OWNERS		5	LESS CHANGED	23	3rd DEGREE	0.5	0.75	8.35	-533719888
81	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	0	0	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	407,452,200	RENTERS		5	LESS CHANGED	23	3rd DEGREE	0.75	0.75	8.1	-334285285
82	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	MOSTLY CHANGED	1	1st DEGREE	3	0	0	2nd DEGREE	1.5	423,538,600	RENTERS		6	LESS CHANGED	16.5	4th DEGREE	0.75	0.625	5.34	-358450566
83	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	MOSTLY CHANGED	1	0	0	0	0	4th DEGREE	0.5	0	RENTERS		1	MOSTLY CHANGED	7.5	7th DEGREE	1	0.25	2.27	27183379
84	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	8.5	7th DEGREE	1	0.25	1.83	21942402
85	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	8.5	7th DEGREE	1	0.25	0.43	5160553
86	PUBLIC-EDUCATION	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	FULLY CHANGED	2	8th DEGREE	0.25	0.125	4.93	59210641
87	PUBLIC-EDUCATION	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	FULLY CHANGED	2	8th DEGREE	0.75	0.125	6.66	78883849
88	RESIDENTIAL-COMMERCIAL	2	2	GOOD	2	FULLY CHANGED	0	FULLY CHANGED	0	0	0	6th DEGREE	0.5	0	0	3rd DEGREE	1	43,897,210	RENTERS		0	FULLY CHANGED	5.5	7th DEGREE	0.75	0.25	1.83	-21956483
89	RESIDENTIAL-COMMERCIAL	2	2	GOOD	2	FULLY CHANGED	0	0	0	0	0	6th DEGREE	0.5	0	0	3rd DEGREE	1	51,262,290	RENTERS		0	FULLY CHANGED	5.5	7th DEGREE	0.75	0.25	2.62	-17288622
90	RESIDENTIAL	2	2	GOOD	2	FULLY CHANGED	0	FULLY CHANGED	0	0	0	3rd DEGREE	2	0	0	3rd DEGREE	1	60,091,650	RENTERS		0	FULLY CHANGED	7	7th DEGREE	0.75	0.25	5.12	11327305
91	RESIDENTIAL	2	1	MIDDLE	4	MOSTLY CHANGED	1	UNCHANGED	3	0	0	2nd DEGREE	2.5	0	0	3rd DEGREE	1	407,452,200	RENTERS		4	LESS CHANGED	13.5	5th DEGREE	1	0.5	8.13	-309857434
92	RESIDENTIAL	2	2	MIDDLE	4	UNCHANGED	3	LESS CHANGED	2	0	0	4th DEGREE	1.5	REGISTERED	8	2nd DEGREE	1.5	0	RENTERS		5	LESS CHANGED	22	3rd DEGREE	0.75	0.75	7.72	88677181
93	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	0	0	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	0	RENTERS		5	LESS CHANGED	23	3rd DEGREE	0.75	0.75	11.09	133137239
94	RESIDENTIAL	2	1	MIDDLE	4	0	0	FULLY CHANGED	0	0	0	5th DEGREE	1	0	0	3rd DEGREE	1	419,285,000	0		0	FULLY CHANGED	8	7th DEGREE	1	0.25	7.91	-324337531
95	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	UNCHANGED	3	0	0	REGISTERED	8	4th DEGREE	0.5	439,049,800	RENTERS		3	MOSTLY CHANGED	17.5	4th DEGREE	0.75	0.625	7.48	-348939552
96	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	204,975,500	RENTERS		0	FULLY CHANGED	8.5	7th DEGREE	1	0.25	4.36	-162713174
97	RESIDENTIAL	2	2	GOOD	2	LESS CHANGED	2	UNCHANGED	3	0	0	5th DEGREE	1	PRESER VPLAN	7	2nd DEGREE	1.5	265,662,700	RENTERS		5	LESS CHANGED	19.5	4th DEGREE	0.75	0.625	7.07	-200764804
98	RESIDENTIAL	2	2	GOOD	2	LESS CHANGED	2	UNCHANGED	3	0	0	5th DEGREE	1	PRESER VPLAN	7	3rd DEGREE	1	39,213,540	RENTERS		5	LESS CHANGED	18	4th DEGREE	0.75	0.625	6.47	82435109
99	RESIDENTIAL	2	2	GOOD	2	LESS CHANGED	2	LESS CHANGED	2	0	0	5th DEGREE	1	PRESER VPLAN	7	3rd DEGREE	1	60,091,650	RENTERS		4	LESS CHANGED	17	4th DEGREE	0.75	0.625	6.3	25532230
100	RESIDENTIAL	2	1	MIDDLE	4	0	0	FULLY CHANGED	0	0	0	0	0	0	0	3rd DEGREE	1	311,688,200	0		0	FULLY CHANGED	7	7th DEGREE	1	0.25	2.29	-294323866
101	COMMERCIAL	1	1	BAD	6	0	0	FULLY CHANGED	0	0	0	6th DEGREE	0.5	0	0	3rd DEGREE	1	142,994,090	0		0	FULLY CHANGED	8.5	6th DEGREE	1	0.375	8.11	-60637167
102	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	470,831,700	0		0	FULLY CHANGED	8.5	7th DEGREE	0.75	0.25	2.83	-436947449
103	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	868,764,900	0		0	FULLY CHANGED	7	7th DEGREE	1	0.25	5.52	-802495390
104	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	8.5	7th DEGREE	1	0.25	2.24	26848279
105	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	8.5	7th DEGREE	1	0.25	1.82	21661878
106	RESIDENTIAL	2	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	4.5	7th DEGREE	1	0.25	0.74	8826556
107	RESIDENTIAL	2	2	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	4.5	7th DEGREE	0.75	0.25	2.34	28032690
108	RESIDENTIAL	2	2	GOOD	2	0	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	32,483,000	0		0	FULLY CHANGED	5	7th DEGREE	0.75	0.25	4.64	22049834
109	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	8.5	7th DEGREE	1	0.25	3.42	41090064
110	RESIDENTIAL	2	1	0	0	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	2.5	8th DEGREE	1	0.125	0.47	5612939
111	RESIDENTIAL	2	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	4.5	7th DEGREE	1	0.25	0.65	7848061
112	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	REGISTERED	8	3rd DEGREE	1	300,776,100	RENTERS		0	FULLY CHANGED	15	5th DEGREE	1	0.5	2.15	-274919720
113	RESIDENTIAL	2	3	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	LESS CHANGED	2	0	0	PRESER VPLAN	7	2nd DEGREE	1.5	609,929,000	RENTERS		8	UNCHANGED	22.5	3rd DEGREE	0.5	0.75	8.26	-534983699
114	RESIDENTIAL	2	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	2nd DEGREE	1.5	0	RENTERS		0	FULLY CHANGED	5.5	7th DEGREE	1	0.25	0.21	2486448
115	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	4th DEGREE	1.5	0	0	3rd DEGREE	1	0	RENTERS		0	FULLY CHANGED	8.5	6th DEGREE	1	0.375	1.41	16969606
116	RESIDENTIAL	2	2	BAD	6	MOSTLY CHANGED	1	FULLY CHANGED	0	0	0	5th DEGREE	1	0	0	3rd DEGREE	1	887,841,000	RENTERS		1	MOSTLY CHANGED	11	6th DEGREE	0.75	0.375	4.89	-611869723
117	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	5th DEGREE	1	0	0	3rd DEGREE	1	0	0		0	FULLY CHANGED	10	6th DEGREE	1	0.375	1.54	18497613
118	RESIDENTIAL	2	1	BAD	6	0	0	LESS CHANGED	2	0	0	5th DEGREE	1	PRESER VPLAN	7	3rd DEGREE	1	577,688,200	RENTERS		2	MOSTLY CHANGED	19	4th DEGREE	1	0.625	3.67	-533639196
119	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	4th DEGREE	1.5	0	0	3rd DEGREE	1	0	RENTERS		0	FULLY CHANGED	10.5	6th DEGREE	1	0.375	2.6	31164321
120	RESIDENTIAL	2	2	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	4th DEGREE	0.5	458,748,900	RENTERS		0	FULLY CHANGED	8.5	6th DEGREE	0.75	0.375	7.51	-369678723
121	RESIDENTIAL	2	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	4.5	7th DEGREE	1	0.25	0.25	3052780
122	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	8.5	6th DEGREE	1	0.375	2.28	27092849
123	RESIDENTIAL	2	1	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	4th DEGREE	0.5	351,785,500	RENTERS		0	FULLY CHANGED	8.5	6th DEGREE	1	0.375	5.11	-290512313
124	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	0	0	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		2	MOSTLY CHANGED	8.5	6th DEGREE	0.75	0.375	2.17	25892043
125	RESIDENTIAL	2	2	GOOD	2	LESS CHANGED	2	UNCHANGED	3	0	0	1st DEGREE	3	REGISTERED	8	1st DEGREE	2	48,497,250	RENTERS		5	LESS CHANGED	22	3rd DEGREE	0.75	0.75	8.11	48801337
126	RESIDENTIAL	2	2	MIDDLE	4	0	0	UNCHANGED	3	0	0	1st DEGREE	3	REGISTERED	8	2nd DEGREE	1.5	418,170,500	RENTERS		3	MOSTLY CHANGED	21.5	3rd DEGREE	0.75	0.75	16.39	-233606982
127	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	0	0	2nd DEGREE	2.5	REGISTERED	8	3rd DEGREE	1	418,170,500	RENTERS		6	LESS CHANGED	22.5	3rd DEGREE	0.75	0.75	13.88	-251617009
128	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	0	0	2nd DEGREE	2.5	0	0	1st DEGREE	2	265,662,700	RENTERS		0	FULLY CHANGED	10.5	6th DEGREE	0.75	0.375	1.34	-268602[illegible]
129	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	0	0	2nd DEGREE	2.5	REGISTERED	8	1st DEGREE	2	526,957,300	RENTERS		5	LESS CHANGED	23.5	3rd DEGREE	0.75	0.75	13.33	-367023726
130	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	0	0	2nd DEGREE	2.5	REGISTERED	8	2nd DEGREE	1.5	0	RENTERS		5	LESS CHANGED	23	3rd DEGREE	0.75	0.75	5.24	62926810
131	RESIDENTIAL	2	2	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	0	0	0	0	PRESER VPLAN	7	3rd DEGREE	1	1,233,618,000	RENTERS		6	LESS CHANGED	20	4th DEGREE	0.75	0.625	23.55	-951040035
132	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	6th DEGREE	0.5	PRESER VPLAN	7	4th DEGREE	0.5	489,890,000	0		0	FULLY CHANGED	16	5th DEGREE	1	0.5	4.75	-432842435
133	RESIDENTIAL	2	2	BAD	6	UNCHANGED	3	LESS CHANGED	2	LESS CHANGED	2	4th DEGREE	1.5	REGISTERED	8	3rd DEGREE	1	489,890,000	RENTERS		7	UNCHANGED	25.5	2nd DEGREE	0.75	0.875	15.09	-388895329
134	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	PRESER VPLAN	7	4th DEGREE	0.5	489,890,000	0		0	FULLY CHANGED	13.5	5th DEGREE	1	0.5	3.26	-450780435
135	RESIDENTIAL	2	2	GOOD	2	LESS CHANGED	2	LESS CHANGED	2	MOSTLY CHANGED	1	3rd DEGREE	2	PRESER VPLAN	7	3rd DEGREE	1	0	RENTERS		5	LESS CHANGED	19	4th DEGREE	0.75	0.625	2.36	26304298
136	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	LESS CHANGED	2	LESS CHANGED	2	3rd DEGREE	2	PRESER VPLAN	7	2nd DEGREE	1.5	526,957,300	OWNERS		5	LESS CHANGED	21.5	3rd DEGREE	0.75	0.75	10.88	-386403416
137	RESIDENTIAL	2	3	MIDDLE	4	FULLY CHANGED	0	LESS CHANGED	2	LESS CHANGED	2	3rd DEGREE	2	0	0	3rd DEGREE	1	0	RENTERS		4	LESS CHANGED	13	5th DEGREE	0.5	0.5	3.64	43677042

138	RESIDENTIAL	2	2	GOOD	2	0	0	0	0	0	0	1st DEGREE	3	PRESER \PLAN	7	3rd DEGREE	1	62,268,550	RENTERS		0	FULLY CHANGED	15	5th DEGREE	0.75	0.5	5.44	2977680
139	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	282,958,800	RENTERS		0	FULLY CHANGED	6.5	7th DEGREE	0.75	0.25	1.21	-268497624
140	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	LESS CHANGED	2	LESS CHANGED	2	3rd DEGREE	2	0	0	3rd DEGREE	1	282,958,800	RENTERS		5	LESS CHANGED	14	5th DEGREE	0.75	0.5	5.06	222188317
141	RESIDENTIAL	2	3	BAD	6	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	4th DEGREE	1.5	PRESER \PLAN	7	3rd DEGREE	1	585,352,000	RENTERS		2	MOSTLY CHANGED	19.5	4th DEGREE	0.5	0.625	3.45	-52[illegible]
142	RESIDENTIAL	2	3	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	0	0	0	0	PRESER \PLAN	7	1st DEGREE	2	585,352,000	RENTERS		6	LESS CHANGED	21	3rd DEGREE	0.5	0.75	1.02	-553107416
143	RESIDENTIAL	2	3	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	0	0	1st DEGREE	3	PRESER \PLAN	7	1st DEGREE	2	289,377,900	RENTERS		6	LESS CHANGED	24	3rd DEGREE	0.5	0.75	1.83	-278764448
144	RESIDENTIAL	2	3	BAD	6	LESS CHANGED	2	LESS CHANGED	2	MOSTLY CHANGED	1	2nd DEGREE	2.5	PRESER \PLAN	7	2nd DEGREE	1.5	289,377,900	RENTERS		6	LESS CHANGED	24	3rd DEGREE	0.5	0.75	5.39	-234867586
145	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	LESS CHANGED	2	UNCHANGED	3	1st DEGREE	3	PRESER \PLAN	7	2nd DEGREE	1.5	289,377,900	OWNERS		7	UNCHANGED	24.5	2nd DEGREE	0.75	0.875	7.24	-212539871
146	RESIDENTIAL	2	3	GOOD	2	UNCHANGED	3	UNCHANGED	3	UNCHANGED	3	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	82,583,470	RENTERS		8	UNCHANGED	26	2nd DEGREE	0.5	0.875	7.78	10740436
147	RESIDENTIAL	2	3	GOOD	2	UNCHANGED	3	UNCHANGED	3	UNCHANGED	3	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	63,241,760	RENTERS		8	UNCHANGED	26	2nd DEGREE	0.5	0.875	6.48	2531831
148	0	0	2	RUINED	8	UNCHANGED	3	UNCHANGED	3	0	0	1st DEGREE	3	PRESER \PLAN	7	0	0	1,323,915,000	0		6	LESS CHANGED	24	3rd DEGREE	0.75	0.75	8.07	-1227074211
149	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	LESS CHANGED	2	LESS CHANGED	2	1st DEGREE	3	REGISTERED	8	0	0	484,955,200	RENTERS		6	LESS CHANGED	23	3rd DEGREE	0.75	0.75	8.62	-381484335
150	RESIDENTIAL-COMMERCIAL	2	4	MIDDLE	4	LESS CHANGED	2	LESS CHANGED	2	UNCHANGED	3	1st DEGREE	3	REGISTERED	8	2nd DEGREE	1.5	704,731,700	RENTERS		7	UNCHANGED	25.5	2nd DEGREE	0.25	0.875	4.52	-650469680
151	RESIDENTIAL-COMMERCIAL	2	2	GOOD	2	MOSTLY CHANGED	1	FULLY CHANGED	0	0	0	5th DEGREE	1	0	0	3rd DEGREE	1	19,442,240	RENTERS		1	MOSTLY CHANGED	7	7th DEGREE	0.75	0.25	0.89	-7649512
152	RESIDENTIAL-COMMERCIAL	2	2	GOOD	2	MOSTLY CHANGED	1	FULLY CHANGED	0	0	0	5th DEGREE	1	0	0	3rd DEGREE	1	19,442,240	RENTERS		1	MOSTLY CHANGED	7	7th DEGREE	0.75	0.25	0.92	-8388933
153	COMMERCIAL	1	1	MIDDLE	4	0	0	0	0	0	0	4th DEGREE	1.5	0	0	3rd DEGREE	1	40,168,880	0		0	FULLY CHANGED	7.5	7th DEGREE	1	0.25	1.87	-20187986
154	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	5th DEGREE	1	0	0	3rd DEGREE	1	0	0		0	FULLY CHANGED	8	7th DEGREE	1	0.25	1.39	16687916
155	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	FULLY CHANGED	0	0	0	4th DEGREE	1.5	0	0	4th DEGREE	0.5	1,033,218,000	RENTERS		1	MOSTLY CHANGED	9	6th DEGREE	0.75	0.375	2.43	-1004024018
156	0	0	2	RUINED	8	0	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	8	6th DEGREE	0.75	0.375	1.54	18449814
157	0	0	2	RUINED	8	0	0	0	0	0	0	4th DEGREE	1.5	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	10	6th DEGREE	0.75	0.375	2.39	28718979
158	RESIDENTIAL	2	2	BAD	6	0	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	9	6th DEGREE	0.75	0.375	1.29	15639463
159	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	4th DEGREE	1.5	PRESER \PLAN	7	0	0	311,638,700	RENTERS		0	FULLY CHANGED	16.5	4th DEGREE	1	0.625	2.83	-281269910
160	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	0	0	0	0	PRESER \PLAN	7	3rd DEGREE	1	0	0		0	FULLY CHANGED	14	5th DEGREE	0.75	0.5	3.21	38482979
161	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	0	0	0	0	1st DEGREE	3	PRESER \PLAN	7	2nd DEGREE	1.5	0	RENTERS		2	MOSTLY CHANGED	19.5	4th DEGREE	0.75	0.625	2.12	25409021
162	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	LESS CHANGED	2	LESS CHANGED	2	2nd DEGREE	2.5	PRESER \PLAN	7	2nd DEGREE	1.5	294,614,800	OWNERS		6	LESS CHANGED	23	3rd DEGREE	0.75	0.75	8.03	-189298715
163	RESIDENTIAL	2	2	MIDDLE	4	0	0	FULLY CHANGED	0	0	0	3rd DEGREE	2	PRESER \PLAN	7	4th DEGREE	0.5	294,614,800	RENTERS		0	FULLY CHANGED	16.5	4th DEGREE	0.75	0.5	5.28	-231552175
164	RESIDENTIAL	2	2	BAD	6	0	0	FULLY CHANGED	0	0	0	3rd DEGREE	2	0	0	4th DEGREE	0.5	415,370,450	RENTERS		0	FULLY CHANGED	10.5	6th DEGREE	0.75	0.375	2.57	-384525266
165	RESIDENTIAL	2	2	GOOD	2	FULLY CHANGED	0	FULLY CHANGED	0	0	0	5th DEGREE	1	0	0	1st DEGREE	2	87,688,050	RENTERS		0	FULLY CHANGED	7	7th DEGREE	0.75	0.25	2.34	-39599899
166	RESIDENTIAL	2	2	BAD	6	0	0	0	0	0	0	0	0	0	0	3rd DEGREE	1	0	RENTERS		0	FULLY CHANGED	9	6th DEGREE	0.75	0.375	1.38	18353758
167	RESIDENTIAL	2	1	BAD	6	FULLY CHANGED	0	FULLY CHANGED	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	687,841,000	RENTERS		0	FULLY CHANGED	9	6th DEGREE	1	0.375	4.45	-614459438
168	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	0	0	PRESER \PLAN	7	4th DEGREE	0.5	415,370,450	RENTERS		0	FULLY CHANGED	15.5	5th DEGREE	1	0.5	11.21	-280974280
169	RESIDENTIAL	2	2	BAD	6	0	0	0	0	0	0	4th DEGREE	1.5	PRESER \PLAN	7	4th DEGREE	0.5	687,948,800	RENTERS		0	FULLY CHANGED	17	4th DEGREE	0.75	0.625	11.81	-525033284
170	RESIDENTIAL	2	2	0	0	LESS CHANGED	2	UNCHANGED	3	0	0	5th DEGREE	1	0	0	4th DEGREE	0.5	0	RENTERS		5	LESS CHANGED	8.5	6th DEGREE	0.75	0.375	3.64	43723118
171	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	5th DEGREE	1	PRESER \PLAN	7	4th DEGREE	0.5	565,917,600	RENTERS		2	MOSTLY CHANGED	16.5	4th DEGREE	0.75	0.625	9.06	-457219269
172	0	0	2	MIDDLE	4	0	0	LESS CHANGED	2	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	0	0		2	MOSTLY CHANGED	7	7th DEGREE	0.75	0.25	0.88	10580809
173	0	0	1	BAD	6	0	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	7	7th DEGREE	1	0.25	2.08	24885118
174	0	0	1	BAD	6	0	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	729,203,800	0		0	FULLY CHANGED	7	7th DEGREE	1	0.25	3.82	-683362006
175	RESIDENTIAL	2	1	BAD	6	FULLY CHANGED	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	9	6th DEGREE	1	0.375	3.47	41689941
176	RESIDENTIAL	2	1	BAD	6	FULLY CHANGED	0	FULLY CHANGED	0	0	0	6th DEGREE	0.5	PRESER \PLAN	7	4th DEGREE	0.5	1,171,088,000	RENTERS		0	FULLY CHANGED	18	5th DEGREE	1	0.5	17.41	-982182850
177	RESIDENTIAL	2	1	BAD	6	FULLY CHANGED	0	FULLY CHANGED	0	0	0	6th DEGREE	0.5	0	0	3rd DEGREE	1	258,320,300	0		0	FULLY CHANGED	9.5	6th DEGREE	1	0.375	3.07	-222038033
178	RESIDENTIAL	2	2	BAD	6	FULLY CHANGED	0	FULLY CHANGED	0	0	0	6th DEGREE	0.5	0	0	3rd DEGREE	1	0	RENTERS		0	FULLY CHANGED	9.5	6th DEGREE	0.75	0.375	2.87	34441683
179	RESIDENTIAL	2	1	BAD	6	FULLY CHANGED	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	175,775,600	RENTERS		0	FULLY CHANGED	9	6th DEGREE	1	0.375	19.05	52778922
180	RESIDENTIAL	2	2	MIDDLE	4	UNCHANGED	3	LESS CHANGED	2	LESS CHANGED	2	1st DEGREE	3	0	0	1st DEGREE	2	625,573,600	RENTERS		7	UNCHANGED	18	4th DEGREE	0.75	0.625	10.28	-502108891
181	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	3rd DEGREE	2	PRESER \PLAN	7	3rd DEGREE	1	0	RENTERS		2	MOSTLY CHANGED	18	4th DEGREE	0.75	0.625	4.11	67284541
182	RESIDENTIAL	2	2	GOOD	2	LESS CHANGED	2	MOSTLY CHANGED	1	0	0	1st DEGREE	3	PRESER \PLAN	7	1st DEGREE	2	458,488,800	RENTERS		3	MOSTLY CHANGED	18	4th DEGREE	0.75	0.625	5.38	-391783018
183	RESIDENTIAL	2	1	0	0	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	3rd DEGREE	2	0	0	2nd DEGREE	1.5	151,071,000	RENTERS		2	MOSTLY CHANGED	7.5	7th DEGREE	1	0.25	1.94	-127808300
184	RESIDENTIAL	2	1	RUINED	8	0	0	MOSTLY CHANGED	1	0	0	0	0	0	0	4th DEGREE	0.5	651,218,600	0		1	MOSTLY CHANGED	11.5	6th DEGREE	1	0.375	7.61	561050918
185	RESIDENTIAL	2	1	MIDDLE	4	MOSTLY CHANGED	1	FULLY CHANGED	0	0	0	0	0	0	0	2nd DEGREE	1.5	161,851,100	RENTERS		1	MOSTLY CHANGED	8.5	6th DEGREE	1	0.375	4.3	-110289135
186	RESIDENTIAL	2	2	GOOD	2	MOSTLY CHANGED	1	FULLY CHANGED	0	0	0	2nd DEGREE	2.5	0	0	2nd DEGREE	1.5	22,148,410	OWNERS		1	MOSTLY CHANGED	9	6th DEGREE	0.75	0.375	3.09	14311563
187	RESIDENTIAL	2	2	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	0	0	2nd DEGREE	2.5	0	0	2nd DEGREE	1.5	178,825,600	0		6	LESS CHANGED	16	5th DEGREE	0.75	0.5	3.91	-128838292
188	RESIDENTIAL	2	2	BAD	6	0	0	0	0	0	0	0	0	0	0	3rd DEGREE	1	0	RENTERS		0	FULLY CHANGED	9	6th DEGREE	0.75	0.375	1.18	14144606
189	RESIDENTIAL	2	2	BAD	6	0	0	0	0	0	0	5th DEGREE	1	0	0	4th DEGREE	0.5	0	RENTERS		0	FULLY CHANGED	9.5	6th DEGREE	0.75	0.375	0.87	10369801
200	RESIDENTIAL	2	2	0	0	0	0	MOSTLY CHANGED	1	0	0	0	0	0	0	4th DEGREE	0.5	0	RENTERS		1	MOSTLY CHANGED	3.5	8th DEGREE	0.75	0.125	0.77	9271402
201	RESIDENTIAL	2	1	0	0	FULLY CHANGED	0	MOSTLY CHANGED	1	0	0	4th DEGREE	1.5	PRESER \PLAN	7	3rd DEGREE	1	102,487,750	RENTERS		1	MOSTLY CHANGED	12.5	5th DEGREE	1	0.5	1.82	-80598964
202	RESIDENTIAL	2	2	0	0	FULLY CHANGED	0	0	0	0	0	4th DEGREE	1.5	PRESER \PLAN	7	4th DEGREE	0.5	102,487,750	RENTERS		0	FULLY CHANGED	11	6th DEGREE	0.75	0.375	2.61	-71160011
203	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	0	0	0	0	4th DEGREE	1.5	PRESER \PLAN	7	4th DEGREE	0.5	203,726,100	OWNERS		1	MOSTLY CHANGED	16	5th DEGREE	0.75	0.5	2.78	-170551119
204	RESIDENTIAL	2	2	BAD	6	MOSTLY CHANGED	1	0	0	0	0	4th DEGREE	1.5	PRESER \PLAN	7	3rd DEGREE	1	203,726,100	RENTERS		1	MOSTLY CHANGED	18.5	4th DEGREE	0.75	0.625	2.76	-170777311
205	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	5th DEGREE	1	PRESER \PLAN	7	3rd DEGREE	1	332,309,000	RENTERS		2	MOSTLY CHANGED	17	4th DEGREE	0.75	0.625	3.56	-289608777
206	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	0	0	0	0	5th DEGREE	1	PRESER \PLAN	7	4th DEGREE	0.5	332,309,000	RENTERS		1	MOSTLY CHANGED	15.5	5th DEGREE	0.75	0.5	3.1	-285153020
207	RESIDENTIAL	2	2	GOOD	2	0	0	0	0	0	0	1st DEGREE	3	0	0	4th DEGREE	0.5	0	0		0	FULLY CHANGED	7.5	7th DEGREE	0.75	0.25	0.6	7218072
208	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	0	0	2nd DEGREE	2.5	REGISTERED	8	2nd DEGREE	1.5	684,094,500	RENTERS		5	LESS CHANGED	23	3rd DEGREE	0.75	0.75	18.77	-482827914
209	RESIDENTIAL	2	1	BAD	6	0	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	229,627,200	RENTERS		0	FULLY CHANGED	9	6th DEGREE	1	0.375	0.63	-223283741
210	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	5th DEGREE	1	0	0	4th DEGREE	0.5	229,627,200	RENTERS		0	FULLY CHANGED	7.5	7th DEGREE	1	0.25	0.52	-223414431
211	RESIDENTIAL	2	1	BAD	6	JOINT BUILDING	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	229,627,200	RENTERS		0	FULLY CHANGED	9	6th DEGREE	1	0.375	0.84	-218317547
212	RESIDENTIAL	2	2	BAD	6	JOINT BUILDING	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	229,627,200	RENTERS		0	FULLY CHANGED	9	6th DEGREE	0.75	0.375	0.56	-223007283
212	RESIDENTIAL	2	2	BAD	6	JOINT BUILDING	0	0	0	0	0	6th DEGREE	0.5	0	0	4th DEGREE	0.5	229,627,200	RENTERS		0	FULLY CHANGED	9	6th DEGREE	0.75	0.375	0.98	-218081354
214	RESIDENTIAL	2	3	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	0	0	1st DEGREE	3	0	0	4th DEGREE	0.5	242,477,800	RENTERS		6	LESS CHANGED	15.5	5th DEGREE	0.5	0.5	3.88	-185858803
215	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0.5	242,477,600	RENTERS		0	FULLY CHANGED	6.5	7th DEGREE	0.75	0.25	1.11	-229107077
216	RESIDENTIAL	2	2	MIDDLE	4	MOSTLY CHANGED	1	MOSTLY CHANGED	1	0	0	4th DEGREE	1.5	0	0	3rd DEGREE	1	470,931,700	RENTERS		2	MOSTLY CHANGED	10.5	6th DEGREE	0.75	0.375	4.51	-416848839

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217	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	UNCHANGED	3	0	0	2nd DEGREE	2 5	0	0	2nd DEGREE	1 5	626,957,300	RENTERS	5	LESS CHANGED	15	6th DEGREE	0 75	0 5	13 03	-370582650
218	RESIDENTIAL	2	1	MIDDLE	4	JOINT BUILDING	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	161,415,900	RENTERS	0	FULLY CHANGED	6 5	7th DEGREE	1	0 25	1 47	-143918404
219	RESIDENTIAL	2	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	161,415,900	RENTERS	0	FULLY CHANGED	8 5	7th DEGREE	1	0 25	1 22	-148826610
220	RESIDENTIAL	2	2	MIDDLE	4	0	0	0	0	0	0	0	0	PRESER VPLAN	7	4th DEGREE	0 5	161,415,000	RENTERS	0	FULLY CHANGED	13 5	6th DEGREE	0 75	0 375	1 74	-140523201
221	RESIDENTIAL	2	2	MIDDLE	4	JOINT BUILDING	0	0	0	0	0	0	0	PRESER VPLAN	7	4th DEGREE	0 5	161,415,900	RENTERS	0	FULLY CHANGED	13 5	5th DEGREE	0 75	0 375	2 95	-127260748
222	RESIDENTIAL	2	2	BAD	6	JOINT BUILDING	0	0	0	0	0	6th DEGREE	0 5	PRESER VPLAN	7	4th DEGREE	0 5	344,221,500	RENTERS	0	FULLY CHANGED	16	5th DEGREE	0 75	0 5	3 79	-268781827
223	RESIDENTIAL	2	2	MIDDLE	4	UNCHANGED	3	LESS CHANGED	2	LESS CHANGED	2	1st DEGREE	3	PRESER VPLAN	7	3rd DEGREE	1	861,848,300	RENTERS	7	UNCHANGED	24	3rd DEGREE	0 75	0 75	26 29	-548259775
224	COMMERCIAL	1	2	BAD	6	0	0	0	0	0	0	6th DEGREE	0 5	0	0	0	0	0	0	0	FULLY CHANGED	7 5	7th DEGREE	0 75	0 25	1 34	16034575
225	COMMERCIAL	1	2	BAD	6	0	0	0	0	0	0	6th DEGREE	0 5	0	0	0	0	0	0	0	FULLY CHANGED	7 5	7th DEGREE	0 75	0 25	0 99	11777119
226	COMMERCIAL	1	2	BAD	6	0	0	0	0	0	0	6th DEGREE	0 5	0	0	0	0	0	0	0	FULLY CHANGED	7 5	7th DEGREE	0 75	0 25	1 08	12707024
227	COMMERCIAL	1	2	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	3 5	8th DEGREE	0 75	0 125	0 38	4356473
228	COMMERCIAL	1	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	3 5	8th DEGREE	1	0 125	0 4	4771836
229	COMMERCIAL	1	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	3 5	8th DEGREE	1	0 125	0 83	6972601
230	COMMERCIAL	1	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	3 5	8th DEGREE	1	0 125	0 26	3123140
231	COMMERCIAL	1	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	3 5	8th DEGREE	1	0 125	0 08	703712
232	COMMERCIAL	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	1	0 125	2 74	32880094
233	RESIDENTIAL-COMMERCIAL	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	0 75	0 125	1 21	14483790
234	RESIDENTIAL-COMMERCIAL	2	3	0	0	0	0	0	0	0	0	1st DEGREE	3	0	0	0	0	0	0	0	FULLY CHANGED	5	7th DEGREE	0 5	0 25	2 18	26111057
235	RESIDENTIAL-COMMERCIAL	2	2	0	0	0	0	0	0	0	0	1st DEGREE	3	0	0	0	0	0	0	0	FULLY CHANGED	6	7th DEGREE	0 75	0 25	6 27	75211708
236	COMMERCIAL	1	2	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	8	7th DEGREE	0 75	0 25	3 43	41197296
237	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	8	7th DEGREE	0 25	0 25	1 23	14714277
238	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 25	0 125	0 99	11906133
239	RESIDENTIAL-COMMERCIAL	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	0	0 125	0	0
240	RESIDENTIAL-COMMERCIAL	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	0	0 125	0	0
241	COMMERCIAL	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	1	0 125	1 72	20595287
242	COMMERCIAL	1	1	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	5 5	7th DEGREE	1	0 25	3 03	36412056
243	COMMERCIAL	1	2	GOOD	2	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	3 5	8th DEGREE	0 75	0 125	1 25	15026759
244	COMMERCIAL	1	2	MIDDLE	4	0	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	5 5	7th DEGREE	0 75	0 25	1 49	17824013
245	0	0	2	MIDDLE	4	FULLY CHANGED	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	4 5	7th DEGREE	0 75	0 25	3 13	37507836
246	COMMERCIAL	1	2	BAD	6	FULLY CHANGED	0	0	0	0	0	6th DEGREE	0 5	0	0	3rd DEGREE	1	0	0	0	FULLY CHANGED	9 5	6th DEGREE	0 75	0 375	3 38	40541338
247	RESIDENTIAL	2	2	BAD	6	JOINT BUILDING	0	0	0	0	0	5th DEGREE	1	PRESER VPLAN	7	4th DEGREE	0 5	853,771,000	RENTERS	0	FULLY CHANGED	16 5	4th DEGREE	0 75	0 625	2 56	-633722370
248	RESIDENTIAL	2	2	BAD	6	JOINT BUILDING	0	0	0	0	0	5th DEGREE	1	0	0	4th DEGREE	0 5	853,771,000	RENTERS	0	FULLY CHANGED	9 5	6th DEGREE	0 75	0 375	1 14	-640139098
249	RESIDENTIAL	2	2	MIDDLE	4	LESS CHANGED	2	MOSTLY CHANGED	1	0	0	0	0	0	0	2nd DEGREE	1 5	761,381,600	RENTERS	3	MOSTLY CHANGED	10 5	6th DEGREE	0 75	0 375	1 4	-244530117
250	RESIDENTIAL	2	2	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	0	0	3rd DEGREE	2	0	0	2nd DEGREE	1 5	390,716,600	RENTERS	6	LESS CHANGED	15 5	5th DEGREE	0 75	0 5	5 68	-322788311
251	RESIDENTIAL	2	1	BAD	6	FULLY CHANGED	0	FULLY CHANGED	0	0	0	4th DEGREE	1 5	0	0	2nd DEGREE	1 5	297,312,600	RENTERS	0	FULLY CHANGED	11	6th DEGREE	1	0 375	5 17	-225295489
252	RESIDENTIAL	2	1	BAD	6	FULLY CHANGED	0	FULLY CHANGED	0	0	0	4th DEGREE	1 5	0	0	1st DEGREE	2	1,035,317,000	RENTERS	0	FULLY CHANGED	11 5	6th DEGREE	1	0 375	5 82	-987891367
253	RESIDENTIAL	2	2	BAD	6	LESS CHANGED	2	MOSTLY CHANGED	1	0	0	4th DEGREE	1 5	PRESER VPLAN	7	1st DEGREE	2	592,937,000	RENTERS	3	MOSTLY CHANGED	21 5	3rd DEGREE	0 75	0 75	9 02	-494656389
254	RESIDENTIAL	2	1	RUINED	8	JOINT BUILDING	0	0	0	MOSTLY CHANGED	1	5th DEGREE	1	0	0	3rd DEGREE	1	592,937,000	RENTERS	1	MOSTLY CHANGED	13	5th DEGREE	1	0 5	1 83	-570867790
255	RESIDENTIAL	2	2	BAD	6	JOINT BUILDING	0	0	0	MOSTLY CHANGED	1	6th DEGREE	0 5	PRESER VPLAN	7	2nd DEGREE	1 5	814,501,400	RENTERS	1	MOSTLY CHANGED	18	4th DEGREE	0 75	0 625	8 4	-513668560
256	RESIDENTIAL	2	3	GOOD	2	UNCHANGED	3	LESS CHANGED	2	LESS CHANGED	2	1st DEGREE	3	PRESER VPLAN	7	3rd DEGREE	1	71,135,000	RENTERS	7	UNCHANGED	27	3rd DEGREE	0 5	0 75	8 12	39392229
257	RESIDENTIAL	2	2	BAD	6	FULLY CHANGED	0	0	0	0	0	0	0	0	0	4th DEGREE	0 5	0	0	0	FULLY CHANGED	9 5	6th DEGREE	0 75	0 375	1 13	12526345
258	RESIDENTIAL	2	2	MIDDLE	4	UNCHANGED	3	LESS CHANGED	2	0	0	2nd DEGREE	2 5	REGISTERED	8	2nd DEGREE	1 5	441,679,500	RENTERS	5	LESS CHANGED	23	3rd DEGREE	0 75	0 75	10 2	-319224134
259	RESIDENTIAL	2	2	RUINED	8	0	0	0	0	0	0	6th DEGREE	0 5	0	0	4th DEGREE	0 5	397,535,550	RENTERS	0	FULLY CHANGED	11	6th DEGREE	0 75	0 375	1 91	-374814653
260	RESIDENTIAL	2	2	RUINED	8	MOSTLY CHANGED	1	0	0	0	0	6th DEGREE	0 5	0	0	4th DEGREE	0 5	397,535,550	RENTERS	1	MOSTLY CHANGED	12	6th DEGREE	0 75	0 375	3 44	-356308695
261	RESIDENTIAL	2	1	RUINED	8	JOINT BUILDING	0	0	0	0	0	6th DEGREE	0 5	0	0	3rd DEGREE	1	0	RENTERS	0	FULLY CHANGED	11 5	6th DEGREE	1	0 375	3 9	48746556
262	RESIDENTIAL	2	3	BAD	6	LESS CHANGED	2	MOSTLY CHANGED	1	0	0	2nd DEGREE	2 5	0	0	4th DEGREE	0 5	1,571,807	RENTERS	3	MOSTLY CHANGED	14	5th DEGREE	0 5	0 5	3 96	45784847
263	RESIDENTIAL	2	2	RUINED	8	JOINT BUILDING	0	0	0	0	0	6th DEGREE	0 5	0	0	4th DEGREE	0 5	0	RENTERS	0	FULLY CHANGED	11	6th DEGREE	0 75	0 375	2 44	28307081
264	RESIDENTIAL	2	2	BAD	6	FULLY CHANGED	0	0	0	0	0	5th DEGREE	1	0	0	2nd DEGREE	1 5	0	RENTERS	0	FULLY CHANGED	10 5	6th DEGREE	0 75	0 375	1 94	23326044
265	0	0	3	RUINED	8	0	0	0	0	0	0	6th DEGREE	0 5	0	0	3rd DEGREE	1	1,288,108	0	0	FULLY CHANGED	9 5	6th DEGREE	0 5	0 375	2 19	25047791
266	RESIDENTIAL	2	3	MIDDLE	4	UNCHANGED	3	MOSTLY CHANGED	1	0	0	3rd DEGREE	2	REGISTERED	8	2nd DEGREE	1 5	526,745,400	OWNERS	4	LESS CHANGED	21 5	3rd DEGREE	0 5	0 75	3 52	-494482483
267	RESIDENTIAL	2	3	MIDDLE	4	UNCHANGED	3	UNCHANGED	3	0	0	1st DEGREE	3	REGISTERED	8	3rd DEGREE	1	658,817,000	OWNERS	6	LESS CHANGED	24	3rd DEGREE	0 5	0 75	5 49	-492610268
268	COMMERCIAL	1	2	BAD	6	FULLY CHANGED	0	0	0	0	0	6th DEGREE	0 5	PRESER VPLAN	7	3rd DEGREE	1	0	0	0	FULLY CHANGED	15 5	5th DEGREE	0 75	0 5	4 9	58768894
269	COMMERCIAL	1	2	GOOD	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	3	8th DEGREE	0 75	0 125	0 9	10814542
270	COMMERCIAL	1	1	GOOD	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	3	8th DEGREE	1	0 125	2 78	33392789
271	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	0	8th DEGREE	0	0 125	0	0
272	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	0	8th DEGREE	0 5	0 125	2 61	31261657
273	RESIDENTIAL-COMMERCIAL	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	0 75	0 125	5 09	60599242
274	RESIDENTIAL-COMMERCIAL	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	2	8th DEGREE	0	0 125	0	0
275	RESIDENTIAL	2	3	MIDDLE	4	LESS CHANGED	2	MOSTLY CHANGED	1	0	0	1st DEGREE	3	0	0	2nd DEGREE	1 5	0	0	3	MOSTLY CHANGED	13 5	5th DEGREE	0 5	0 5	8 13	97614872
276	COMMERCIAL	1	2	GOOD	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	3	8th DEGREE	0 75	0 125	0 31	3742239
277	COMMERCIAL	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0	0 125	0	0
278	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	1	8th DEGREE	0 25	0 125	0 81	9677717
279	RESIDENTIAL-COMMERCIAL	2	2	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	9	6th DEGREE	0 75	0 375	4 78	57505816
280	COMMERCIAL	1	4	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	8	7th DEGREE	0 25	0 25	1 47	17594459
281	PUBLIC-EDUCATION	2	4	0	0	0	0	0	0	0	0	0	0	PRESER VPLAN	7	0	0	0	0	0	FULLY CHANGED	9	6th DEGREE	0 25	0 375	7 15	85757329
282	COMMERCIAL	1	1	BAD	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	7	7th DEGREE	1	0 25	1 93	23148765
283	COMMERCIAL	1	1	BAD	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	7	7th DEGREE	1	0 25	2 9	34776764
284	COMMERCIAL	1	1	BAD	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	7	7th DEGREE	1	0 25	1 67	20026626
285	COMMERCIAL	1	1	BAD	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	FULLY CHANGED	7	7th DEGREE	1	0 25	0 97	11681615

APPENDIX F: ELEMENTS OF THE COVERAGES

ELEMENTS OF COVERAGES

Layer 1 : Buildings

Themes : Buildings in prcscrvcd zonc

Coverage : BINAS_COV

Feature Class : Polygon

Data Source : UPL 511 studio studies

Input Scale : 1/500

Buildings in preserved zone. PAT

ITEMS	DATA TYPE	DESCRIPTION
Area	8 18 F 5	Area of building polygon in map
Perimeter	8 18 F 5	Perimeter of building polygon in map
BINAS_COV #	4 5 B -	Polygon sequence number
BINAS_COV ID	4 5 B -	Polygon ID
LU	25 25 C -	Land use
VLU	4 4 N 1	Valuation of landuse characteristics
NOS	1 1 I -	Codc rcprcscnting numbcr of storcy
TSS	7 7 C -	The situation of structure
VTSS	2 2 I -	Valuation of the degree of deformation
TSFB	15 15 C -	The level of changes in front of buildings
VTSFB	2 2 I -	Valuation of front characteristics of buildings
TSFEB	15 15 C -	The level changes in front elements of buildings
VTSFEB	2 2 I -	Valuation of front elements
TSIP	15 15 C -	The level changes in the inner plan of buildings
VTSIP	2 2 I -	Valuation of inner plan changes
TVFB	12 12 C -	The degree of evaluation of buildings
VTVFB	4 4 N 1	Valuation of cxisting structurc of front of buildings
TTB	20 20 C -	The type of preservation
VTTB	2 2 I -	Valuation of characteristics of buildings
ES	12 12 C -	The degree of locational characteristics
VES	4 4 N 1	Valuation of existing locational characteristics of buildings
RC	15 15 I -	The cost of repairing the old buildings
OWN	8 8 C -	Owners pattern

Layer 2 : Buildings

Themes : Buildings in development zone determined by plan

Coverage : BINA2S_COV

Feature Class : Polygon

Data Source : Ulus historical city center planning projects

Input Scale : 1/1000

Buildings in development zone determined by plan. PAT

ITEMS	DATA TYPE	DESCRIPTION
Area	8 18 F 5	Area of building polygon in map
Perimeter	8 18 F 5	Perimeter of building polygon in map
BINA2S_COV #	4 5 B -	Polygon sequence number
BINA2S_COV ID	4 5 B -	Polygon ID
LUDZP	25 25 C -	Land use pattern of the plan
NSDZP	1 1 I -	Code representing number of storey
TTBDZP	20 20 C -	The type of preservation

Layer 3 : Buildings

Themes : Buildings in existing development zone

Coverage : BINAS_COV

Feature Class : Polygon

Data Source : UPL 511 studio studies

Input Scale : 1/500

Buildings in existing development zone. PAT

ITEMS	DATA TYPE	DESCRIPTION
Area	8 18 F 5	Area of building polygon in map
Perimeter	8 18 F 5	Perimeter of building polygon in map
BINAS_COV #	4 5 B -	Polygon sequence number
BINAS_COV ID	4 5 B -	Polygon ID
NSEDZ	4 4 I -	Code representing number of storey
TTBEDZ	20 20 C -	The type of preservation

Layer 4 : Roads

Themes : Roads name

Coverage : YOLS_COV

Feature Class : Polygon

Data Source : UPL 511 studio studies

Input Scale : 1/500

Roads Name. PAT

ITEMS	DATA TYPE	DESCRIPTION
Area	8 18 F 5	Area of road polygon in map
Perimeter	8 18 F 5	Perimeter of road polygon in map
ROAD_COV #	4 5 B -	Polygon sequence number
ROAD_COV ID	4 5 B -	Polygon ID
Names	15 15 c -	Names of the roads

Input Scale : 1/500

APPENDIX G. KING COUNTY

CHARACTERISTICS OF THE COUNTY

King County is a typical of the urban county that has farmland. It includes the Seattle City which is an attractive and growing metropolitan center.

PROBLEM OF THE AREA

It suffers a drastic decline in its agricultural land and open space by the urban development. Between 1982 and 1987 the country loss 9.5% of its farmland (Daniels, p. 407).

In 1945 the county had 165000 acres of farmland, in 1978 it had 45000 acres. The industrial development has accounted for 90% of the total land in agricultural use, with about 29000 acres in pasture and 12000 acres in slage in 1975 (Daniels, p. 407).

PDR program was given the best change of succeed in saying the local agricultural base. The program has directed toward protecting land most threatened by development (Bucland, 238).

IV.I.IV.4. IMPLEMENTATION OF THE PDR TECHNIQUE

In 1978 and in 1979, there was a voting for development rights ordinance, a $50 million bond issue was passed with a 63% majority in November 1979. This was the first such successful election of its kind in the US. $50 million bond issue will be used to purchase development rights from the county's farmland and open space. The areas divided into 3 priorities. Maps of these divided areas could be shown before the program was implemented. Priority one; include horticultural lands throughout the county and farmlands and open space in the three particularly threatened areas. Priority two; includes most active farming areas. Priority three, all other farmlands located within the agricultural districts. Additionally all of the sales are to be voluntary. Seven member were chosen as a committee to advise the county selection of farmland without any payment to the committee members. The program was established on the condition that purchases of development rights continuos until the$ 50 million is spend or 6 years have passed.

The market value of the development rights were determined by the two appraisals. The one determines the fair-market value full ownership of the land and the other determines the fair market value of the agricultural use only. 'Owners who wish to make sale offers and who are dissatisfied with the appraisal may make a review appraisal at their own expense' (Wolfram, 1981, p.408). Within priority classes criteria for selection were established by the bill. 'Two of these criteria are that offers below appraisals are to be preferred to others at appraised values, and an offer of land, which will serve the dual purpose of urban separation and agricultural production, shall be favored over an offer of land that will serve only one such purpose' (Wolfram,1981, p.408.)

However, the appraisals of determination of the value of DR has the problem which arises from supply and demand conditions at a given point in time. Because the value will be different in the same conditions of development rights in the same areas. This problem was known by the drafters of King County. Therefore, as firstly, $ 12.8 million of the bond issue is budgeted for price escalation and higher than assumed participation by farmers. Secondly, the appraisal value sets a that can be paid for a properties development right. Land is assured to give the priorities which are below appraisal value. Additionally, farmers do not have to sell their rights because the program is voluntary and the committee does not have to buy the unused development rights for the same reason.

In 1979 more than 8000 acres of vacant land were zoned for industrial use and more than 4000 acres available for sale. (Wolfram, 1981, p.409).

Buckland (1987), also mentioned about landowners applications which are revived and the land is subjected to this appraisals. The first appraisal determines the full market value of the land and the second establishes the agricultural value. The difference between two is said to be the value of the development rights.

The land value that is embodied in the development rights is like that: Consider 150-acre dairy farm, the value of that land without development rights is about $300000 while with development rights $1200000.

Then the second program operated from 1984 and 1986 and there would be spent $53 million to but the development rights to 12568 acres. The program targeted 11 regions but in only four regions were the development rights to over 10 acres purchased.

Initially the costs was $8000 per acre and the total program average was $4000 per acre. However in same period the cost was $800 per acre in Maryland, and $2500 in Massachusetts, (Daniels, Thomas).

THE CHICAGO PLAN PROPOSAL

America's architectural landmarks can not be preserved by the present legal methods especially the landmarks which are located in high development sections of the nation's cities. Professor Costonis suggests a TDR technique on the Chicago plan that promises to be more effective solution to the landmark problem (ROSE, 1970).

Costonis suggest the Chicago Plan and shows that the plan avoids the drawbacks of the New York Plan. The Chicago Plan would operate by the city council with the recommendations of the landmark and planning commissions. The council would establish one or more 'development rights transfer district' that will be equal to the concentrated areas of landmarks. Therefore, the landmark owners can transfer his unused development potential to other lots within the transfer district. These transfer can be made to one or more transferee lots, and these lots can not be increased more than 15%. Additional planning controls is set in the municipality's preservation ordinance.

The acquisition costs and other expenses of the program will be funded by a municipal 'development rights bank' which would be credited with development rights. Those pooled development rights would be sold by the city where necessary to meet the program costs.

The subject of the plan is to redistribute preservation costs equitably and realistically. Landmark owners would be compensated by transfer authorizations and tax relief. By this way, the value of the site is decreased because, development potential of the areas are eliminated. Landmarks will remain in private ownership and in commercial and office use. Therefore, the city council does not pay any restoration and maintenance costs (Rose, p. 104). The council pays only a tax reduction costs but this loss will be compensated by the taxation of new, modern buildings. By this way, the downtown developers could build larger structures than local zoning otherwise permits.

THE ELEMENTS OF THE PROPOSAL

A- INCENTIVE PACKAGE:

The landmark commission would obtain an appraisal of the property that details the economic consequences of the building, (before the designation of a landmark). The appraisal will demand any structural defects, restoration or rehabilitation problems. after that the commission suggest a package to compensate the owner including the transfer process and real estate tax reduction. (Chicago Plan calculates the transfers in terms of lot area rather than floor area.)

Real estate taxes, in Chicago, are the largest single item in the costs of operating downtown buildings. For example, 25% reduction in the assessed valuation of downtown office building would result in a tax saving equal to twice the average repairs and maintenance budget for such properties.

B- PRESERVATION RESTRICTION ON LANDMARKS

'Municipalities will obtain a preservation restriction in landmark properties except in the rare case when fairness requires that the city acquire a property in fee' (Rose, p.106). According to Costonis, the advantages of less-than-fee-acquisition are substantial. Therefore, government limits its interference with private ownership.

This makes possible to secure the preservation of landmarks. Additionally, the preservation restriction enables landmark owners to qualify for federal and state income tax and local real estate tax benefits. It also allows for more precise regulation of the obligations of landmark ownership. As the final advantage of preservation restriction, accuracy of notice to mortgagees, purchasers and other interested parties of the encumbrances attaching to the landmark property would be said.

C- THE TRANSFER DISTRICT (RECEIVING AREA):

The Chicago Plan goes beyond the New York City Plan by permitting transfers to any property within development rights transfer district. By this way, economic and planing difficulties would be avoided. The market for unused development rights under Chicago Plan is more effective than the New

York Plan. Because the transfer districts could encompassed the high land value areas of the city. Therefore, municipalities would capitalize on its advantage in drawing the boundaries of their development rights transfer districts. Additionally, the marketability of development rights will not be depended upon the vagaries of construction activity on sites adjacent to landmarks (Rose, p. 107).

The problems of urban design are avoided by these wide-area approach. Additionally, before the establishment of any DRT district, the municipal landmark and planning commissions will study the area with the calculations of the amount of floor area and the capacity of the areas public services and facilities to absorb this additional density. These studies provide the decisions on DRT district determination and its boundaries.

After the establishment of transfer district, there will be a prevention of DRT from the high density levels at three respects. The first one is to put an upperbound limit for the density. This limit is fixed by the number of designated landmarks. Second, all of the floor areas of the city will have been authorized by the existing zoning whether or not they will add to the new project. therefore, there is the redistribution of previously authorized floor area rather than upon the creation of wholly new floor area. Third, the plan envisages that transfers will be restricted to selected use and bulk districts, within the DRT districts. Additionally, transferee sites can not be increased by more than 15% of its actual lot area.

D- THE ROLE OF THE MUNICIPALITY:

The role of the municipality in Chicago Plan can be separated in two parts. The municipality finance a big preservation program without dipping into general revenues and the sales of development rights from the municipal development rights bank should provide the financial basis for effective public intervention (Rose, p.109). Development rights (in the bank) will derive from three sources: The first one will be landmark owners who decline the transfer options. The second source will be again landmark owners who donate lot area. The last one will be the city itself, which is likely to own a fairnumber of the community's landmarks.

Therefore, the most of the preservation cost of the city would be paid by the sale of condemned development rights. Additional funds are necessary because there is subsidies and tax reduction cases. Donated development rights and those provided by the city provides this additional funds.

Moreover, the plan administration is simple because of the determined DRT (transfer district) boundaries. These districts are selected expressly upon the basis of the capacity of their public services and facilities to absorb increased density.

IMPLEMENTATION OF THE PLAN

This plan, as mentioned above, examines the zoning techniques to get the preservation objectives. Therefore it could be implemented either as a zoning or as a preservation measure. 'This choice will determine whether municipal authority to adopt the plan should originate in state zoning or state preservation enabling legislation and whether the zoning or the preservation ordinance should be the primary tool for its implementation at the municipal level. The American Law Institute Model Land Development Court offers a good solution. Intended to serve as a comprehensive state enabling act to empower local communities to regulate land use and development, the Court treats zoning and preservation as two categories of this regulatory power' (Rose, 1970, p. 110). Court proposed an adaptation at the local level of a single Land Development Ordinance. It will be administered by a single Land Development Agency. The plan is put under the ordinance. Landmark Commissions would also play an influential role in this plan.

The Chicago Plan enables the city to gain the cost of its preservation program along with the income coming from the sale of development rights. There are three questions about the plan 's economic feasibility for a successful plan implementation. These are:

'1- What losses do landmark owners incur when their landmark properties are encumbered with preservation restrictions?

2- Will the sale of development rights associated with these restrictions return amounts sufficient to cover these losses?

3- What losses, if any, will the city sustain as result either of any deficits in these transactions or of the impact of the plan upon municipal property tax collections?' (Costonis, 1974, p.61).

IMPLEMENTATION OF THE PLAN

The plan of Chicago shows that the preservation restriction on landmark buildings will be permanent idea. However, according to Costonis (1974), there is always a flexibility control on these landmarks, because of the finite economic and physical lives of landmark properties. Generally, the process of feasibility is determined by four following phenomena:

" 1-continuation of improvement in its occupancy and rental levels;

2- continuation of profitability due to reduced taxes;

3- decline in marketability

4- decline in market price" (Costonis, 1974, p. 65).

It is possible for these landmarks, to be competitive in the market place. Because as seen on before, the two landmark buildings have 100% occupancy level. Therefore, they are likely to continue to enjoy satisfactory occupancy levels. Additionally, the owners of landmark buildings can spent funds for renovation and they can increase their buildings' appeal to the tenants and increase existing occupancy levels. The funds are provided from the property tax reduction.

On the other hand, the sales price of the landmark buildings will be decreased because of their lack of development potential. This decrease in value should be equal to damages calculated at the time of designation, less than an adjustment for time. The other side of this decrease in value of the landmark buildings is the satisfaction of purchaser of such buildings. This satisfaction comes from a high return on a low purchase price in a limited period of time. Therefore, speculators suggest that a non-profit organization may find landmark ownership entirely feasible. Because the purchase price of these landmarks is low and the lowered reversionary value of the properties plays a less significant role in the calculations of these organizations.

According to Costonis the cost of a preservation restriction is a function of two factors:

" 1- Relative size of the landmark and replacement building;

2- The relative return of investment of the landmark and the replacement building" (Costonis, 1974, p.65).

SANTA MONICA MOUNTAINS, CALIFORNIA

Santa Monica Mountains has the Pacific Ocean coast line and chaparral-covered mountains of the Malibu area, northwest of the Los Angeles.

THE PROBLEM OF LAND USE

These areas have attraction for both recreational use and development and land speculation. Large tracts of vacant land were subdivided and platted. These buildings has the problems of slope, accessibility, natural hazards... etc. So, public services and infrastructure could not serve to these areas.

In 1977, the California Coastal Commission was given permit authority over 1100 miles of coast, including Santa Monica Mountains. In 1978 Commission followed by an adhoc TDR transaction. In 1979, a formal TDR program was adopted which is administered by the California Coastal Conservancy.

IMPLEMENTATION OF THE TDR PROGRAM

There is transfer of development credits (TDC) program which is voluntary from the point of sellers and does not prohibit development on the environmentally sensitive mountain slopes. However, there is a strong incentive for the developers eligible for TDC's to acquire them. Because development of subdivisions and multifamily units can not occur without the acquisition of development rights from the antiquated lots. Therefore, developers must buy unused development rights to retire them within a permanent conservation easements.

TDC program is organized into three separate zones which reflects the different land values, but receiving areas are not defined geographically. At the first stage, the initial program specified that transfers would occur within each zone. After that commission has changed this the transfers could be done in different zones.

In Santa Monica, opposite to the other TDR programs, it does not provide a specific ratio of credits to parcel area in the sending areas. Development value of sending sites would be determined by its buildability. Therefore, a windfall is recaptured by the most marginally buildable lots owners.

"The formula of TDC considers the size and slope of buildable lots and gives more credit to less steeply sloped lots. One TDC is generated if a 15000 square foot dwellings could be constructed on the lot. But there are other things in the formula, parcels in designated significant ecological areas generate one TDC for each small lot as does any combination of small lots totaling more than one acre. Multiple marginally buildable small lots, 4000 square feet or greater, may be allocated 500 square feet of floor area credit for each lot, with 1500 square feet equaling one TDC. One TDC yields a developer one additional unit of density" (Roddewig and Ingram, 1987, p.7).

There is no banking system, developers can buy TDC's either the private market or the Coastal Conservancy which entered the TDC market by holding a TDC auction. In private market, developers and sellers are brought together by word of month, brokers, newspaper advertisements ...etc. Therefore, there is no speculation or secondary market in Santa Monica Coastal Conservancy's objective was to increase the small supply at TDC's and to stem the upward price spiral which peaked around $43000 per credit in 1981. So the price would fall 42250 for the first offering and $36500 per TDC at the second. But this created a loose a TDC supply and it slopped price escalation. The Conservancy was posting TDC prices, which have steadily declined to the current $15000 level because of the auction. As a result, this program is successful, however, future of the program is uncertain.

APPENDIX H. MONTGOMERY COUNTY MARYLAND

CHARACTERISTICS OF THE AREA

Montgomery County is located on the North of Washington DC It has the population of 580000 with the land area of 323000 acres (Roddewig, p.10-15)

PROBLEMS OF THE AREA

In 1973 residential development started to develop through prime agricultural areas, and Montgomery County lost 18% of its agricultural land to urban development (Pizor, 1986, p. 209) during 1970's. A five-acre minimum lot size was required as the solution of the rapid urbanization by the county administration. However, it was not a good solution for Maryland.

PROPOSALS FOR MARYLAND COUNTY

The Montgomery County Planning Commission has proposed three alternatives, these were.

1) Down zoning(unfair)

2) Outright purchase of agricultural land (costly)

3) TDR (best solution)

IMPLEMENTATION OF THE TDR TECHNIQUE

The Montgomery Planning Commission had chosen the TDR technique to preserve agricultural land and they had (Pizor, 1986, p.205)

In the initial phase of the program a small area was chosen for a pilot region and still a rural region that lies north and east of Interstate 280. After that, the program was expanded throughout the county by the Planning Commission. At the end, 74.000 acres has chosen as a sending district (rural density transfer zone) which begins along the Potomac River and curves around to include the northern boundaries of the county and reaches as far as Olney (figure 4.1).

Roddewig and Ingram states that in 1980's the county accepted the preservation plan[1] with 110.000 acres of agricultural reserve area (rural density transfer zone). Planners have argued that 25 acres of land was necessary for profitable agricultural use. Therefore, the maximum allowable development density within the area was reduced than one dwelling unit per 5 acres to one dwelling unit per 25 acres and agricultural land owners could sell one development right for every 5 acres of farmland owned.

Then, in 1981, a receiving area was established for 3000 development rights (transfers from 15000 acres of agricultural reserve land). Therefore, developers in the receiving districts can increase the base density that it should depend on the current zoning classification. For example, under zoning classification 5 units per acre are allowed, and when a developer uses the TDR program he can increase 5 units to 7 units per acre. Also Pizor (1986) stated that purchased each development right allows the buyer to build one additional residential unit (over the maximum permitted by zoning) in approved receiving districts.

Then, in 1985, 1145 TDR's have been purchased (protecting 5725 acres of farmland). Developers had used the unused development rights in single family detached and semi-detached townhouse units. In 1987, an additional 2000 development rights were sold to the developers that will protect 16000 acres of farmland. However, price paid by developers has declined. For example, in 1982, the development price was 5000-8000, in 1983 it was 5000$ and by the year of 1987 it was 4000-5000 for each development right. However, farmland value for agricultural use has remained constant (at 900$ to 3500$ per acre).

The Maryland National Capital Park and Planning Commissionwere responsible to make an effective TDR program. Planners and economists found out that if their TDR program design was not based on the realities of the private real estate market, the program would fail. The TDR program was mandatory but property owners are required to sell their DR's. There are several reasons behind this: Firstly, sending areas have enough development potential so that development demand was strong to create a marked of willing buyers. Because for multifamily housing, there was a soft market the rights can be applied only to single family and townhouse development. Therefore, prices and demand would be high. Another reason is that there is a priority in the provision of water and sewer services, there is also an educational effort to sell the program to both buyers and sellers a like.

Density in the receiving parcels must be at least 2\3 of the possible maximum density, in order to ensure a sufficient development and sustain market demand for development rights and avoid spreading a few TDR rights along the receiving zone. For example, for a 20 acre site with base zoning

[1] Master Plan For The Preservation Of Agriculture And Rural Open Space, October, 1980 (Pizor p.205).

permitting a total of 100 units and a density option of an additional 40 units, the developer must purchase at least 27 TDR's and construct at least 127 units (100+(40x0.667)).

There is a County Development Rights Fund which was established to act as a buyer of last resort and to provide loan guarantees for loans that used the value of DR's still attracted to farmland as collateral. The fund was designated to the TDR bank then DR's were sold at auction to the highest bidder loan guarantees are available for up to 75% of the marked value of the farm for a term not to exceed 5 years. (But this fund was not used because the private market has been strong enough Roddewig, pp. 1-37).

Deed was recorded with the TDR easement that restricts the number of one-family dwellings in the development zone. Montgomery County also has full legislative control over both sending and receiving areas but administrative costs are negligible. The County does not have to be concerned with the compatibility of local planning and zoning.

RESULTS OF THE IMPLEMENTATION

This TDR program was successful. Roddewig and Ingram wrote 5 condition that causes successfulness. They are:

"1) Sufficient restrictions on sending areas to give rise to TDR sales.

2) Designation of receiving sites with infrastructure capability and sufficient development demand to make additional density increases attractive to developers.

3)Recognition of the economic and financial conditions that underpin a TDR marked and determine the value of TDR's to both sellers and buyers.

4) A TDR program design that is simple and understandable and that does not require complex approvals.

5) Commitment to an educational effort to inform landowners, developers, Realtors and attorneys about the program.(Roddewig, p. 4)

One point has to be mentioned for the Maryland County. Because there was a successive proposal that was suggested by Maryland Senate, (if adopted during the 1972 legislative season), it will become the first successful development rights concept to be implemented in the United States of

America. The Maryland Senate has suggested the development rights concept that would work in the following manner: (Maryland Senate Bill, No. 254, 1972).

"1-Countries would draw up master plans which specify the percentage of remaining undeveloped land to be developed, and where the development must take place.

2- Countries will then assign development rights to all land owners for two categories of development: commercial and residential. The number of rights given to each owner will be proportional to his property as a percentage of land in the county, and all rights may be transferred or sold.

3- Developers must acquire a given number of rights per housing or commercial unit (to be established by the county planning commissions).

4- No developer will originally own enough rights to build on all of his own land, he must buy additional rights, on an open market, from other land owners. Then, and only then, may he build.

5- Having sold their rights, farmers and other owners of open land will forfeit any change to build commercial or residential developments in the future. The same constraint applies to heirs of transferees, and thus open spaces will be guaranteed.

6- If any landowner successfully petitions for an enlargement of the developable percentage of the plan, new rights will be allotted to all other holders of rights, proportionate to their existing rights, and a developer must therefore deal with them before he can build on the newly opened land. The holders may protect their own investments by refusing to sell their rights.

7- Agricultural and some outdoor recreational developments will not require rights, nor will land purchased by the county for schools, libraries, parks, fire stations and hospitals. Since these lands will escape the competition for developmental rights, their costs will remain relatively low ' (William J. Goodman ' As A Primary System of Land Use Regulation: The Maryland Proposal' As cited in Rose, p.210-211).

The proposal of Maryland Senate was used in the Montgomery County as an explanatory study.

Rose also stated that development rights would be issued to all landowners for all private development permitted. If the owner has not got the requisite number of DR's, no development will occur. Once, the owner of land sells all of his rights, he would no longer be able to develop his land, if he does not require the sufficient number of DR's. In this plan, and in the Jersey plan there is a free

market for the purchase and sale of development rights. Additionally, the Maryland plan goes beyond the New Jersey plan because DR's will be issued for commercial uses (all private uses) not only residential and agricultural. Government approval requires DR's for commercial and industrial development. Each owner of undeveloped land in the jurisdiction receives a proportion of the total number of DR's required for total development. The number of shares that each owner receives depends upon the amount of acreage he owns, unlike in the New Jersey plan.

NEW JERSEY PINELANDS

CHARACTERISTICS OF THE AREA

New Jersey has a big land area with 52 municipalities and 4 million acres between Philadelphia and Atlantic City. It has ecologically significant areas (forests bogs, cranberry, blueberry farms, agricultural lands...etc.) (figure 4.4). Pinelands covers 20% of the state of New Jersey (approximately 1.1 million acres). One third of the ownership of land belongs to the public including 243000 acres of parks and forests owned by the state. 75000 acres of military bases and wildlife refuges owned by the federal government (Strong, p.66).

PROBLEMS

In the Atlantic City there was a boom of second home and retirementhomes. Therefore, suburban development threatened the Pinelands eco-system (in the 1970's, figure 4.5).

PROPOSALS

There is an important factor in New Jersey Pinelands before the plan, that is, its national parks which has gained the importance by the years of 1960's. National parks near large urban areas have encouraged. However, the landownership patterns for such parks was in private ownership and the land prices were expensive. The federal governments were not willing to pay in fee simple title for such parks. Therefore, the government has chosen the greenline parks remaining the ownership of lands private. The TDR program becomes the alternative to fee simple for the Pinelands.

The Pinelands National Reserve is the prototype of a model of national park. It is known as greenline park and has the characteristics of the followings:

'1- the land is owned by a large and diverse group of public and private agencies and individuals;

2- there is and will be more development within the greenline boundaries;

3- there is a comprehensive regulation and compensation system to attain park goals; and

4- the governance is in the hands of a complex network of federal, state, and local governments and special commissions' (Strong Ann L., 1987, p. 64).

Financial necessity and the political pragmatism are the forces underlying the inclusion of substantial tracts of private land within the boundaries of national parks. At the end of the disputes for national parks, the existing parcel lands have transferred to the National Park Service (NPS) from the Bureau of Land Management and the Forest Service (Strong, p.64).

In 1978, Federal Legislation established the Pinelands National Reserve for working on regional planning body and developing comprehensive management plan to reserve it within 18 months. Congress has developed the Pinelands Commission which has the planning responsibility. The Commission's structure diminished the federal role in planning and management which parallels to the in tended ratio between federal, state, local and private landownership. It has 15 members, one is appointed by the US secretary of the Interior, seven by the governor of New Jersey and one each by the seven counties within those jurisdiction the park lies (Strong, p.66).

Then New Jersey governor established Pineland Planning Commission for working on approval of development projects during the planning phase. After commission, state legislature passed the Pinelands Protection Act, and suggest TDR as a planning and growth control tool. The plan was the largest in scale and included most complicated TDR program themes. Additionally, there was a strong local support for the protection of Pineland.

IMPLEMENTATION OF THE TDR TECHNIQUE

The Commission prepared a comprehensive development plan in the late 1980's. Pizor (1986) also mentioned to this plan and he wrote that the plan started to implement in 1981 with a two-layered system of strict land use controls for the 56 Pinelands municipalities preservation and protection. "Local municipalities were free to design their own zoning ordinances as long as they conformed to the Pinelands Comprehensive Management Plan. All municipalities in the Pinelands were given one year to bring their ordinances into conformance with the Pineland's plan; because of various delays and extensions, however, a dozen communities still had not completed as of June 1985" (Pizor, p. 206).

The principle of plan is to restrict residential development through strict land use controls. In this principle, a total of 197000 dwelling units will be authorized and 26000 dwelling units of 197000

dwelling units can be built only through purchase of development rights (Strong, p.63). In the regulated area, residential development was not allowed as of right but only as a conditional use. Local plans and land use regulations were prepared by municipalities and countries depending on Pinelands Protection Act and Comprehensive Plan. The preservation area includes 368800 acres which denotes as 1/3 of the park. Half of the land is owned by state and the some of the area is owned by the federal government. The protection area is allowed to develop by the following characteristics:

Forest: 420000 acres, of which 105000 acres are public, with 1 d.u./ 15.3 acres permitted on developable land;

Agricultural Production: 77500 acres, with 1 d.u./10 acres permitted if related to farm use;

Special Agricultural Production: Sites to be nominated by municipalities from within the Agricultural Production or Forest Areas;

Rural Development: 145000 acres, with 200 d.u./sq. mi. permitted;

Pinelands Villages and Towns: 15000 acres distributed among some 125 locations throughout the Pinelands National Reserve, with development allowed in accord with municipal plans;

Regional Growth Areas: 119000 acres, with 141000 d.u. allowed at densities of 0.5 d.u./acre and up to accommodate protected development;

Federal: 18000 acres. (Strong A. L., 1987, p.66).

There was Pinelands Development Credit (PDC) program in the comprehensive plan which is simply transfer of development rights. It is intended to redirect development from sensitive areas to another suitable areas. Also, it allows the landowners in the most restricted areas to share in the benefits of increased land values in the receiving areas. Development rights (Pineland Development Credits) were issued to landowners according to a formula based on the suitability of various classes of land for development (Pizor, 207).

PDC system, therefore, offers the "opportunity for compensation to landowners in the preservation area, and in the protection area, to landowners whose property is designated for Agricultural Production or for Special Agricultural Production" (Strong, p. 66).

Credits are given on the basis of 39 acre increments. For example, uplands and woodlands is 1 credit per 39 acre; wetlands that need to protect the watershed is 2 credit per 39 acre; woodlands

with least development potential is 0.2 credits per 39 acre; and woodlands in agricultural use (for cranberry or blueberry) is 2 credits per 39 acre. (Roddewig and Ingram, 1987). Therefore, developer can built additional four residential units in development zone. Developers can built four d.u. in the Regional Growth Areas by one PDC in addition to those allowed under applicable zoning. This is subject to limitations related to the base density. Base density less than 0.5 d.u. per acre brings the bonus density of 0.5 d.u. per acre and base density less than 0.9 d.u. per acre brings the bonus density of 1.2 d.u. per acre.

These credits was offered for sale to landowners in the Residential Growth Areas. A perpetual easement is recorded barring for their development of the land from which the development rights have been transferred. A transfer tax must also be paid by the buyers and sellers. Property owners are given to record a deed restriction to limit the future use of land. Additionally, 'to derive the number of credits in the preservation area planners and economists first evaluated the capacity of the receiving areas and established the maximum number of housing units that could be transferred to those areas through a density bonus' (Roddewig and Ingram, 1987, p.6).

For a healthy market (for the credits and to create a development credit supply smaller than the potential use) a 2:1 ratio of density bonus capacity to available development credits was established. Additionally, in designated growth areas, 70000 bonus units are determined as the capacity. So, 8315 development credits will be occurred. Then, plan allows the 4 residential units per credit which could yield a potential 33260 residential units. After that process planners looked at the relative land values, total supply of DC's and preservation priorities to allocate the number of DC's therefore complicated formula has occur per 39 acres.

Then development projects of the developers have been approved by using 61.5 PDC's, 246 housing units and 1600 acres land was preserved. After that, 345 additional credits were sold to the developers. Generally, the projects included single family home, townhomes and multy-family homes.

Further, Burlington County Cone of the Pinelands jurisdictions established a PDC bank with the 1.5 million $ (only $ 238500 was allocated for easement purchase) bonds to simulate the private marked and to serve as buyer of last resort in the cases of hardship. The exchange purchases and resells the rights for 10000$ plus costs. 10000$ price was established by calculating the value to a developer of one additional unit of housing. Between the years 1980 and 1987 the Bank has used only $ 1 million of its $ 2 million allocation for the purchase of development rights. 2400 acres of land was preserved by the Bank.

The exchange had a significant effect on PDC bracket prices and established the dominant price. 3\4 of the sales have been at the price of 10000$ although the others occurred at the prices of 8000S to 20000$. Table 4.2. shows the total credits purchased or approved and awaring closing as of

spring 1986. Therefore, 19 purchases of PDC's have occurred or have been approved at an average cost per acre of $ 348.36 and a total cost to the exchange of almost $1 million sales to developers total 8.75 credits for a total revenue to the exchange of $ 87.500.

The steps in selling the credits to the Burlington County Exchange as fallow:

1- An application including an offer to sell the credits

2- An acknowledgment that an easement will be permanently recorded on approval of the application

3- A statement of economic hardship, financial statement and copies of the following documents:

a) The Pinelands Commission 'Letter of Interpretation certifying the number of credits due;

b) the municipal building inspector's certification of lot existence;

c) the current municipal tax bill for the property;

d) the municipal tax map sheet showing the land; and

e) the deed to the property. (Strong,1987, p.69).

The State Credit Bank was used by several years to maintain a ready market for the landowners. The governor signed a bill in 1985 (the Pinelands Development Credit Bank Act). It appropriates $ 6.5 million for the purchase of credits and extension of credit quarrantees. According to this law, the Bank will purchase credits at no less than $ 10000 per credit but in no case at a price greater than 80% of what the Board determines to be the market value of the credits. 'The Bank may sell credits at a price which does not substantially impair private sales and may give credits for projects which meet a compelling public purpose. The Bank also will guarantee loans to landowners who hold credits. The law permits creation of county banks to exercise these same functions and matching grants to such county banks reattractive to January 1981. Burlington County the only existing county bank, anticipated to receiving a 50% matching grants from the state for all of the expenditures which it has made' (Strong, 1987, p.69).

But after 10 months, the governor has yet to appoint the Board and therefore the Bank has not begun operation. In 1985, The Pinelands Infrastructure Trust Bond Act was approved by New Jersey's voters which provides $ 30 million in grants and loans for infrastructure to be built inaccord

with a plan to be developed in 1986 by the Commission (Bucland, p. 237). But in the Pinelands, an organized system of PDC exchange does not exist. In Pinelands buyers and sellers come together and spoke with each other and developers purchased unused development rights from restricted sites owned by them. After they used these rights on the development zone which has owned by themselves. The Pineland's Commission is charged with reviewing and updating the plan every three years. The first has been completed in January 1986 many regulatory and administrative changes were approved (Strong, 1987, p. 67). The responsibility of plan and management is divided between two agencies: The Pinelands Commission and the Division of Coastal Resources of the New Jersey Department of Environmental Protection. Because part of the land designated by Congress as Pinelands Reserve lies within the previously designated New Jersey coastal zone. Therefore, it is also a subject to a federally approved plan under the Coastal Zone Management Act. Pinelands Commission have not a formal advisory role and the state does not have the power to require four municipalities in this area for the plan. Additionally, the Department of Defense decision for military actions is allowed without any regard to the comprehensive plan. The historical experimentation of New Jersey about transfer and purchase of development rights was depend on legislation of 1972. By this time, a big development pressure exist on New Jersey. Over 1.2 million acres of state land were already developed (B. Budd Chavooshian and Others as cited in Rose, 1970, p. 170) . The legislation includes the following items to preserve the environmentally sensitive lands from urban development. These are:

1) In New Jersey plan certificates of DR's will be bought and sold in the open marked (similar to sales of registered bond. The economic forces determine the value of land which can be separated. And one of this component is the right to develop. There is no government agency that will be authorized to thinker with economic forces beyond its power. The plan is much politic.

2) Certificates of DR's can be taxed. So there would be incentive for a farmer not wishing to speculate in real estate to sell his certificates of DR's and thus pay property taxes only on the reduced value of his land for farm purposes

3) In this plan number of DR's is based upon the value rather than its acreage. Therefore the owner of more valuable land receives more DR's.

RESULTS OF THE IMPLEMENTATION

According to Strong (1987), the Pinelands TDR Program has these difficulties: complexity, limited promotion, resistance of landowners in the protected areas and municipalities targeted for growth.

In fact according to Roddewig, the program would be more effective if some of the followings had been occurred. (Pine lands Planning Commission reported):

- Simplified the mathematics of the program.

- Launched the program after achieving local zoning compliance.

- Initiated a public education effort to sell the program.

- Established a Pineland Development Credit Bank at the outset. Rose stated that the plan is established to induce owners of undeveloped land to preserve their land. Therefore sales of development rights is made possible if a market is to be created. The credits are allocated according to the current use of land and its suitability for future development to the landowners in the designated preservation area.

Table 1 Burlington County PDC Exchange

PRICE(US$)	ACRES PROTECTED	CREDITS PURCHASED/APPROVED
45000	215	4.5
32500	66	3.25
2500	0.28	0.25
7500	1.82	0.75
15000	52	1.50
297500	801	29.75
5000	12.9	0.5
10000	146.8	1
82080	60	
147500	354.04	14.75
2500	23.73	0.25
60000	107.92	6
62500	363	6.25
7500	10.01	0.75
52500	142.85	5.25
47500	110.85	4.75
37500	93.59	3.75
57500	121.55	5.75
27500	84.6	2.75
999080	2867.94	91.75

Source: Burlington County Conservation Easement and Pinelands Development Credit Exchange, 1986,as cited in Strong, 1987, p.68.

Table 2 DESCRIPTIVE DATA ON MONTGOMERY COUNTY AND PINELANDS TDR PROGRAMS.

	MONTGOMERY COUNTY		NEW JERSEY PINELANDS	
	COUNTY PLAN	OLNEY PILOT	ACTUAL	ADJUST EDa
SENDING AREA (ACRES)	73000	9408	349000	
RECEIVING AREA (ACRES)	-b	1220	55095	
DEVELOPMENT RIGHTS CREATED	14600	1882	6500	26000
NUMBER OF ACRES TO GENERATE A TDR				
AGRICULTURAL DISTRICT	5	5	19.5	4.89
PRESERVATION DISTRICT	-	-	39.0	9.75
WETLANDS	-	-	195.0	48.75
DWELLING UNITS PER TDR	1	1	4	
SALES VALUE PER DEVELOPMENT RIGHT (SPRING 1985)	$4500	$7000	$10000	$2500
SALES CLOSED	200	-c	10	40
NUMBER OF SALES PENDING	2000	-c	37-300	148-1200
RATIO OF DEVELOPMENT RIGHTS TO RECEIVING SITES	-	0.88	0.50	

Source: Pizor Peter J., 1986, 'Making TDR Work' The Journal of American Planning Association, Spring, p.205).

a) This column has been adjusted, where appropriate, to take account of the greater value of Pinelands development credits (i.e., that each one is equivalent to four dwelling units).

b) Receiving areas are being designated one planning area at a time. No summary total of the number of receiving area acres was available.

c) Onley data merged with data for the rest of Montgomery County.

APPENDIX J. ECONOMICS OF TDR

THE SUPPLY ASPECT OF DEVELOPMENT RIGHTS

Theoretical explanations on market functions are also valid for the development right market which covers the supply and demand considerations. The characteristics of the supply in a competitive market are similar to the supply of development right market when it is hold on the market environment without any government intervention.

The supply side of development right market can not be easily predicted. Generally, a positively sloped development supply curve could occur in the case of being many holders of development right and each with his own reservation price. The restricted landowner in a preserved area can calculate his reservation price according to whether he feels his land could have been developed and what compensation he desires for the lost development opportunity. In some cases, development right owners may base their decisions to sell development rights on their analysis of DR supply-demand outlook with their individual liquidity or investment portfolio position (Barrows and Prenguber, 1975, p.550).

TDR program effects the property rights of landowners in the preserved area. Landowners are assumed to have been relatively free to devote their land to any number of activities of which would generate a certain stream of rents through time before the implementation of any TDR program. That is, landowners want to behave freely about their land and expect different rents through time. The value of their land would reflect the discounted value of rents earned by the land in its best feasible use in a competitive land market. In some cases, existing zoning or land use regulations might have already constrained land use from what it would have been without any regulations. Similarly, after the implementation of the TDR program in an area, there would be some restrictions like more intensive land use options. Than the landowner now finds himself in a different position in which their options have decreased. The owner is endowed with a fixed number of development right which are required for certain land use activities in the transfer area.

It is important that there is a supply price which is necessary to induce the holder of development rights to sell them to another individual. "Because development rights are required for certain activities in the transfer area their value is a derived value. In general, the reservation price of holders of development rights will depend on their perception of the density restrictions within the transferred area and the value to developers from relaxation of those restrictions" (Field and Conrad, 1975, 332).

Field and Conrad (1975) have summarized the supply of development rights in their article. Accordingly, there are two possible shapes for an aggregate supply curve (figure1).

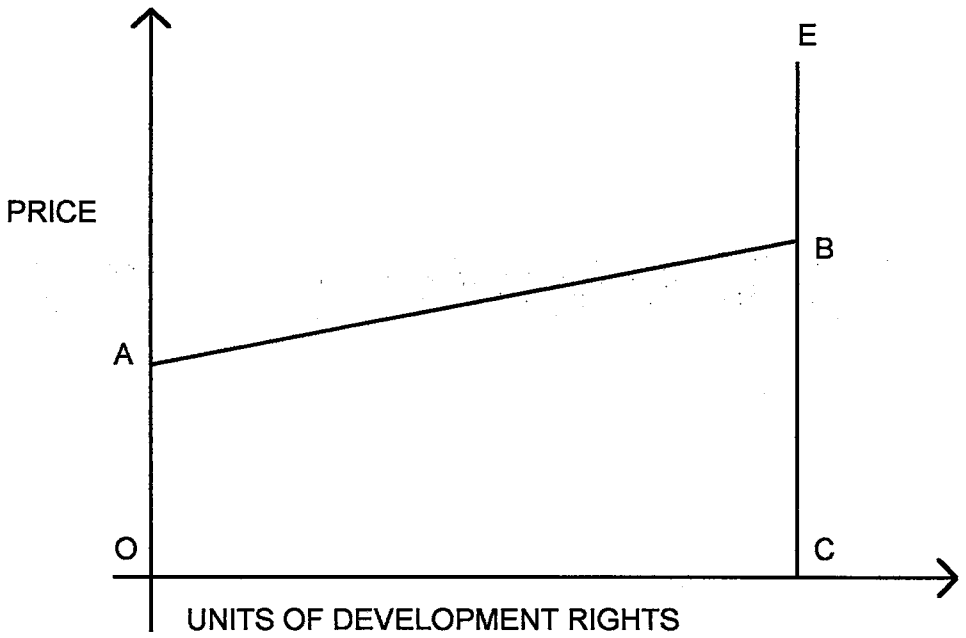

Figure 1: Supply Of Development Rights Market (Field and Conrad, 1975, p. 333).

In this figure, (OC) is the total fixed volume of rights endowed to landowners of the preserved area. It might be in elastically offered in which case the transfer price would be determined by the intersection of the (derived) demand for development rights and the vertical line (CE). (AB) is the alternative shape which would be a positively sloped. This line is up to the point where the preserved endowment has been exhausted, with the inelastic segment BE. Field and Conrad explained several factors that produce the segmented curve ABE. The first one is that different landowners endowed with development rights might have different perceptions in the profitability of development (in the developable area). The second one is that the future development alternatives increase the demand for development rights. And the last one is that in the preservation area there are now different assets than originally purchased. Therefore " the preservation designation and associated conference of development rights might result in portfolio disequilibrium with the desire to divest of land and development rights at a relatively early date. Because of these factors it seems reasonable to expect a supply curve shaped like ABE." (Field and Conrad, 1975, p.333).

The supply of development right market is effected by several factors. The supply of development right similar to demand of development right is effected by the size of the restricted or preservation zone. A small preservation area can be required because of the strong development right demand, but if the zone is agricultural such as wetlands, there is small number of development rights which causes a reduction in development right supply. In this case, less development and higher prices for development rights occur (Barrows and Prenguber, 1975, p.554).

The uncertainties of development right holders also effect the development right supply. Because of the being a new program, holders of development right may decide to hold their DR's, waiting to see if the program will actually work, while the

low income development right holders may be tempted to sell their DR's immediately. As a result DR supply will not be a continuos positively sloped curve, because of the uncertainties of market actions by development right holders. (Barrows and Prenguber, p.551).

LeBlanc and Conrad (1979), have studied the factors that affected the reservation price. They have also established the supply of development rights by means of a statistical equation. They have plotted a scatter diagram indicating the amount of land and development rights which would be forthcoming at alternative offer prices according to the exponential equation:

$$P=Ae\,BX+M$$

Here, P is the per acre price for land or price per development right, X is the number of acres of landlord the number of development rights, A and B are parameters to be estimated, and M is a normal error term.

So the log linear regression results for the supply of land is:

$$LnP=LnA+BX$$

After the equation, it could be obtained the supply curves for land and development rights. These are shown on 2.

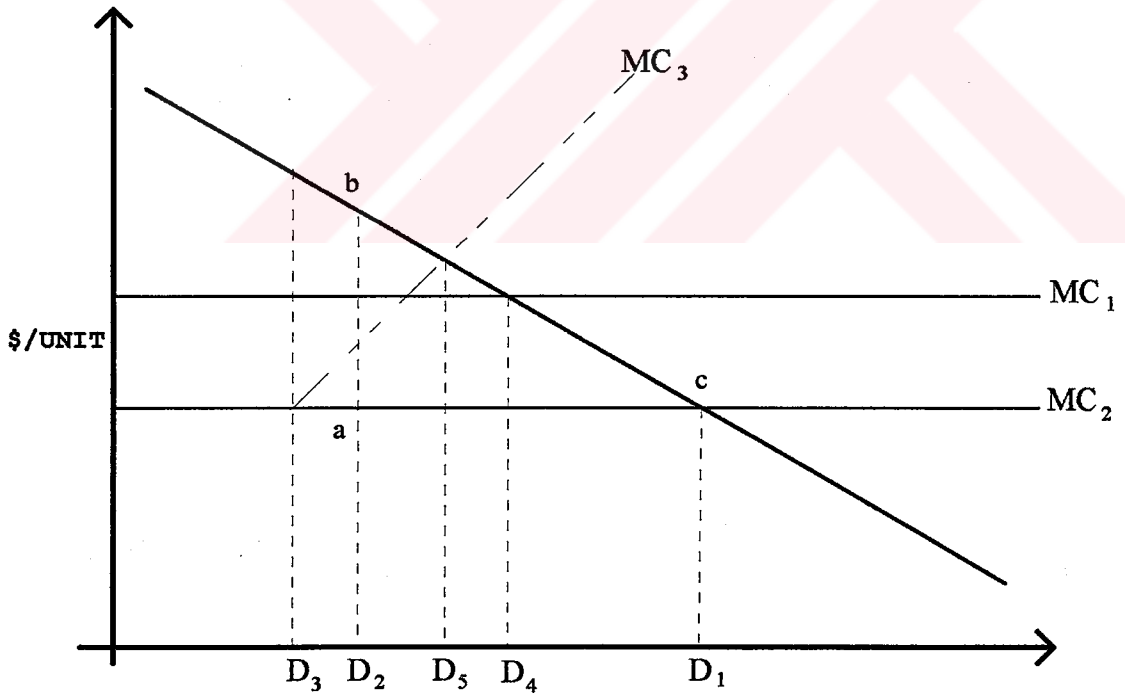

Figure 2: Marginal Revenue and Cost Curves Associated with Developing a Given Area To Different Densities (Field and Conrad, 1975, p. 335).

As we see from the figure, the two curves are close together. "The implication is that within this sample an offer to buy development rights for some stated price will

only result in a relatively few more acres then one could have purchased outright at the same price .....for the per acre cost of development rights one might often acquire fee simple title to a some what smaller number of acres . Such would be the case when development potential is regarded as being a high proportion of overall land value,"(Conrad, LeBlanc, 1979, p.275)

Therefore, this development right supply curves and fee simple supply curves shows the possibility of alternative policies to preserve agricultural land which might be less costly. In this situation after development rights have been taken from the land a government agency might have purchased the land outright with a resale of the land. As an alternative, the conforming users of the area can buy the land. On the other hand, a later data for development might be offered with a different point of view. Additionally, purchase-resale or purchase-lease back are the additional options when the cost of development right acquisition approaches the cost of fee simple acquisition. In the case where there is more development pressure and a transfer area exist with binding density restrictions, a mandatory TDR program might be feasible. The cost of development right acquisition would be shifted to transfer area developers in such a program (Conrad, LeBlanc, 1979).

DEMAND SIDE OF TDR

The demand side of development right market is also unpredictable according to many authors. Generally, a strong demand in the development zone will be required to ensure adequate development right being issued and transferred and thereby restricted landowners in preservation zone will compensated. Several conditions effect the demand level in a development right market. In a small area, there will be a strong demand for development right, whereas in a larger program, it is not possible to predict the exact demand due to the locations of development right and administrative difficulties. Additionally, a large preservation area implies that many development right of substantial aggregate value must be purchased to ensure compensation. However, development right demand may not be sufficient if massive urbanization is not underway. Because restricted landowners could not developed their property without any compensation, if development right demand is not sufficient in such areas.

The demand for development rights can also be influenced by the zoning ordinances. Some implementation areas are already zoned for development and it could render the TDR program to be ineffective. In this case, if the zoning is used as a basis for TDR, development may occur far into the future at low density levels without purchase of development right and compensation to restricted property owners (Barrows Richard L., Prenguber Bruce A., 1975, p.550).

. In the case of public authorities having decided on some formula for the endowment of land in the preserved area with development rights, two major avenues present themselves. The first one will be the TDR agency that try to calculate the aggregate reduction involve engendered by the development restrictions. It yields a price per development right when divided by the number of development rights created. In this case, the public agency could then try to enforce this price in transactions among buyers and sellers which would be one way of ensuring a specified level of compensation to development rights owners. The second one is simply to let

the new development rights owners sell their rights for whatever they are able to get for them. This ensures that any transaction prices will equal or exceed reservation prices. But it does not ensure that the necessary demand will be forth coming (Field and Conrad, 1975, p. 333).

The structure of the development industry determines the quantity of development rights demanded. Firstly, it has to be assumed that developers are competitors for the right to develop in the transferred area. In the figure 3.4, marginal revenue and cost curves can be derived.

In this figure, MC1 and MR1 are the given curves, at the optimal development density at D1. Supposing, as a part of the TDR program the public agency sets an upper bound on density at D2. So, this situation creates a willingness of developers in order to have the maximum density, increased back to D1. "abc" is the area of that willingness to pay. But the dollar amount of "abc" might only be forthcoming if developers can be confronted with an all-or-none situation. But all-or-non situations require a high degree of organization (in this case, the monopolist would be an intervening public agency)[1] .

It is assumed that developers are entitled to buy any amount of development rights up to OC in the figure 3.3 at some fixed price set by a public agency.

So in this situation, marginal development cost curve shifts upwards to MC2, and in this case, the optimum density (from the developers point of view) has fallen to D4. "Under this system down zoning may have to be carried farther to generate the necessary demand for development rights" (Field B., Conrad Jon, 1975, p.334).

It is known that, in market situation, developers can purchase development rights at a constant price, if and only if when some legal price limit is put. But if sellers are allowed to sell their DR's freely, there will be a rising supply price for development rights.

If the situation of down zoning being created at the point of density D3, developers were required to bargain freely with development rights' owners and pay appropriate reservation prices for these rights, and if we do an assumption of rising reservation prices by increasing quantity purchased, we will have a new marginal cost curve MC3, with the optimum development density D5. Now, it's possible that all development rights have been purchased. This depends on the density units that have been converted into development right's units. Because a different marginal cost curve will ensure for each different "conversion ratio" (Field B., Conrad Jon, 1975, p.333).

In the case of rising supply price, the situation becomes more complicated. To develop sufficient effective demand for these rights two variables can be manipulated: the conversion ratio and the degree between development rights units and development density units of down zoning. For example, a conversion ratio of two would require purchase of two development rights of every unit relaxation of the density restriction.

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[1] 'They require not only that the market be monopolized, in this case, the monopolist must have perfect knowledge of the net revenue function of the developers so that the desired aggregate revenue for development right holders might be obtained' (1, p.334).

It is politically difficult to manipulate them, and also, developers or development right owners will suffer losses in income from such manipulations, they can be expected to resist them. There is greater emphasis on correctly specifying the level of down zone and conversion ratio at the time the program is initiated.

To explain the conversion ratio, assume that both the supply function for development rights and the amount of down zoning are given. Then the conversion ratio between development rights and density units can be either decreased or increased. Conversion ratio must be increased to get an increase in the number of development rights demanded, requiring more development rights per unit of added density. The opposite at the situation is possible but the correct strategy depends on they elasticity of demand for density in the development area. This can be analyzed by figure 3.5. The northwest quadrant of the figure, shows the rising supply curve for development rights. Marginal net revenue curve MR1 is in the northeast quadrant and it is obtained by the subtraction of the MC from the MR curve as drown in figure 3.4. At the point D* there is optimal controlled development density. In order to create a demand for development rights assume that down zoning to D' takes place. The developer now faces a new marginal cost curve, for beyond D' it is necessary to buy development rights in addition to incurring normal development costs. New marginal cost curve will be MC1, if the conversion ratio Ÿ= R/ (D-D') is set equal to unity.

This situation creates an increase in the density to D1 and this would translate into a demand for R1 units of development rights. If the authorities had created R* development rights, there will be insufficient demand and of conversion ratio increases to Ÿ= R/(D-D')=2, the marginal cost curve shifts to MC2 and optimal density will be D2 but this translates into R2 units of development rights (R2>R1). In this case, as the conversion ratio increase, the demand for development rights increases.

This situation will always not be true according to Field and Conrad (1975). In the case of demand for development being more price is elastic than before and it is now presented by the net marginal revenue curve MR2, with the same optimal density units D1 number of development rights purchased increases as the conversion ratio decreases. Lowering the ratio Ÿ=1/2 results in increased density to D1/2 and an increase in development rights taken to R1/2 (Field B., Conrad Jon, 1975, p.336-338).

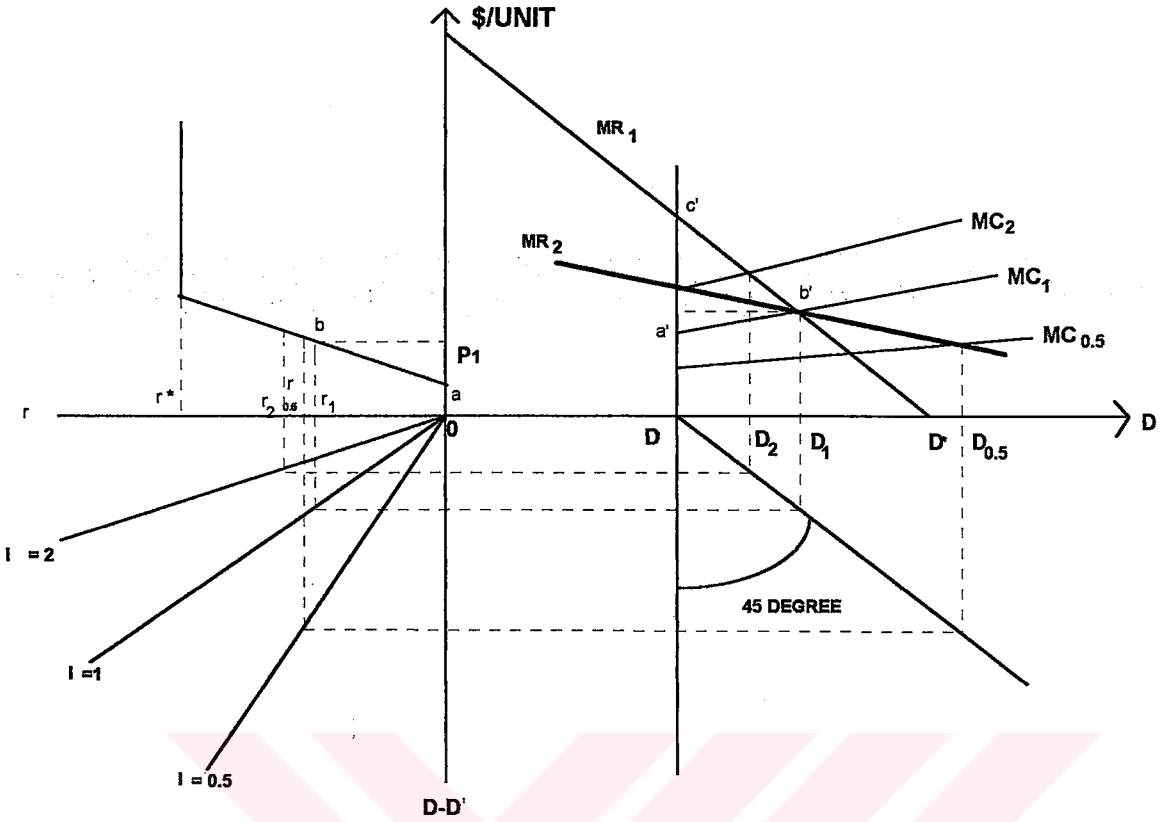


Figure3: Analysis Of Development Right Conversion Ratio (Field and Conrad, 1975, p. 337) .

EFFICIENCY ASPECT OF TDR

There is usually dissatisfaction of existing land use regulations in the United States of America. In general, zoning is the one of these regulations, it has succeeded only in preserving existing neighborhoods. Therefore, it is needed a number of alternative proposals like the technique of transfer of development rights to solve such dissatisfactions.

It is possible to achieve positive land use goals and to escape from windfall-wipeout dilemma by the TDR technique. Windfall is an increase in the value of real estate or by general inflation, wipeout can be defined as a decrease in the value of real estate not caused by the owner or by general deflation.

There are two reasons of windfall and wipeout those caused by governmental action and those due to growth. "If a wipeout occurs due to a governmental regulation, the looser may charge that government has unjustly taken his property without compensation. If another area receives a windfall as a result of the governmental action and if that windfall can be recaptured and transferred to the loser as compensation, the situation is one of a potential Pareto Improvement" (Barresse J.T., 1983, p.235). In this case, TDR is a more equitable outcome by its compensation criteria.

Therefore, efficiency criteria could be the basis of a TDR program, since it deletes the windfall and wipeout dilemma. In any TDR process, there is generally no exact correspondence between those who gain and those who loose due to a

governmental regulation. If such a correspondence exists it could be determined theoretically if the action resulted in an efficiency gain. "If the sum required for compensation was an accurate measure of the total societal costs of a proposed change in land use, and if the amount recaptured at least covered these compensation requirements... the change could be represented as a potential Pareto Improvement" (Barresse J.T., 1983, p.236).

In the transferable development rights programs, the efficiency aspect and the distributional issues are generally confused. According to Field and Conrad (1975) efficiency matters are; the density of development in the transfer area, and the volume of rights transferred. Other efficiency characteristics like most environmentally valuable land and the relative amount of land protected per dollar also need to be investigated. According to Barrese (1983), the relationship between those persons who gained or those who lost with governmental action is important. Because theoretically governmental interference will be determined if the action results in an efficiency gain.

According to Barresse (1983), if there were limits on development which could be exceeded subject to planning permissions, the landowner would receive a windfall, on the condition that the price of allowing the developer to pass the limit is the purchase of Development Right Certificate (DRC). Although this is a windfall, it is a good way to compensate those suffering wipeouts in the preservation area. So, the result is a potential efficiency gain. In cases where development restrictions must be imposed on both areas, the desired land use goals must be achieved and a sufficient demand for DRC's must be ensured, then the landowners in both areas suffer wipeouts. The TDR program scheme in this case, compensates one group, the preservation area owners, but not the other according to Barresse (1983).

According to Barresse there will be two cases

CASE 1: LP<=GT and LT=0, with LP,GT>0

CASE 2: LT=LP<=GT, with LP,LT,GT>0,

Where LT=Loss of the owners in the transfer area, LP=Loss of the owners in the preservation area, GT=Gain to owners in the transfer area.

In the first case, a potential efficiency exists. In the second case, in order to achieve a potential efficiency, the formula must be held.

According to Barresse (1983), GT will be greater than LT only under implausible circumstances. "That is, down zoning (must if the propose is to create value for DRC's) result in a loss of speculative value to landowners in the transfer area. In order to develop land in the transfer area, developers must purchase DRC's presumably at a positive price" (Barresse, 1983, p. 237). He questions whether the net gain to developers is greater than the net loss to landowners in the transfer area. Net gain to exceed the net loss is a possibility and the probability of such an outcome will depend upon the circumstances of each plan. According to Barrasse (1983), there are alternatives on such areas like A (preserved area) and B (transfer area).

1- The relative desirability of the area B, may increase due to the reduction of either potential competition for land intensive services such as rental, housing, a reduction of the growth of these stocks over time (relative to the growth of demand) or both.

2- The desirability of the area B may increase due to a reduction of negative slipover effects from the now-regulated area A.

3- There may be no effect if there is little or no relationship between the two areas or between areas B's desirability and the purposes of the regulation in area A.

4- There may be negative effect due either to fear of possible further regulations or a rising of total development cost (including administrative costs) within the area.

"Say that one or four could lead to an efficiency gain because the first one grants a degree of monopoly power, a different market imperfection while the forth increases rather than reduces costs (monetary or nonmonetary) and the second may lead to a possible gain in either case I or II, but a review of the relevant legislation indicated that this is not likely to be used as a basis for selecting the transfer area." (Barresse, 1983, p.237). He determines the third effect as leading to an efficiency gain only in case I. Because if a restriction is important on an area and no gain occurs as a result of a regulation imposed elsewhere, than the landowners in that area suffer, i.e., LT and if these restrictions are than relaxed, the landowners will gain GT. Additionally, if the regulations do not substantially affect the desirability of the area, GT can never be greater than LT. (Barrese, 1983, p.237-238).

The other important factor in the efficiency, is the choosing of a transfer area. In most of the applications of the TDR program in the US., transfer area is chosen according to the current demand. Moreover there is no specified need for a relationship to exist between the transfer and preservation areas. In New York City the relationship exist only as a possibility not as a requirement for selection.

Therefore, if the transfer area is selected on the basis of its relationship to the preservation area, it is possible that, a social inefficiency might result. So, the followings might not occur:

CASE 1A: LP+LNLO<=GNLO or

CASE 2A: LP+LT+LNLO<=GT+GNLO.

Where LNLO is the social cost accruing to those who do not own land in the TDR-affected areas, and GNLO is the similarly defined again.

In general in any TDR process the outcome has to be stated with the accurate measurement of costs and benefits regularly. Barresse stated two considerations: ".... current schemes which attempt to compensation owners in the preservation area alone are arbitrary. It is not clear that those who gain from a regulation have anything to do with those who pay for the compensation of preservation area landowners..... Secondly, since case II, is the most frequently proposed TDR plan, it may be probable

that compensation- recapture schemes such as TDR (as presently administered) will not lead to social efficiencies" (Barresse, 1983, p.238).

EQUITY ASPECTS OF TDR

Equity consideration is a basic economic criterion for the assessment of development rights program. The question of who receives the benefits and who bears the costs is the equity question. Mostly, TDR schemes are designed to have an equitable impact on present landowners. Payments are received by landowners from preserved area for land value losers.

Equity is much depended on how the development right market functions. According to Field and Conrad; " In the well organized and well informed marked with many buyers and sellers, theory suggest that, transfer would not take place until excess demand was zero; then a single per unit price would govern all transactions.....but in a poorly organized market, when buyers are few relative to sellers, prospective developers might be able to identify those holders of the DR's, who have relatively low reservation prices and contract for transfer at those prices" (Field, Conrad, 1975, p.338).

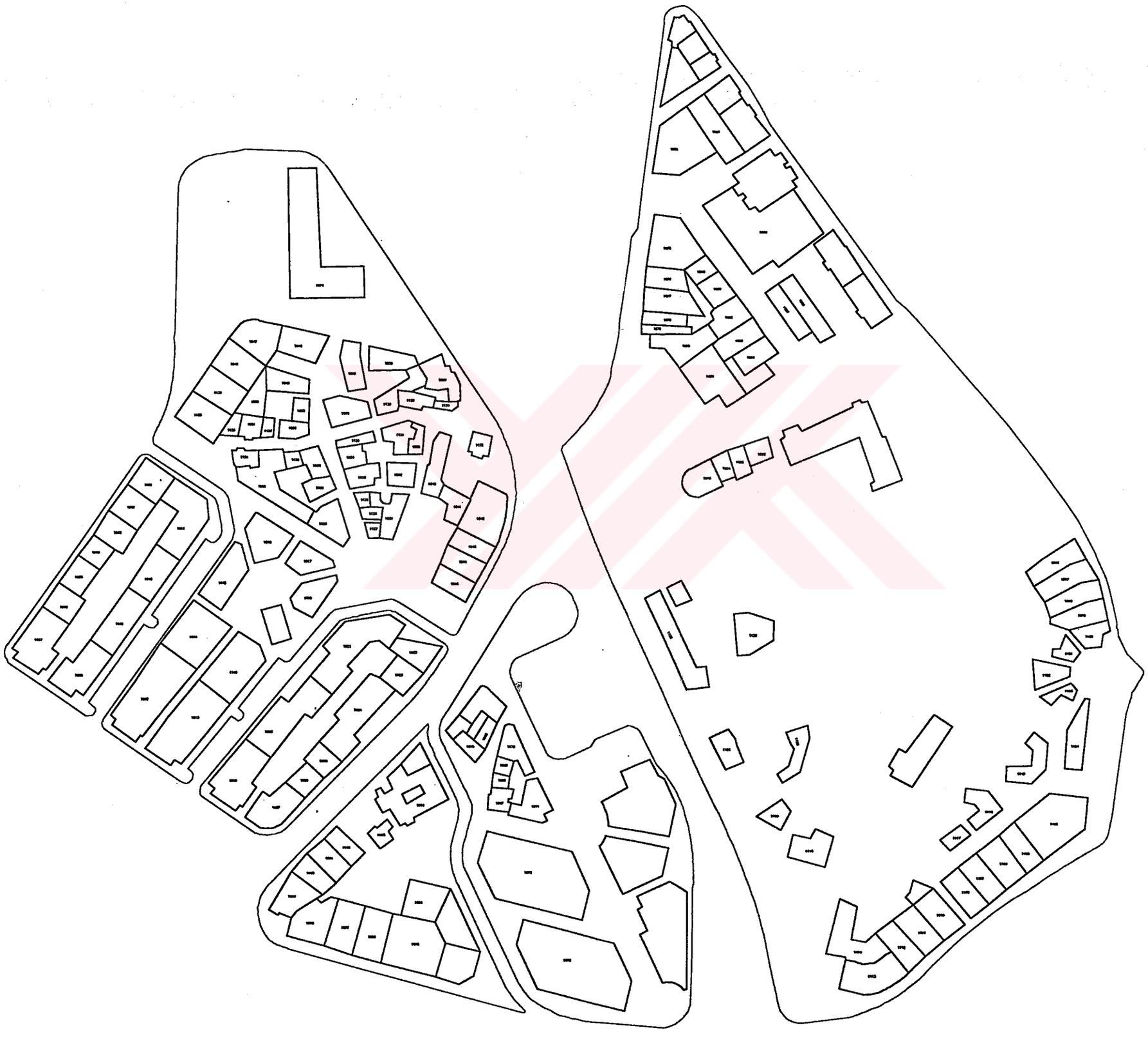
Also competition has an important role for equity consideration. Because the lower the degree of competition, giving the developer increasing powers of price making, the higher the likelihood that development rights costs can be passed on to future occupants. If there is a guaranty of permanent open space within the planning area (superior to other developments outside the area), higher prices could result from a demand for proximity to such open space.

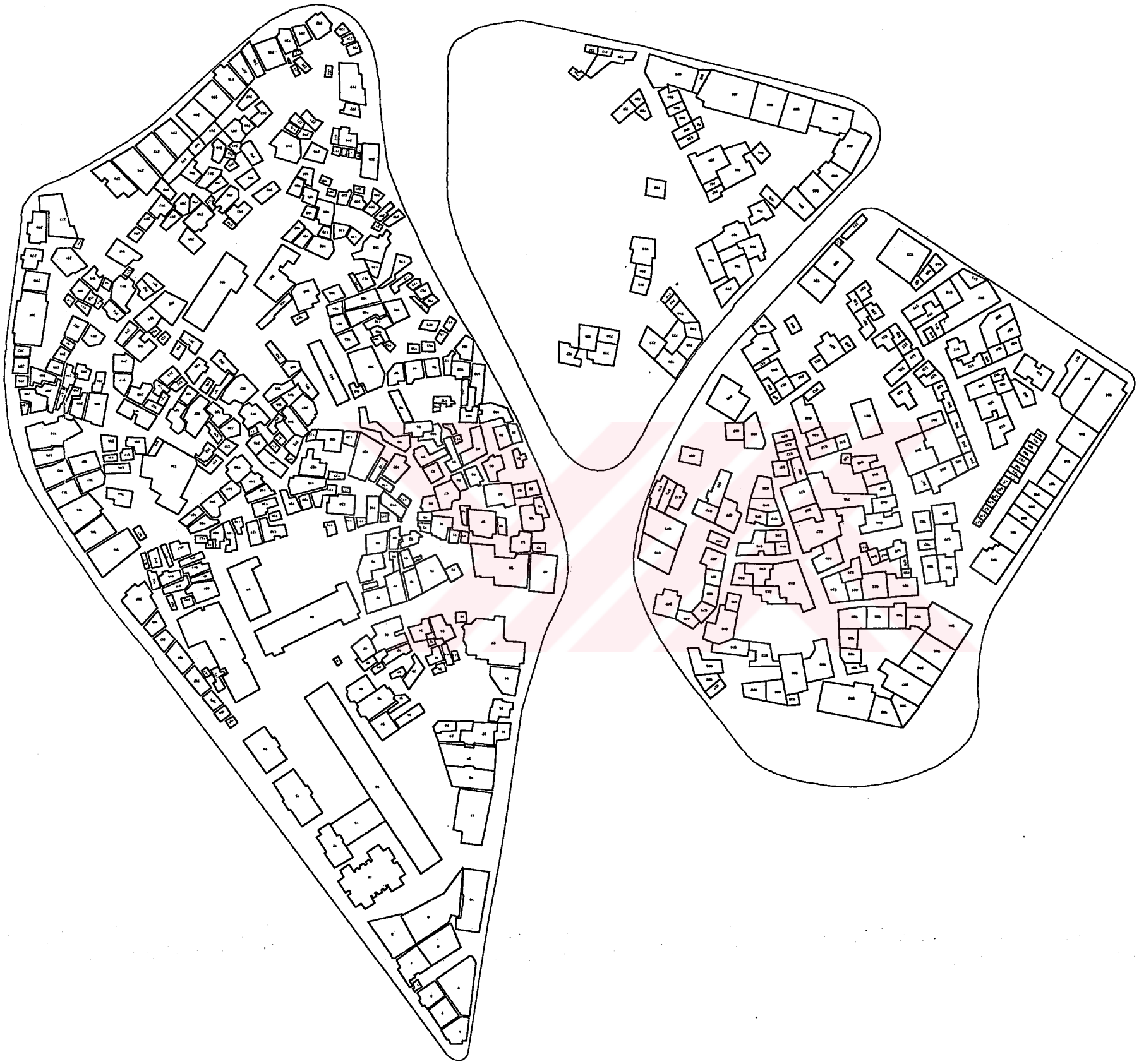
Additionally, if land use regulation causes significant amounts of development to be shifted to another region, aggregate land value in regulated area may decline, because of a quantity reduction over time and reduction in agglomeration economies relative to other areas. Therefore, the effect on one group of landowners will be different than others.

The other side of equity aspect relates with the people that do not own land in the regulation affected areas. They are not taken into consideration in plans, but they are also effected with the TDR implementation in the area. It should be considered and designed in the TDR implementation process.

So the determination of those increments in property value, require compensation. If compensation is made, the equity consideration will be occurred.

This part of the thesis proves that TDR has not got a unique solution to variety of land use problems. The program should be designed and considered according to the characteristics of the problem areas. Therefore, a unique program design will not solve the problems of urban areas, the basis of the program will be the same but the characteristics of the program should be changed according to the different aspects of the problem areas in urban and rural areas.





ÖZGEŞMİŞ

1962 yılında Ankara'da doğdum. Orta ve lise öğrenimimi Eskişehir Anadolu Lisesinde tamamladım. 1984 yılında Anadolu Üniversitesi, Eğitim Fakültesi, İngiliz Dili Eğitimi Anabilim Dalı, İngilizce Öğretmenliği Bölümünden mezun oldum. 1984/85 öğrenim yılından bu yana Anadolu Üniversitesinde çalışmaktayım.

Halen Anadolu Üniversitesi Mühendislik Mimarlık Fakültesi'nde İngilizce Okutmanı olarak görev yapmaktayım. Evliyim.

Semih Şahinel