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PLANNING FOR PUBLIC STADIUMS

A THESIS

Presented to

the Faculty of the Graduate Division

by

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## SUMMARY

The purpose of this study is to provide information about public stadiums for city planners and other public officials. It is limited to an analysis of stadiums intended for primary occupancy by major league baseball or football teams. Stadiums built to serve minor league teams, high schools or universities are not included since these facilities have different economic, locational and design requirements.

The city planner should be involved early in any stadium effort. His professional training and unique role in the community qualify him as a valuable resource. The planner's duties include developing rapport with stadium committees, advising officials of stadium needs and sites, modifying affected city plans and performing related activities.

Before deciding to build a stadium, a community must evaluate many factors including: (1) the size of the stadium market, (2) the types of proposed stadium events, and (3) the financial capacity of a community to subsidize a stadium's operation. These findings forecast a stadium market's level of support and indicate whether the community needs a baseball, football or multi-purpose stadium.

Community benefits derived from a major league stadium are considerable. Principal among these is stimulation to the local economy provided by the payrolls of professional teams and stadium staff and the introduction of "new money" into the community by out-of-town fans. Other benefits include local fan expenditures,

national and regional publicity, increased availability of outdoor recreational activities, and development of stadium-related facilities, such as hotels and motels, restaurants and service stations.

Stadium site selection evaluates many factors, including land area and accessibility requirements, the availability of needed public services and the extent a proposed stadium location enhances urban growth. Site selection also anticipates future city development by choosing a stadium location that remains accessible.

Any successful stadium program needs widespread community support including the early endorsement of governmental and community leaders. This is true because if extensive public apathy or opposition exist, the community's chances of building a stadium and successfully obtaining a major league franchise are probably limited. The city planner can help stimulate this support by insuring that the news media and public interest groups remain apprised of stadium plans and projected benefits.

By following recommendations presented in this study, a community reduces or eliminates many stadium costs and enhances stadium benefits. The city planner helps secure these savings which are the goals of all public stadium programs.

## CHAPTER I

### INTRODUCTION

Since the early 1950's there has been a marked increase in the demand for public stadiums. In recent years, stadiums have been erected in the cities of Anaheim, Atlanta, Cincinnati, Houston, New York, Oakland, Pittsburgh, St. Louis, and Washington. New stadiums are currently in the planning stage or are already under construction in such cities as Buffalo, Kansas City, New Orleans and Seattle.

The market for stadium activities has been growing steadily. Expenditures for admission to spectator sports more than doubled between the years 1950 and 1969.<sup>1</sup> By the year 2000, the Outdoor Recreation Resources Review Commission (ORRRC) forecasts a 166 per cent gain over 1960 attendance at outdoor sporting events.<sup>2</sup>

#### Factors Stimulating Interest

Some of the factors which have stimulated interest in new stadiums are well known. Perhaps the four most important reasons have been: (1) increased population concentrations in urban areas, (2) increased amounts of leisure time, (3) higher personal incomes, and (4) increased coverage of stadium events provided by the broadcasting industry.

### Increased Population Concentrations

Stadium events are essentially urban activities. A large population living within reasonable distance of a stadium must be present to provide a stadium's economic support. The rapid population growth, coupled with its greater concentration in urban areas should help provide increased spectator support for stadium events.

### Increased Leisure Time

The average workweek declined from 44 hours in 1950 to less than 40 hours in 1960.<sup>3</sup> By 1976 it is estimated that the standard workweek will average 36 hours and will decrease to 32 hours by 2000.<sup>4</sup> The adoption of paid vacations by a greater number of industries and an increase in the number of official holidays will also provide more leisure time. These greater amounts of leisure time should help provide more people with opportunities to attend stadium events.

### Higher Personal Incomes

Income has a decided influence on participation rates in recreational activities. Studies conducted by the ORRRC indicate that as personal incomes increase there is a corresponding growth in the rate of participation in recreational activities.

The 1969 median family income of \$9,400 represents a 185 per cent increase over the 1950 level of \$3,300.<sup>5</sup> In 1950, only 23 per cent of American families had incomes of over \$5,000 per annum. By 1969 this figure exceeded 80 per cent.<sup>6</sup> Because today's income pattern is higher and more evenly distributed a wider audience potential exists for most stadium events.

### Increased Broadcasting Industry Coverage

The broadcasting industry has provided extensive coverage of major league football and baseball and collegiate football games. These media have undoubtedly helped stimulate fan interest in these stadium sports.

### Support for Stadium Events

As shown in Table 1, attendance at all major stadium events increased substantially between the years 1950 and 1970. Major league football attendance experienced the sharpest growth, increasing from 2 million to 9.9 million--a 395 per cent increase. Horse racing attendance experienced the next sharpest growth, by increasing from 29.3 million to 69.7 million--a 138 per cent increase.

The creation of new major league teams and the expansion of team schedules has been partially responsible for increased attendance at major league sporting events. In recent years, major league football teams have increased their season schedules from 12 to 14 games. Also, in 1960 a new football league (American Football League) consisting of eight teams, which was later expanded to ten teams, was created. The older league (National Football League) increased its league membership from 12 to 16 teams during the 1960's.

Since 1960 major league baseball has added eight new teams and each league now contains 12 teams. Each team also plays a 162-game, rather than its former 154-game, schedule.

Major league baseball has also undergone many franchise shifts. Since 1953 when the former Boston Braves moved to Milwaukee, nine franchise shifts, involving eight teams, have occurred (the former Philadelphia Athletics have moved

Table 1. Attendance at Major Stadium Events, 1950-1970

Category	1950 Attendance (in millions)	1970 Attendance (in millions)	Per Cent Change
Collegiate Football	19.0	29.5	55.3
Horse Racing	29.3	69.7	137.9
Major League Baseball	17.7	29.0	63.8
Major League Football	2.0	9.9	395.0

Source: 1. U. S. Bureau of the Census. Statistical Abstract of the United States: 1971. (92nd edition) Washington, D. C., 1971.

2. Newspaper Enterprise Association, Inc. The World Almanac and Book of Facts: 1972. (104th edition) Cleveland, Ohio, 1971.

twice).

The increased attendance at most stadium events seems impressive and there is every reason to expect these trends to continue. Studies conducted by the ORRRC and other agencies indicate the peak demand has not arrived.

### Purpose

The purpose of this thesis is to provide information about public stadiums for planners and other public officials. Since the demand for new stadiums is increasing, planners should be cognizant of the steps involved in planning for these facilities.

The erection of a stadium can significantly influence a community's development. A properly planned stadium can help stimulate an area's economy, serve as an entertainment center and community landmark. A poorly planned or unneeded stadium can help to drain a community's resources.

### Organization

This thesis is organized to present criteria involved in planning for public stadiums. Chapter II discusses stadiums and related facilities. It examines the various designs and uses of stadiums. The chapter also reviews how stadiums are operated and discusses the types of land uses found near stadiums.

Chapter III presents the economics involved in planning for public stadiums. The chapter discusses the economic and market characteristics of major league baseball and football teams and presents the factors involved in a stadium market analysis. The chapter also examines how various stadiums are financed and

reviews the economic benefits of public stadiums for local communities.

Chapter IV presents the factors involved in the selection of a stadium site. The chapter examines such factors as a stadium's land area and accessibility requirements, the types of needed public services, and general locational criteria. The last chapter, Chapter V, presents the City Planner's role in developing a public stadium program.

#### Scope of Study

This thesis is limited to a study of public stadiums intended for primary occupancy by major league baseball or football teams. Stadiums which are built to serve minor league teams, high schools or universities are not included since these facilities have different economic, locational and design requirements. Automobile and horse racetracks and fairground grandstands are not included for similar reasons.

The information contained in this thesis is directly applicable for cities planning stadiums for major league teams. The writer believes, however, that much of this thesis information, such as the information on public stadiums and the factors involved in a stadium's site selection, will assist any city which is planning to erect a stadium.

## CHAPTER II

### PUBLIC STADIUMS

The word "stadium" is derived from the Greek word stadion which means a unit of length equal to 606 feet, 9 inches.<sup>7</sup> This length was the distance of the original Olympian foot race which was named for this measurement. As time progressed, the term was used to describe the area where the race was held including the terraced rows of seats along the sides of the track.

In modern usage a stadium is a large structure which contains seats for spectators and surrounds a central area for athletic events and public exhibitions. The facility proper, whether used for football, baseball, races, pageants, or related events is a stadium. "Nothing in the modern definition prevents a stadium from having a roof or being enclosed in a building."<sup>8</sup>

The purpose of a stadium is to provide adequate facilities for the sport involved. The stadium must have regulation size playing fields, and spectator seating must be comfortable and convenient. All seats should be oriented so that spectators have a clear view of a playing field.

As noted above, however, the scope of this thesis is limited to a study of stadium requirements for major league baseball and football teams.

#### Types of Stadiums

Three types of stadiums used to accommodate major league teams are:

(1) baseball stadiums, (2) football stadiums, and (3) multi-purpose stadiums.

In some cases, baseball stadiums may be used for football games and football stadiums for baseball games. However, these arrangements are generally unsatisfactory because each sport has different stadium design criteria.

Multi-purpose stadiums, a relatively recent innovation, are intended to accommodate both baseball and football events. A compromise in stadium design is employed to achieve a facility that can serve both sports.

### Baseball Stadiums

The size and design of major league baseball stadiums vary widely. Seating capacities range from a low of 28,500 at Jarry Stadium in Montreal, to a high of 77,000 at Municipal Stadium in Cleveland.<sup>9</sup> The design of baseball stadiums does not conform to any uniform standard. The only dimensional requirement is that foul line lengths must be at least 325 feet.<sup>10</sup>

Major league baseball owners prefer stadium capacities of about 45,000.<sup>11</sup> If a stadium capacity is much larger than this, it may adversely affect advance ticket sales. Most baseball games are played before less than capacity crowds, and if fans know ample seating will be available, they may wait to buy their tickets at lower prices on the day of the game.

Baseball seating is usually concentrated around the infield since this is the main activity area. This concentration causes more multi-decked baseball stadiums than football stadiums of comparable capacity. Additional seating is usually located along the foul lines and may encircle the outfield.

In recent years baseball attendance has not kept pace with attendance

increases recorded in other major sports. In order to help attract additional fans, new stadiums feature such items as stadium clubs, restaurants, and other luxury facilities.

### Football Stadiums

The standard layout for older football stadiums consisted of a football field surrounded by a quarter-mile track. Spectator seating was distributed along the sidelines between the goal posts. Larger stadiums had additional seating in the end zone areas, but this seating is usually undesirable since it does not offer a good view of the playing field.

Experience has indicated that track facilities should not be included in football stadiums. Stadium officials advise against including these facilities since track and field events are held infrequently and do not attract large crowds. A stadium's design potential for football events is weakened if track facilities are included.

Major league football owners consider optimum stadium capacities to be about 60,000.<sup>12</sup> This capacity is believed to be sufficiently large to handle most crowds, but is not large enough to discourage advance ticket sales.

A football stadium requires only minimal facilities to serve its purpose. Only a few games are held each year and stadium clubs, restaurants, and other luxury facilities are not needed.

### Multi-Purpose Stadiums

As noted above, multi-purpose stadiums are relatively new. These stadiums generally have a circular shape and are designed to provide facilities for

baseball, football, and related events. Nearly all of the recently completed major league stadiums have been multi-purpose stadiums.

Baseball seating capacities in recently completed multi-purpose stadiums range from a low of 45,000 in Anaheim, Houston, and Washington, to a high of 56,400 in Philadelphia.<sup>13</sup> Football seating capacities range from a low of 50,400 in St. Louis, to a high of 65,000 in Philadelphia.<sup>14</sup>

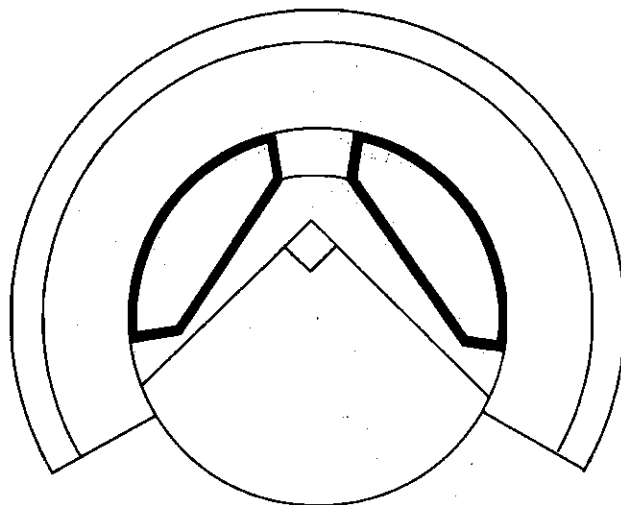
Seating capacities in multi-purpose stadiums are higher for football than for baseball. Since football games do not require as much field area as baseball games, removable grandstands are often added along a football field's sidelines.

Stadiums such as Shea Stadium in New York and Busch Memorial Stadium in St. Louis achieve a partial seating design change for either sport by the use of movable field level stands. At Shea Stadium, for example, two sections of stands (10,000 seats) are rotated along curved tracks to provide the best seating angle for either sport. The seats are located along each foul line for baseball games and are rotated to a position along a football field's sidelines for football games. Figure 1 illustrates this seating concept.

Advantages. Obviously, a multi-purpose stadium requires less land area than two separate stadiums. This fact is important in close-in urban areas where land costs become a limiting factor in stadium design. The cost of constructing a multi-purpose stadium is also less than the cost of constructing two separate stadiums.

Seating arrangements in multi-purpose stadiums are not as desirable as those provided in "single-purpose" stadiums. However, the seating can be

Heavy lines indicate position of rotating stands for baseball games.



For football games the stands are moved to the position shown below.

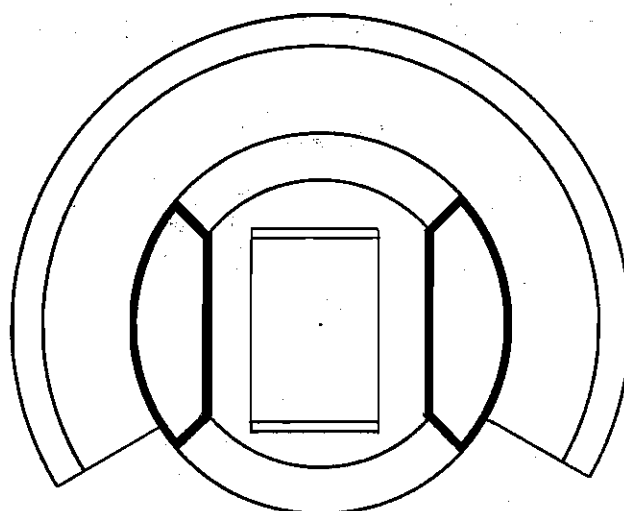


Figure 1. Position of Movable Stands for Baseball and Football Games.

designed to provide a clear view of all parts of a playing field.

A multi-purpose stadium can have certain features incorporated in its design that will allow for a roof and enclosed walls to be added at a later date. This addition can enhance a stadium's ultimate value to a community as an enclosed air conditioned sports arena.

Disadvantages. The main disadvantage of a multi-purpose stadium is the inherent compromise in seating arrangements which must be made to accommodate both baseball and football events. A multi-purpose stadium cannot be designed with seating facilities that offer as desirable a view of the playing field as if the stadium had been designed for one sport. For example, a large proportion of the seating in a multi-purpose stadium will be located in the end zone areas for football games and at excessive distances from the infield for baseball games.

It is difficult to maintain a playing field in a multi-purpose stadium during the late summer months when both baseball and football teams are using it. Baseball and football team schedules must be coordinated to avoid stadium-use conflicts.

Converting a stadium for either baseball or football events is expensive and may involve such items as sodding the playing field, dismantling and erecting temporary seats, backstops, goal posts, fences, and pitcher's mounds. A football field usually covers some part of the skinned portion of a baseball infield which may prove hazardous to football players.

#### Stadium Personnel

Stadium personnel provide routine stadium maintenance and perform other functions needed to maintain a stadium. These personnel usually include:

carpenters, electricians, painters, plumbers, general maintenance personnel and security watchmen.

A stadium manager is normally appointed to oversee a stadium's operation. He is in charge of all stadium personnel and is responsible for insuring that proper stadium maintenance is maintained. A stadium manager normally has a secretary to assist him in the performance of routine administrative duties.

The number of needed stadium personnel depends upon a stadium's lease provisions in effect with its tenants, concessionaires, and parking lot operators. Other influencing factors may include: (1) the type of stadium, (2) the frequency of stadium usage, and (3) local weather conditions.

#### Stadium Facilities

All stadiums require certain features to support their primary function. Each type of stadium may have some requirements that are unique. However, all stadiums need such items as easy accessibility, proper maintenance, and adequate spectator facilities. Listed below are some of the principal facility requirements of public stadiums.

#### Maintenance

The successful operation of a stadium is to a large extent dependent upon its having proper maintenance facilities. Offices must be provided for a stadium manager and his administrative assistants. Maintenance personnel areas, including storage rooms for stadium equipment must be available. Dressing rooms for concession workers, ticket sales personnel and stadium ushers are also needed.

### Parking

Parking capacities at major league stadiums vary widely. A desirable parking ratio is about one automobile space for every four seats.<sup>15</sup> Since many fans come to stadium events by public transportation, adequate bus and taxi loading areas are also needed. Stadium designers usually consult local transit officials to determine bus parking requirements. Stadium parking standards are discussed further in Chapter IV.

### Press

The provision of adequate press facilities is an essential element in a stadium's operation. If members of the press are dissatisfied with their accommodations they may comment unfavorably on other stadium aspects. Adequate press facilities thus become a major public relations effort and stadium designers usually provide whatever facilities members of the press desire.<sup>16</sup>

### Spectator

A spectator should have easy access to a stadium from all parking areas and should be assured of easy circulation within a stadium. He should be provided with ample, comfortable seating that is conveniently located to ticket sales areas, restrooms, and concession stands.

### Tenant

Ample dressing facilities for team participants including television interview rooms, meeting rooms, storage areas and examination rooms are needed. In addition, a stadium tenant should be provided with adequate administrative offices.

### Uses of Stadiums

Public stadiums can normally accommodate more spectators than any other type of urban facility. In addition to being used for professional baseball and football games, stadiums can serve a variety of other community needs. Public stadiums can handle those events which generate wide spectator interest but cannot be accommodated in other facilities because of space or seating limitations.

Baseball and football stadiums are more restricted than multi-purpose stadiums in the total range of events they can accommodate. However, each of these stadiums can handle most, if not all, of the following functions: boxing and wrestling matches, college and high school football games, musical pageants, political rallies, religious convocations, rodeos, soccer matches, variety shows and other special events.

A domed stadium, such as the Astrodome in Houston, can handle all of the above functions, plus those events which require an indoor location. Some of the additional events domed stadiums can accommodate include: basketball games, beauty pageants, circuses, fashion events, and trade shows.

### New Features in Stadium Design

As noted above, most of the recently completed major league stadiums are designed for multi-purpose uses. Some of the newer stadiums may also feature such items as domes, sliding roofs, and synthetic turfs. These items represent new features in stadium design and are discussed below.

### Dome

Domed stadiums have probably been one of the most discussed stadium design aspects in recent years. The Astrodome in Houston which was completed in 1965 is the only existing domed stadium. However, the cities of Buffalo, Montreal, New Orleans and Seattle are currently studying plans to build domed stadiums.

The climate to a large extent determines the need for a domed stadium. Houston and New Orleans have humid, hot summers, while Seattle has cool summers but long rainy seasons. Although climates in all of the above cities vary, none is conducive to spectator comfort. The need for domed stadiums thus becomes more critical in areas with unfavorable climates for outdoor stadium events.

A dome over a stadium will almost double the cost of the entire stadium complex.<sup>17</sup> The expense of providing air conditioning is included in this estimate since this is an essential element in domed stadiums. Many cities originally planning to build domed stadiums have abandoned the idea after discovering the total costs involved.

### Sliding Roof

The city of Kansas City, Missouri, has been studying plans to build a two-stadium complex linked by two open-ended sliding roofs. These arc-shaped roofs join at their base to a rail system which will border the adjacent baseball and football stadiums. During periods of inclement weather the roofs cover either stadium in use.

### Synthetic Turf

The Astrodome in Houston was the first major league stadium whose playing field area was completely covered by synthetic turf. This material was installed in the Astrodome after stadium officials discovered grass could not grow well.

Reactions toward the use of synthetic turfs are generally favorable. Rain does not adversely affect a baseball infield that is covered with this material. Also, many football officials believe the use of synthetic turf can help significantly to reduce the risk of football injuries.

The use of synthetic turf helps reduce field maintenance problems. However, it is expensive and not extensively used. Estimates indicate, for example, it would cost over \$300,000 to provide this material in Atlanta Stadium.<sup>18</sup>

### Stadium Sponsorship

There is now widespread competition among cities to attract or retain major league football or baseball franchises. Some municipalities, such as Atlanta and Oakland, decided to build new stadiums in hopes of attracting major league teams. Other municipalities, such as Cincinnati, Philadelphia and Pittsburgh, built new stadiums to retain their existing franchises.

Only a few stadiums bring in enough revenues to pay their annual debt servicing costs. In most cases, a stadium sponsor must guarantee payment of a stadium's annual debt service costs.

### Private

Stadiums are seldom privately owned and operated. The size of the

required initial investment and the fact that only a few stadiums yield profitable returns dictate the need for public financing. An additional hindrance to private ownership is that a private investor may need to pay property taxes on the facility.

Only two of the major league stadiums erected in recent years were privately financed, and each received substantial public assistance. Dodger Stadium in Los Angeles was privately financed but was built on land donated by the city. Private investors sponsored this facility because they believed the Los Angeles market was sufficiently large to support a privately financed stadium.

Busch Memorial Stadium in St. Louis was also privately financed, but it received certain public subsidies. The City of St. Louis reserved the needed stadium land in a downtown urban renewal project area and also provided the stadium with all of the needed public services.

#### Government

Nearly all stadiums built in recent years were sponsored by a unit of government. All levels of government and various combinations of governments have sponsored public stadiums. The federal government has also participated in a stadium sponsorship since it provided the needed land and financial backing for Robert F. Kennedy Memorial Stadium in Washington.

Governments have had little choice about sponsoring public stadiums. As noted above, stadiums are expensive and require large capital expenditures. Atlanta Stadium, for example, cost over \$18 million, Shea Stadium cost over \$25 million, and Pittsburgh's new stadium cost about \$26 million.<sup>19</sup>

Cities and Counties. Most of the recently completed stadiums have been

sponsored by cities or counties, or joint city-county agreements. Cities have sponsored such facilities as Anaheim Stadium in California, Lambeau Field in Green Bay, Memorial Stadium in Baltimore, Shea Stadium in New York, and the new stadiums in Philadelphia and Pittsburgh.

Counties have sponsored such facilities as the Astrodome in Houston, and County Stadium in Milwaukee. Some of the stadiums that have received joint city-county backing include: Atlanta Stadium in Atlanta, Candlestick Park in San Francisco, Oakland-Alameda County Stadium in Oakland, and Cincinnati's new stadium.

States. None of the recently completed major league stadiums have had state sponsorship. However, plans have been proposed for state governments to sponsor stadiums in North Carolina and Louisiana. A proposal has also been made to have the state government in New York provide part of the financial backing for Buffalo's new stadium.

#### Adjacent Land Uses

A stadium's location within a metropolitan area influences the types of adjacent land uses it attracts. Stadiums located within or near a city's downtown area tend to attract such developments as hotels and motels, restaurants and, in some cases, office buildings. Stadiums in outlying suburban locations, such as Candlestick Park in San Francisco and Robert F. Kennedy Stadium in Washington, do not appear to attract any significant types of land developments.

Pittsburgh's new stadium is located in an urban renewal project area across the Allegheny River from the city's downtown district. There are plans

to build a large hotel facility in an area adjacent to this stadium.

As noted above, Busch Memorial Stadium is located in an urban renewal project area near downtown St. Louis. Plans have been proposed to build a large motel complex near this stadium.

Some developments may locate near a stadium in order to use a stadium's parking facilities. Cincinnati's new stadium is within a few blocks of the downtown area. Indications are that an office building will locate near this stadium and utilize the stadium's parking facilities during periods of non-stadium use.

## CHAPTER III

### ECONOMIC ANALYSES

The purpose of a stadium economic analysis is to determine a community's ability to support a public stadium. The study should evaluate a community's need for a stadium and should analyze all costs, including stadium tenant and financing arrangements.

Principal items to consider in determining a community's ability to support a stadium include: (1) the size of a stadium market, (2) the types of proposed stadium events, and (3) the financial capacity of a community to subsidize a stadium's operation. The most important criterion is the level of support a stadium's market area can provide.

Although major league baseball and football franchises are usually the principal occupants of major league stadiums, the two sports have different economic and market criteria. Because of these differences, some metropolitan areas can probably attract only one of these sports. The following section presents some of the principal economic and market factors associated with these two sports.

#### Baseball Economic and Market Factors

Baseball appeals to a wider economic spectrum than football for spectator support because its average ticket prices are cheaper. A major league baseball team uses a stadium about 80 times a season. The average fan therefore has numerous opportunities to attend baseball events.

### Attendance Patterns

A baseball team must be located in a large metropolitan area to draw its patrons. Baseball fans living near a stadium must be induced to return several times over a season. People who live outside a metropolitan area also attend baseball games but usually only do so on weekends.

A market study was conducted of the spectators who attended a baseball game at Dodger Stadium in 1962. The study revealed that although the Los Angeles population is widely dispersed, more than 50 per cent of the fans in attendance lived within a 12-mile radius of the stadium, and more than 90 per cent lived within a 25-mile radius.<sup>20</sup>

Baseball attendance is highest during the months of July and August.<sup>21</sup> Lower attendance occurs at early and late season games for a variety of reasons. During the early part of a season, inclement weather and the fact that schools are in session tend to hinder attendance. Lower attendance occurs in September because schools are in session, the final standings of most teams are predictable, and football games are competing for spectators.

Weather. Adverse weather tends to have a detrimental effect on baseball attendance. Spectators are not inclined to attend games during periods of inclement weather. Rain or extreme cold may cause several games to be postponed over a season.

Night Games. Baseball night games tend to attract more patrons than day games.<sup>22</sup> Saturday and Sunday afternoon games usually draw substantial crowds, however. Perhaps the two principal reasons for greater attendance at night games

are: (1) many baseball fans must work during daylight hours, and (2) the hot summer weather makes night baseball more conducive to spectator comfort.

Stadium Capacity Utilization. Most baseball games are played before less than capacity crowds. A 1962 study of major league stadium attendance revealed that only 0.20 per cent of the games drew crowds in excess of 55,000. The Los Angeles Dodgers lead all teams in stadium usage with a 65.6 per cent rating. In contrast, the Chicago Cubs, who did not play night games in their stadium, had one of the lowest ratings at 22.1 per cent. The average stadium capacity utilization rate for all major league stadiums was 32.8 per cent.<sup>23</sup>

#### Income Sources

The three most important income sources for most baseball franchises are, in their decreasing order of priority: (1) ticket sales, (2) radio and television broadcasting rights sales, and (3) concession sales.<sup>24</sup> Revenues produced by ticket and concession sales are directly dependent upon the level of spectator attendance, while radio and television broadcasting receipts are dependent upon the general level of public interest.

#### Radio and Television

Major league teams negotiate separately for the sale of their radio and television broadcasting rights. Some franchises can sell their broadcasting privileges to more stations than others because they have more favorable geographical locations. These teams consequently derive a greater proportion of their total income from these media. The Atlanta Braves, for example, are not located in as large a metropolitan area as most major league teams, but their geographical

location enables them to have one of baseball's largest broadcasting networks.

### Football Economic and Market Factors

A major league football team uses a stadium about eight times a year. Because of this more limited stadium usage, a football franchise does not generate as much stadium revenue over a season as does a baseball franchise.

### Attendance Patterns

Spectator support for major league football events frequently emanates from a wider geographic area than does spectator support for major league baseball.<sup>25</sup> This situation indicates that a major league football franchise could successfully operate in a smaller metropolitan area than could a baseball franchise. Green Bay, Wisconsin, for example, is a relatively small metropolitan area which supports a major league football franchise. Speculation exists that Birmingham, Alabama, another small metropolitan area by "major league standards," may be awarded a football franchise.

Going to a football game is a weekend event for many fans. Trips are planned events and tend to be less casual and impulsive than baseball trips. The weather is cool and people enjoy "dressing up" for these events. Fashionable clothes become an important item for many fans.

Since football ticket prices are considerably higher than baseball's, the sport appeals to a higher, but more limited economic spectrum for spectator support. Football fans, however, are generally willing to travel farther, stay longer, and spend more money than baseball fans.<sup>26</sup>

Weather. Adverse weather conditions do not affect football attendance as

sharply as it does baseball attendance. Football is a cold weather sport and rain or extreme cold merely tend to reduce attendance. The greater the importance of a particular game, the less effect inclement weather conditions will have on stadium attendance.<sup>27</sup>

A football field is seldom in too poor condition for a game to be played because of adverse weather. Football revenues for most franchises are not sharply affected by inclement weather, since most of their income is derived from season ticket sales.<sup>28</sup>

Stadium Capacity Utilization. There is a high correlation between a stadium's seating capacity and attendance at major league football games. Records of the National Football League indicate football attendance will average between 85 and 95 per cent of a stadium's seating capacity regardless of a team's league standing.<sup>29</sup>

#### Income Sources

The two major income sources for most major league football franchises are in their decreasing order of priority: (1) ticket sales, and (2) radio and television broadcasting rights sales. Concession sales are not a significant income source for most teams since they do not operate this franchise.<sup>30</sup>

#### Radio and Television

The newly created National Football League sells its telecasting privileges in package arrangements to the major broadcasting networks. Revenues produced by these sales are shared equally by each member of the 26-team league. This same practice was used by both the American and National Football leagues before their merger.

In 1970, the National Football League negotiated separate three or four year contracts, representing a total of about \$130 million, with the three major television networks.<sup>31</sup> Each member of this 26-team league was therefore assured of about \$1.25 million annually in television income.

### Market Analysis

The purpose of a stadium market analysis is to determine if sufficient community support exists to justify a stadium's construction. Since this is a very technical study, only qualified professionals should prepare it.

A stadium market analysis evaluates many factors, such as the availability of a baseball or football franchise, the population and income levels in a stadium's potential market area, and the competitive advantages of other cities that may be seeking a major league franchise.

### Franchise Availability

A community's chances of obtaining a major league franchise will depend upon many factors, only a few of which, such as an area's population and the general level of sports interest, are determined locally. Two of the most significant non-local franchise availability factors will include a league's existing policy toward franchise shifts and a team's attitude toward its present location.

Other significant franchise availability factors include: (1) whether a league is presently expanding; (2) whether a community's location compares favorably with existing franchise locations, an especially important factor for baseball team scheduling because of the frequent travel requirements; (3) whether a large potential broadcasting market exists, a significant factor if a city has a relatively low

total population and (4) whether a community has more assets than do competing franchise-seeking cities. Major league franchise shifts are also subject to the review and approval of the team owners in the respective leagues.

Although both major league baseball and football are presently exempt from the anti-trust laws, there are some congressional officials who want to change these rules. If these provisions are changed, it may become more difficult for franchise relocations to occur. Part of these recent anti-trust law change demands developed because of the vigorous opposition that was expressed in Milwaukee when the Braves moved to Atlanta, and in Seattle when the Brewers moved to Milwaukee.

Baseball. Major league baseball franchises generally have not expanded rapidly. Although eight new baseball franchises have been created since 1960, it appears that the existing 24 team franchises will probably be the maximum number for many years.<sup>32</sup>

There exists a widespread belief among many sources that because the number of "excellent" baseball players is limited, it will be difficult to create any new baseball franchises. The shrinking number of minor league teams seems to support this concept.

There are, of course, baseball franchise shifts. As noted earlier, nine such shifts have occurred since 1953.

Football. Eventually there may be 32 major league football teams.<sup>33</sup> Presently, there are 26 teams, and if 32 teams were created, six new teams would be added. The number "32" is significant, since four league divisions consisting

of eight teams each could be formed. This arrangement would be desirable for divisional play-offs and league championships.

A community's chances of obtaining a major league football team through a franchise shift are probably limited. Since 1960, only two franchise moves have occurred and both of these shifts occurred before the merger of the American and National Football leagues.

The possibility exists that a team may, because of league rules, be forced to relocate. For example, a rule of the recently reorganized National Football league specifies that all teams must compete in a 50,000 capacity stadium or larger, or must have definite plans to meet this requirement by the fall of 1970.<sup>34</sup> Partially because of this rule, the Boston Patriots moved from Fenway Park in Boston to a new stadium in Foxboro, Massachusetts.

#### Community Resources Inventory

A franchise-seeking community should evaluate its assets and liabilities toward obtaining a franchise. Any major league franchise that is considering a relocation will probably evaluate the assets of many cities. A city that compares its advantages and disadvantages with those of competing franchise-seeking cities can better determine its chances of securing a franchise. Recommended actions for obtaining a major league franchise and for city planning involvement in a stadium program are presented in Chapter V.

Population. The 1970 populations of metropolitan areas having major league baseball teams ranged from a low of 1.2 million in Kansas City, to a high of 11.5 million in New York.<sup>35</sup> Except for Green Bay, Wisconsin, the population of

metropolitan areas with football teams had a similar range. It appears that any community that is seeking a major league baseball franchise would probably need a total market population of at least one million people. However, for previously cited reasons, a major league football franchise may be willing to locate in a smaller community.

Governmental. A franchise-seeking community should study its local governmental structure to determine which government or combination of local governments is able to administer a stadium's construction and operation. This analysis should evaluate the local tax structure and estimate the approximate amount of funds available for a stadium's construction and operation.

As noted in Chapter II, public stadiums have been sponsored by many governments and combinations of governments. Since each community's governmental structure is unique, a stadium sponsorship arrangement that can function in one urban area may not be appropriate for another.

Geographical. A community's geographical location and climatic conditions can be an asset or a liability in seeking a major league franchise. For example, Atlanta's relatively low population total was offset by a desirable geographic location and favorable weather. Despite its adverse weather conditions for baseball, Montreal, Canada had sufficient assets in other areas, such as its total population and geographical location, to attract a major league franchise.

Until 1971, Dallas and Fort Worth, Texas, were unsuccessful in obtaining a major league baseball team. Although the total population of these cities is relatively large, both were hindered in seeking a major league baseball franchise

because they are located within the broadcasting market area of the Houston Astros' baseball team.

Geographical locations are especially important for baseball team scheduling arrangements. Oakland, California, for example, was in a favorable location for a major league baseball franchise since only the California Angels of the American League was located on the West Coast.

#### Stadium Use Inventory

If a community has evaluated its potential for attracting a major league franchise and the chances seem favorable, the city should then determine what other types of community events might use a stadium. For example, a community should know if any local high schools, colleges or universities need a stadium.

A community should also determine if adequate community facilities exist for musical pageants, political rallies and other special events. If existing facilities are adequate, there is no purpose in including these events in the proposed range of stadium uses. Any attempt to attract events from existing publicly owned facilities is self-defeating and results in a needless expenditure of public funds.

#### Development of Stadium Concept

After evaluating the range of proposed stadium uses, the community should determine the type and design of stadium needed. Obviously, a stadium is not needed if no franchise is available.

The primary tenant in a multi-purpose stadium should be a baseball team. Major league baseball teams use a stadium at least 75 times during the season and generate a large proportion of a stadium's total revenues. A football team

is the next principal tenant being used about seven or eight times a season. Its revenues, while important, are secondary to baseball's.

If a major league franchise is available and only a "single-purpose" stadium is needed, the stadium should be designed for the tenant available, i. e. either football or baseball. If chances of attracting both types of franchises seem favorable, a multi-purpose stadium is desirable.

Stadium sponsors should consider joint use of an existing university stadium if only a football franchise is available. This is true because it does not seem to be a valid use of public funds to erect a major league stadium for football use only if an existing university stadium with ample seating capacity, is available. Stadium scheduling conflicts would be minimized because of college football's Saturday, versus professional football's Sunday, use.

After the stadium use concept, including the proposed range of stadium events and the type of stadium design needed, has been established, a more detailed stadium cost analysis should be prepared.

### Cost Analysis

The principal costs associated with a stadium facility include: (1) land acquisition, (2) off-site improvements, (3) stadium construction, (4) stadium operation, and (5) debt service. The first three categories are capital expenditures, whereas the latter two are annual expenditures.

#### Land Acquisition

A stadium's land acquisition cost depends upon its location within the urban area. Obviously land costs in the downtown area are considerably higher than

those in an outlying suburban location. The advantages of selecting a stadium site in either type of location are discussed in Chapter IV.

#### Off-Site Improvements

Off-site improvements include the construction of vehicular and pedestrian access bridges, the laying of utility lines, the widening and improving of streets, and the rerouting of streets and utilities. The total cost for these improvements depends to some degree upon a stadium's urban location. For example, the off-site improvements cost for Atlanta's downtown stadium was about \$1.5 million, or 8 per cent of the stadium's total cost.<sup>36</sup> The off-site improvements cost for the Houston Astrodome, which is in an outlying location, was about \$12 million, or 26 per cent of the stadium's total cost.<sup>37</sup>

#### Stadium Construction

The cost of constructing a stadium includes grading and excavation, structural work, the installation of utilities, the preparation of interior spaces, and architecture and contractor fees. Construction fees for Atlanta Stadium, for example, were about \$13.8 million, or 75 per cent of the stadium's total cost.<sup>38</sup>

#### Stadium Operation

A stadium's operating costs include: (1) personnel salaries and wages, and (2) general operation and maintenance expenses. The total cost of a stadium's operation depends upon the range of stadium events and lease provisions of the stadium's tenants. Estimates of a stadium's operating costs normally assume that a stadium tenant will finance game preparation, grounds maintenance, and clean-up expenses.

Atlanta Stadium's annual operating expense is about \$400, 000.<sup>39</sup> In San Diego and Oakland it is estimated that the annual operating costs will be about \$350, 000 and \$450, 000 respectively.<sup>40, 41</sup>

### Debt Service

Debt service payments are usually the largest annual cost for public stadiums. Since most stadiums are not self-supporting, a stadium sponsor must guarantee payment of this annual expense. The stadium's financing plan establishes the schedule of payments. The annual debt service requirement for Oakland's new stadium is about \$1.3 million over a 35-year period, and the annual payment at Atlanta's new stadium is about \$1 million over a 30-year period.<sup>42, 43</sup>

### Sources of Stadium Revenue

Three principal sources of income for major league stadiums are: (1) tenant rentals, (2) concession sales, and (3) parking fees. The amount of revenues from these sources is determined by the stadium's lease provisions, attendance levels, and average ticket prices.

A stadium also has secondary income sources including: stadium charges for special events, stadium club rentals, scoreboard advertising, and office rentals. The income produced by these sources is usually not significant. However, they supplement a stadium's primary income sources.

### Tenant Rentals

A major league multi-purpose stadium has a major league baseball and football team as its principal tenants. An analysis of the income-producing characteristics of each of these is presented below.

Baseball. Lease arrangements with major league baseball teams usually provide a stadium with about five to seven per cent of ticket sales revenue.<sup>44</sup> Since a baseball team's costs are relatively stable, some franchises accept graduated stadium lease payments above a minimum attendance figure.

Rule-of-thumb estimates for major league franchises indicate an average stadium income of about 7 to 7.5 per cent of net ticket sales revenue (gross receipts minus excise taxes).<sup>45</sup> The average net ticket sales revenue per customer for baseball games ranges from \$2.00 to \$2.25.<sup>46</sup> On this basis, a stadium's per capita baseball attendance income ranges from a low of \$0.14 to a high of \$0.17 (\$2.00 at 7 per cent to \$2.25 at 7.5 per cent).

Football. Lease arrangements with major league football teams usually provide a stadium with about 10 per cent of ticket sales revenue.<sup>47</sup> These lease terms are usually based upon a flat rate which does not fluctuate with changing attendance levels. Based upon the 1964 average ticket prices and a 10 per cent stadium lease arrangement, a stadium's per capita income for football attendance ranges from \$0.30 to \$0.47.<sup>48</sup>

#### Concession Sales

Most stadiums derive a large proportion of their total income from concession sales. Concession lease arrangements at major league stadiums vary widely. Lease provisions at Baltimore's Memorial Stadium specify the stadium will receive only 10 per cent of gross concession receipts. In contrast, Dodger Stadium's lease provisions specify the stadium will receive about 30 to 35 per cent of concession revenues.<sup>49</sup>

Per capita expenditure estimates for stadium concessions range from a low of \$0.50 to more than \$1.00.<sup>50</sup> An average expenditure of \$0.75 at a stadium with a 25 per cent lease provision will provide a stadium with about \$0.19 in per capita attendance revenues (\$0.75 x 25 per cent).

#### Parking Fees

A stadium's total parking revenues are determined by the number of parking spaces, their frequency of use, parking lease provisions, and average parking charges. A typical lease arrangement for a private firm operating parking facilities specifies that a stadium will receive about 80 per cent of gross parking receipts.<sup>51</sup> Thus, a privately operated stadium parking lot charging \$1.00 for automobile parking and \$3.00 for bus parking produces a stadium income of \$0.80 per automobile and \$2.40 per bus.

#### Secondary Income Sources

As previously noted, revenues produced by a stadium's secondary income sources are not substantial. The 1966-67 Fiscal Year Report for Atlanta Stadium indicated, for example, that of the stadium's total income of \$990,000 only \$23,000 was produced by the stadium's secondary income sources of special events and stadium club rentals.

Special Events. Large crowds may attend such special stadium events as religious convocations and political rallies. However, these occasions do not generally produce large amounts of stadium revenues. A review of average stadium rental charges for non-commercial stadium uses, such as the above, indicates an average stadium rental fee of about \$1,500.<sup>52</sup>

Table 2. Stadium Revenue Analysis (hypothetical estimate)

Revenue Source	Amount
1. Major League Baseball (1.3 million spectators @ \$0.15 per capita)	\$195,000
2. Major League Football (400,000 spectators @ \$0.34 per capita)	136,000
3. Special Events (8 occasions @ \$1,500 per event - 200,000 atten.)	12,000
4. Concession Sales (1.9 million spectators @ \$0.19 per capita)	361,000
5. Parking Fees (175,000 automobiles @ \$0.80 per vehicle and 5,000 buses @ \$2.40 per vehicle)	152,400
6. Stadium Club Rentals	20,000
7. Advertising Rights	20,000
8. Office Rentals	12,000
Total annual stadium income -----	\$908,000
Stadium's annual operating expenses-----	400,000
Net revenues to be applied toward stadium's annual \$1 million debt service requirement-----	\$508,000

Personal appearances by professional entertainers sometimes generate large amounts of stadium revenues. The average stadium rental fee for commercial uses is about 10 per cent of paid admissions, or \$1,500, whichever is greater.<sup>53</sup> Obviously, when large crowds attend such commercial stadium events as musical concerts or boxing matches, stadium revenues are significant. Since most commercial uses are held infrequently and not on a regularly scheduled basis, they generally do not serve as a major source of stadium revenues.

Stadium Club Rentals. One of the recently developed income sources for some of the newer major league stadiums is stadium club rentals. A stadium club can provide a stadium with about \$20,000 in annual rental charges.<sup>54</sup>

Advertising Rights. The sale of advertising rights for signs and scoreboard clock advertising also provides income for a stadium. A conservative estimate of the amount of income from this source is about \$20,000 annually.<sup>55</sup>

Office Rentals. The rental of office facilities to stadium tenants is another revenue source. The specific amount of this rental depends upon a stadium's lease arrangements and the amount of available office space. An annual stadium office rental of about \$12,000 is not unusual.<sup>56</sup>

#### Sources of Stadium Financing

Since stadiums require large capital expenditures, a stadium sponsor must borrow large amounts of money to finance their construction. Stadium sponsors must also devise suitable financing plans to repay these funds. If a combination of governments sponsors a stadium, it must adopt a mutually agreeable repayment plan. Because state laws, stadium costs, and stadium sponsoring groups

differ, each stadium financing plan is unique.

### Bonds

Stadiums are usually financed by: (1) general obligation bonds, or (2) revenue bonds. Each of these bonds has advantageous features and situations develop where either type of bond financing may be used.

General Obligation Bonds. The interest rate on general obligation bonds is generally less than that on revenue bonds. This difference exists because general obligation bonds are backed by the "full faith and credit" of bond-issuing governments. Governments agree to levy whatever tax is necessary to retire general obligation bonds.

The fact that the interest on general obligation bonds is less than that for revenue bonds is important. As noted in Chapter II, stadiums are expensive and require large capital expenditures. A difference in an interest rate of 1/4 of a per cent on a \$25 million, 35-year bond issue, for example, increases a stadium's total cost about \$1.5 million.<sup>57</sup>

Two principal disadvantages are associated with using general obligation bonds to finance stadiums. The first disadvantage is that general obligation bonds generally require a referendum. This requirement significantly delays starting a stadium's construction. The second disadvantage is that moneys borrowed through general obligation bonds are subject to statutory or constitutional debt limitations.

Revenue Bonds. Revenue bonds have higher interest rates than general obligation bonds because only revenues from the project are pledged to retire

them. As a result repayment depends upon the financial success of a project. Stadium revenue bonds are generally backed by a stadium sponsor through negotiated lease agreements with a local stadium authority.

Although revenue bonds have higher interest rates than general obligation bonds, they offer several benefits. Perhaps the two main advantages of revenue bonds are: (1) their issuance does not require bond election approval, and (2) moneys borrowed through revenue bonds are not limited by a government's legal debt limit. This latter provision is especially important to stadium sponsors whose indebtedness is very near its statutory or constitutional debt limitations.

Revenue bonds were used to finance Atlanta Stadium. It was decided not to issue general obligation bonds in order to avoid having a stadium bond election which would delay stadium construction.

In many cases it is not possible to market revenue bonds. Houston issued general obligation bonds for the Astrodome's construction because they could not successfully market revenue bonds.

#### Taxes

Some officials have suggested the adoption of such "special stadium taxes" as hotel and motel occupancy charges, cigarette taxes, and various types of entertainment taxes to help finance stadiums. The adoption of these taxes, or any other type of "special stadium tax" must, of course, conform to state tax laws. To the author's knowledge, "special stadium taxes" are rarely used and do not add significant amounts of revenue for a stadium.

### Stadium Revenues

Most stadiums derive sufficient revenues to pay their annual operating expense and finance part of their annual debt service cost. The amount a stadium can apply toward its annual debt service cost changes yearly.

### Community Benefits Analysis

The benefits derived from a major league stadium are considerable. Principal among these benefits is the economic stimulus a major league stadium tenant can add to a local economy. The payrolls of professional teams and of a stadium staff are added to a community's income sources. Another major economic benefit is that "new money" is brought into a community by out-of-town fans.

Because communities differ, each experiences a different economic impact from a major league stadium. Estimates of the annual economic impact of major league teams on local economies range from a low of \$5 million to a high of \$300 million.<sup>58</sup>

Examples of the economic impact of major league teams on local economies are as follows:

- (a) during their first season (1966) in Atlanta, it was estimated that the Braves generated a \$30 million impact on the city's economy.<sup>59</sup>
- (b) during the first season (1966) of operation, it was estimated that the Atlanta Falcons generated a \$16 million economic impact on Atlanta.<sup>60</sup>
- (c) the annual economic impact of the Cleveland Indians on the local economy in 1963 was estimated to be about \$9 to \$10 million.

- (d) in 1964, the two-million annual visitors to the Astrodome generated an estimated \$80 million impact on Houston's economy.
- (e) the estimated annual economic impact of the Los Angeles Dodgers on the local economy ranges from a low of \$14 million to a high of \$100 million.
- (f) the San Francisco Giants have an estimated \$75 million annual economic impact on the San Francisco area.<sup>61</sup>

### Direct Benefits

The expenditures on stadium-related events benefit many elements in the local economy. The following section analyzes the expenditures of local and out-of-town fans. It also discusses the multiplier effect of these expenditures on the local economy.

Local Fan Expenditures. Most local fan expenditures are for game tickets, concessions, transportation, food and entertainment. A 1966 economic impact study of the Braves on Atlanta revealed that 53 per cent of local fan expenditures was for tickets, 31 per cent was for concessions, 9 per cent was for transportation, and 7 per cent was for food and entertainment. Although these fans comprised 59 per cent of stadium attendance, their game-related expenditures was only one-third of the total estimated game-related expenditures of \$9.3 million.<sup>62</sup>

Out-of-Town Fan Expenditures. The expenditures by out-of-town fans represent an influx of "new money" into a local economy. These expenditures stimulate an economy in much the same way as do expenditures of incomes

derived from manufacturing employment, tourism, military expenditures, and other "outside" income sources.

Kansas City is an example of a city which attracts many out-of-town fans. In 1957, over 37 per cent of the stadium's total attendance was comprised of out-of-town fans. More than 20 per cent of these fans stayed in the city at least one night. More important was the fact that 78 per cent of those fans interviewed responded "no" when asked, "If the Kansas City Athletics were not in Kansas City, would you come to town as often?"<sup>63</sup>

The 1966 economic impact study of the Braves on Atlanta revealed that although out-of-town fans comprised only 41 per cent of stadium attendance, they spent over two-thirds (\$6.3 million) of the estimated \$9.3 million game-related expenditures. Of the estimated \$6.3 million spent by out-of-town fans, only 19 per cent was for tickets, while 36 per cent was for food and entertainment, 24 per cent was for lodging, 11 per cent was for transportation, and 10 per cent was for concessions.<sup>64</sup>

Multiplier Effect. Economic base theory assumes that cities must export goods and services in order to prosper economically. Exported items can be shipped to other economic regions or sold as services to a city's visitors or tourists. Automobile and aircraft manufacturers, textile plants, and hotels and motels which accommodate tourists, are types of industries which export goods or services, and thus obtain part of their income from "outside" sources.

Depending upon a local economy's characteristics, about 50 to 90 per cent of this "outside" money will be respent in a local economy.<sup>65</sup> In a process of

continuing, but diminishing economic returns, about 50 to 90 per cent of each successive expenditure remains in a local economy. The final economic impact of these "outside" revenues ranges from a low of 2 to as much as 10 times the amount of the initial expenditures.<sup>66</sup>

In Atlanta, Georgia, the locally computed multiplier effect was set at 3.3 for purposes of the 1966 economic impact study of the Braves on Atlanta. This explains why the estimated first-round game-related expenditures of \$9.3 million should eventually result in a total economic stimulus of \$30 million.

#### Indirect Benefits

A major league stadium and its tenants provide many indirect benefits for a city. The following section discusses the types of indirect benefits these facilities provide.

Publicity. The national and regional publicity which major league teams receive is a significant intangible benefit for a city. Radio and television broadcasts, and newspaper and magazine articles "advertise" a city through coverage of its major league team.

In 1970, almost 1,750 newspapers were published in the United States.<sup>67</sup> These newspapers mentioned the home cities of baseball and football teams on numerous occasions. In addition, regional and national radio and television broadcasts of major league games were followed by many fans throughout the nation.

The 1966 economic impact study of the Braves on Atlanta estimated that "Atlanta" was mentioned at least 280,000 times in daily newspapers during the

1966 baseball season. The study also noted that four Brave games were televised nationally, 20 games were televised regionally, and 39 regional radio stations carried regular broadcasts of the Braves.

Community. A stadium can broaden the spectrum of outdoor recreational activities available to a community's citizens. Attending baseball or football games, or other stadium events can be an enjoyable experience which enhances the quality of urban life.

A major league stadium will frequently serve as a community landmark. It may also be used as a focal point to help "advertise" a city on a regional or national basis.

Economic. A major league stadium provides several indirect economic benefits for a city. Related developments, such as hotels and motels, restaurants, service stations, and parking facilities locate in a city because of the presence of a stadium. These developments raise a community's tax base because of increased property valuations and because more business licenses are sold.

It has been estimated that \$100 million worth of related developments occurred in the Twin Cities area as a result of the Twins' move to Minnesota. This estimate indicated that more than 1,600 new jobs were created as a result of the Twins' economic impact on the Twin Cities area.<sup>68</sup>

The publicity a "major league" city receives can promote that city's image as a retail, convention, or tourist center. This publicity may help attract out-of-town visitors to come to a city to shop, attend conventions, or seek

entertainment. The revenues expended by these visitors can be indirectly attributed to a stadium's presence.

## CHAPTER IV

### SITE SELECTION

The purpose of this Chapter is to present criteria involved in the selection of a stadium site. Stadium site selection evaluates many factors, including a stadium's land area and accessibility requirements, the availability of needed public services, and the extent a proposed stadium location can enhance a community's development. Because of these reasons, it is frequently difficult to select a stadium location.

Since a selected stadium site has a strong community impact, the governing body should seek professional advice to prepare a stadium site selection study. A qualified professional, such as a land planning consultant, can examine all potential stadium sites and identify the good and bad features of each. Consultation with a city or metropolitan planning agency can provide information about the availability of qualified professionals. Also, the planning commission staff may have sufficient capability to prepare the study, thus eliminating the need for a consultant.

The following sections discuss factors pertinent to the selection of a stadium site.

#### Land Requirements

The site for a stadium must be sufficiently large to accommodate the stadium and its related parking facilities. In addition, topographic and soil characteristics

of a site must be capable of supporting a stadium. The total land area required is determined by the stadium's design, capacity, and parking spaces provided.

Each stadium has unique needs for land. For descriptive purposes, the following items present the land requirements for a multi-purpose, 50,000 capacity stadium. The general land needs of this facility apply to any major league stadium.

#### Size

A multi-purpose, 50,000 capacity stadium structure requires about 10 acres.<sup>69</sup> Major league "single-purpose" baseball and football stadium structures have similar land area requirements.

Stadium architects prefer to design stadiums for square-shaped sites that have at least 1,000 foot side dimensions.<sup>70</sup> The closer a site is to being square-shaped, the easier it is for stadium architects to utilize a site's land area.

A stadium parking lot should be sufficiently large to allow adequate vehicular movement. An average parking space allowance of about 350 square feet will provide adequate area for automobile and bus parking, driveways, and loading zones.<sup>71</sup> Based upon this 350 square foot standard, a stadium parking lot can accommodate about 125 automobiles per acre.

As noted in Chapter II, a major league stadium should have about one automobile parking space for every four seats. A 50,000 capacity stadium will therefore need about 12,500 parking spaces. Since a parking lot can accommodate about 125 automobiles per acre, a 50,000 capacity stadium will require about 100 acres for parking.

### Topography and Soils

A stadium site must have a low water table. This feature is necessary since a stadium's playing field is often located below the ground level of the site.

Although topographic problems of almost any site can be solved if a stadium sponsor is willing to pay the cost required, a site's topography influences a stadium's construction cost. If a site has a natural ridge, or is shaped like a bowl, a stadium's cost may be considerably less than if a stadium were built on a level site. This is true because a ridge can support part of a stadium's structure. A bowl-shaped site offers an additional saving since extensive excavations are not needed to prepare a stadium's playing field area. Except for sites with these unique topographic features, flat surfaces are less costly to develop.

It is desirable to have rock located about 15 to 20 feet below a site's surface in order to offer a strong foundation. However, rock outcroppings should be avoided.

### Needed Public Services

A stadium needs a wide variety of public services. Adequate mass transportation facilities, fire and police protection, and utilities are needed to help support a stadium's operation.

Mass transportation facilities are needed to carry spectators to and from stadium events. Fire and police protection are needed for security. Police may also be needed to direct stadium traffic and to help maintain order during stadium events. Water, sewerage, electricity, gas, and telephone service are needed.

### Site Accessibility

A stadium site should be accessible to a balanced transportation system. Mass transportation facilities, major arterial streets, and expressway interchanges should be conveniently located. These transportation systems should provide easy access to all sections of a city.

### Street Requirements

A desirable site should have direct access to three or four major arterial streets and should be near at least two expressway interchanges.<sup>72</sup> This type of location enables arterial streets to handle a large proportion of a stadium's traffic thus diverting much of it from the expressway system. Potential hazards caused by stadium traffic "tie-ups" in the vicinity of expressway interchanges can be reduced.

### Traffic Study

A professional traffic engineer should estimate the number of vehicles that can leave a stadium site during a stated period. The results of this study indicate the adequacy of existing street networks to accommodate stadium traffic. If street inadequacies are revealed, the traffic study should recommend needed improvements.

A site's accessibility can be improved by constructing new streets, and widening and improving existing streets. However, the cost of providing these improvements may be prohibitive.

Traffic controls are relatively inexpensive devices that can be used to improve a site's accessibility. The use of parking and turning movement

restrictions, one-way streets, and "buses only" lanes expedite stadium traffic flows.

### General Locational Factors

A stadium should generally have a central location that is accessible to population areas and is near hotels and motels and restaurant facilities. Site selection officials should be cognizant of future highway and mass transit routes and should select a site that will have access to these facilities. The directions of a city's population growth should also be evaluated to determine if a proposed stadium location will be accessible to future population areas.

A stadium should be located in an area which can serve as a major focal point and community landmark. A well-designed, attractive stadium visible from major highway approaches provides out-of-town visitors with a pleasant first impression of a city.

Site selection officials should also consider locating a stadium in an area that needs redevelopment or revitalization. A strategically located stadium can help eliminate slum areas, stabilize property values, and encourage new land developments.

Although it won't always be practical, site selection officials should consider acquiring needed stadium lands through a federally aided urban renewal project. Besides helping to eliminate blighted areas, the advantages of utilizing urban renewal include: 1) considerable federal financial assistance is available for land acquisition, site preparation, and relocation costs, if any; 2) if indigent families must be relocated, they are placed in safe, adequate housing, and 3) lands

adjacent to the urban renewal project will probably increase in value and become more desirable for development.

A community should also evaluate the advantages of locating a stadium near a community auditorium, sports arena, or other public facility. Oakland's new stadium, for example, adjoins an indoor sports arena, and the new stadium in Memphis is on part of the city's fairground property.

A stadium should not be located in an area that would be adversely affected by the light, noise, and traffic generated by stadium events. Residential streets, for example, should not be used to accommodate stadium traffic or provide stadium parking areas. Site selection officials should also avoid locating a stadium within utility easements, flood plains, or airport glide paths.

#### Downtown vs. Suburban Location

Stadiums may be located within a city's downtown area or in an outlying suburb. Each of these areas offers unique locational features.

#### Downtown

Many of the newer major league stadiums, such as the Atlanta Stadium in Atlanta, Busch Memorial Stadium in St. Louis, and new stadiums in Cincinnati and Pittsburgh, are located in downtown areas. Several advantages and disadvantages are associated with a downtown stadium location.

Advantages. A downtown stadium location has most, if not all, of the following advantages:

1. It is near a balanced transportation system and is accessible to many downtown traffic arteries.

2. Most of the city's residential areas have relatively easy access to a downtown stadium location.

3. Since most stadium events occur at night or on weekends, the stadium's parking facilities supplement a downtown area's weekday supply. Downtown parking facilities are also used for stadium events. This arrangement increases a stadium's parking revenues and may make stadium parking structures feasible.

4. A stadium is convenient to hotels and motels, restaurants, and a wide variety of retail establishments. Stadium spectators may patronize these facilities before and after stadium events.

5. A stadium has access to public services such as utilities, fire and police, and mass transportation facilities.

6. The erection of a stadium can help rehabilitate or revitalize part of a city's downtown area.

7. Overnight visitors are more inclined to attend stadium events when a stadium is convenient to the downtown area.

8. A stadium serves as a "magnet" to help attract people to the downtown area.

9. A well-designed, attractive stadium enhances the image of a city's downtown area.

Disadvantages. There are certain problems associated with locating a stadium in a city's downtown area. The following items present some of the principal disadvantages of a downtown stadium location:

1. Land costs are higher downtown than in an outlying suburban location.

2. Because of existing downtown developments and a diffused land ownership pattern, it is difficult to assemble the amount of land needed for a stadium.

3. Extensive demolition expenditures are necessary in order to clear existing downtown structures.

4. If a stadium's location and related parking facilities are not well-planned, downtown traffic congestion caused by stadium events could become a major problem.

5. Relocation of downtown residents may create social problems.

6. Major thoroughfare improvements may be needed to accommodate a stadium's traffic demands.

### Suburban

Although most of the newer major league stadiums are located in downtown areas, some stadiums, such as Anaheim Stadium in Anaheim and Shea Stadium in New York, are located in outlying suburban areas. Suburban stadium locations present certain advantages and disadvantages.

Advantages. A suburban stadium location has most, if not all, of the following advantages:

1. Land costs are lower than in a downtown location.
2. A wide variety of potential locations is available.
3. It is easier to assemble the amount of land needed for a stadium.
4. Little clearance of existing structures is involved.
5. Traffic conflicts between stadium traffic and that generated by other major events are less severe.

Disadvantages: The following items present some of the principal disadvantages of a suburban stadium location:

1. The street network is less extensive and the transportation system is less well balanced than in a downtown area.
2. Travel to and from stadium events is often limited to private automobiles and special buses.
3. Some sections of the city may not have easy access to a suburban stadium site.
4. Multi-use of a stadium's parking is seldom feasible.
5. Major thoroughfare improvements are usually necessary.
6. Major capital expenditures may be needed to extend utility lines to a suburban site.

Besides considering the above factors, stadium site selection officials should contact local agencies, such as city planning, public works and state highway departments, and real estate boards. Consultation with these groups reveals information about the directions and rate of city growth, highway and urban renewal plans, availability of utilities, and potential stadium sites. Careful study of all proposed stadium sites is needed, since a selected stadium location significantly affects a city's development.

## CHAPTER V

### CITY PLANNING INVOLVEMENT

The purpose of this Chapter is to present the City Planner's role in developing a public stadium program. To be effective, the City Planner must become involved early in any stadium effort. This involvement includes providing advice and coordination for stadium officials and affected agencies, helping to gain public stadium support, evaluating potential stadium sites, and revising affected city plans. These duties are discussed below.

#### Advice and Coordination

The City Planner must advise and coordinate efforts throughout a stadium program's development. The Planner's unique role in the community enables him to render valuable assistance to stadium groups, agencies, and individuals. For example, because of his position, the Planner can help coordinate plans and programs of such affected public agencies as the State Highway Department, City Public Works, Public Transportation, and Urban Renewal.

The City Planner also knows or can readily obtain information about various local, state and federal programs that affect public stadiums. For example, stadium officials may want to explore possibilities of utilizing federal urban renewal assistance for acquiring a stadium site. Several cities such as St. Louis, Missouri, and Atlanta, Georgia, utilized this aid and achieved favorable results. Since

utilizing urban renewal or other special programs can significantly affect stadium plans, the City Planner must examine them carefully before recommending local application.

### Stadium Program Support

Any successful stadium program needs widespread community support including the early endorsement of governmental and community leaders. This is true because if most people oppose a stadium or appear only mildly interested, the community's chances of building a stadium and successfully obtaining a major league franchise are probably limited. The City Planner can help stimulate this support by insuring the news media and public interest groups remain apprised of stadium plans and projected benefits.

Early governmental endorsement of a stadium program is also desirable since a local government or a combination of local governments will very likely become the stadium sponsor if the stadium program is implemented. Cooperative support by all of a community's governments is best since a stadium's cost may be prohibitive for only one. The City Planner can help secure this support by insuring that all local governments are consulted on important stadium issues before decisions are reached.

As indicated in Chapter III, one of the stadium program's principal assets is its favorable economic impact. The City Planner should emphasize this feature with community leaders and civic organizations such as Rotary Clubs and Chambers of Commerce. Since civic organizations' memberships are generally comprised of business and civic leaders who appreciate a major facility's economic stimulus,

they can be among a stadium program's foremost supporters.

The City Planner's help in gaining community support has related benefits. For example, strong community leadership endorsement could favorably affect stadium market analysis findings and major league franchise interests. By helping to gain stadium support, the City Planner enhances his community role and acquires important recognition as being a principal figure in the stadium program. This recognition enhances his future opportunities for influencing stadium plans.

#### Stadium Committee Establishment

Local governments usually establish stadium committees to determine if a stadium program's development is desirable. If findings are favorable, the stadium committee establishes a stadium development plan including sponsorship arrangements, construction schedules, and strategies for obtaining major league franchises.

The stadium committee may be comprised primarily of business and civic leaders who are interested in a stadium. Their work is obviously vital to insure the stadium program's success. Since the committee needs qualified professional advice and assistance, the City Planner must develop committee rapport and become its principal advisor. To enhance his effectiveness, the Planner must gain this committee's confidence by demonstrating methods of assistance.

By advising the stadium committee, the City Planner retains his influential stadium program role. This action also helps the Planner serve other stadium needs such as coordinating public agency actions and informing local governments of new stadium developments.

### Consultants

Because a stadium program's development involves many complexities, consultant assistance may be needed. For example, local city planners may have insufficient time or professional expertise to conduct detailed stadium studies. The City Planner's training helps him establish and advise stadium officials if consultants are required or if local planning capability exists.

If stadium consultants are needed, the City Planner's consultant advisory role continues. The Planner must contact qualified consultants for stadium committee interviews, advise the committee of consultant qualifications, and later recommend consultant selection priorities. The Planner's professional knowledge of consulting firms, including qualifications of key agency personnel, enhances this advisory ability.

Besides advising on consultant qualifications, the City Planner must conduct periodic reviews of selected consultants' work to insure adequate progress and professional competency is maintained. By providing these reviews, the City Planner helps insure the community obtains optimum benefits from consultants.

### Site Selection

One of City Planning's most important stadium roles is to inventory, evaluate and recommend potential stadium sites. If possible, the City Planner and his staff should gain sole responsibility for this effort. Such responsibility is needed to avoid conflicting site recommendations, especially from unqualified sources. City Planning site selection responsibility is also desired since city planners have

professional training for site evaluations and can intelligently forecast a potential site's effect upon city plans and urban growth.

To conduct a stadium site selection study adequately, city planners must collect and evaluate information about all possible stadium locations. Public submission of all possible sites for consideration is encouraged.

Besides evaluating a site's physical features and the availability of urban services, city planners must forecast a potential site's effect upon adjacent lands and urban growth. To conduct this evaluation properly, city planners may develop a rating scale based upon selected criteria. For example, five points may be allowed for a downtown location versus one for a suburban site, or three points may be allowed for the availability of public utilities versus zero if none exist.

Using these data, the planners compare sites to establish priorities. Afterwards, they prepare a site evaluation report with related recommendations for the stadium committee and other public officials. If the City Planner has developed a rapport with local officials, careful consideration of the site recommendations seems assured. This site selection involvement continues the City Planner's effective stadium role and enhances his influence over future stadium plans.

#### Stadium Sponsorship Plan

As indicated in Chapter II, stadium sponsorship plans vary considerably and local officials must select a sponsorship plan best suited for local needs. It seems realistic that the stadium committee, of which the City Planner is principal advisor, will have considerable influence in developing a sponsorship plan. Because the adoption of a desirable plan is vitally needed, the City Planner should first

review stadium sponsorship plans from other cities. This review will improve his advisory ability.

Because the City Planner knows local conditions, reviews other sponsorship plans, and advises stadium officials, he can provide influential recommendations on structuring a sponsorship plan. However, since any plan may be difficult to resolve, the City Planner and other officials should consider visiting major league cities to discuss sponsorship plans.

The City Planner's ability to affect decisions reached about a sponsorship plan helps retain his effective stadium program role. This ability enhances his chances to affect future actions in the stadium program.

#### Plan Amendments

Any new stadium affects urban growth, city plans, and priorities. This is especially true if the stadium or its location were not previously anticipated. Because of this impact, the City Planner must amend affected city plans and recommend revised public priorities. These duties are presented below.

#### City Plans

City plans affected by a new stadium may include Land Use and Transportation, Community Facilities and Public Improvements, Urban Renewal and Capital Budget. Although original preparation of these plans was probably expensive, they must be amended to reflect changed conditions. The City Planner must anticipate these needs and budget ample personnel and financial resources for plan modifications.

Physical. Since a selected stadium location affects urban growth, the City Planner must insure the community's Land Use Plan reflects it. Changing the Land Use Plan affects related plans such as Transportation, Water and Sewer, Community Facilities and Public Improvements. For example, besides amending the Land Use Plan, the Transportation Plan needs modification to reflect land use changes. Also, since a stadium attracts large traffic volumes, stadium-serving highways may require modifications and planned thoroughfare capabilities may need enlargement. The City Planner must show these changes in Transportation Plan revisions and also insure that future rapid transit lines have stadium terminals.

If the community has active urban renewal plans, it seems realistic that a stadium's development may affect them. This is especially true if the stadium locates within or near an urban renewal project area. The City Planner must coordinate urban renewal plans and activities with stadium plans to prevent waste and enhance community benefits.

Numerous requests for rezoning lands near the stadium may arise. The City Planner must evaluate physical changes caused by the stadium and recommend appropriate zoning map changes.

Financial. Since all stadiums are expensive, they affect public budgets. The City Planner's unique stadium role and knowledge of city plans help him offer valuable budget planning assistance. Having this knowledge, the City Planner should assist public administrators and finance directors in amending affected budgets. Because of the City Planner's influential stadium program role, this type of involvement seems assured.

Land values near stadiums increase creating a corresponding rise in property taxes. Stadium-related developments such as motels, hotels, and restaurants also help increase tourist expenditures and property tax revenues. These and other economic factors help increase public tax receipts. By helping to anticipate these changes, the City Planner can better advise public officials and more effectively perform his duties.

### Public Priorities

A community's public priorities are generally identified in the city plans listed above but other priorities may also exist. For example, a new stadium may stimulate desires for increased stadium-related public parking facilities, an interest in having an enclosed public sports arena, and a reduced demand for additional recreation facilities. A new stadium may also require postponement or revision of other public priorities such as developing a community civic center or neighborhood facility.

The City Planner must help identify these changed public priorities and recommend to local officials appropriate revisions. In developing these revisions, the City Planner should insure that recommended priority changes include citizen participation. The City Planner's involvement in developing these revised priorities helps retain his effective stadium role and enhances community recognition of the need for city planning.

### Summary

Situations vary and the information presented in this Chapter may not always apply. To be effective, however, the City Planner must be totally

involved in any stadium effort. This involvement seems vitally necessary to insure that public officials receive professional advice and assistance when deciding stadium issues. The Planner's actions also clearly demonstrate the need for City Planning involvement in planning for public stadiums.

If a community follows the recommendations listed above, it can reduce or eliminate many stadium costs and enhance stadium benefits. The City Planner's involvement helps achieve these savings which are the goals of all public stadium programs.

**APPENDIX**

## APPENDIX

## SEATING CAPACITIES OF MAJOR LEAGUE STADIUMS

City	Name of Stadium	Capacity	
		Baseball	Football
Anaheim	Anaheim Stadium	43,200	56,000
Arlington	Turnpike Stadium	35,000	--
Atlanta	Atlanta Stadium	51,000	58,800
Baltimore	Baltimore Memorial Stadium	52,200	60,200
Boston	Fenway Park	33,500	33,500
Buffalo	War Memorial Stadium	--	46,200
Chicago	a. Wrigley Field	36,800	45,000
	b. Comiskey Park	46,600	--
	c. Soldier Field	--	52,500
Cincinnati	a. Crosley Field	30,300	--
	b. Riverfront Stadium	51,000	56,200
Cleveland	Municipal Stadium	74,000	79,200
Dallas	a. Cotton Bowl	--	72,000
	b. Texas Stadium	--	65,000
Denver	a. Bears Stadium	--	34,000
	b. Mile High Stadium	--	50,500
Detroit	Tiger Stadium	53,000	54,200
Foxboro	Schaefer	--	62,000
Green Bay	Lambeau Field	--	56,300
Houston	Astrodome	44,500	50,000

City	Name of Stadium	Capacity	
		Baseball	Football
Kansas City	a. Municipal Stadium	34,200	49,000
	b. Harry S. Truman Sports Complex	41,000	75,000
Los Angeles	a. Memorial Coliseum	--	76,000
	b. Dodger Stadium	56,000	--
Miami	Orange Bowl	--	75,400
Milwaukee	County Stadium	43,800	47,800
Minneapolis/ St. Paul	Metropolitan Stadium	45,200	47,900
Montreal	Jarry Stadium	28,500	--
New York	a. Yankee Stadium	67,400	62,900
	b. Shea Stadium	55,300	60,000
New Orleans	Tulane Stadium	--	81,000
Oakland	Oakland-Alameda County Stadium	50,000	53,800
Philadelphia	a. Connie Mack Stadium	33,600	--
	b. Veterans Stadium	56,400	65,000
Pittsburgh	a. Forbes Field	35,200	--
	b. Three Rivers Stadium	50,200	53,300
St. Louis	Busch Memorial Stadium	49,500	50,500
San Diego	San Diego Stadium	50,000	52,000
San Francisco	a. Candlestick Park	42,500	45,000
	b. Kezar Stadium	--	57,600
Washington	Robert F. Kennedy Stadium	45,000	50,400

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