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NEW STADIUM SITE EVALUATION

FOR

MARYLAND SPECIAL ADVISORY COMMISSION ON
PROFESSIONAL SPORTS AND THE ECONOMY

JANUARY 1986

HNTB

Touche Ross & Co.

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METROPOLITAN AREA MAP

The three potential stadium sites as studied within this report are located with relationship to the Baltimore metropolitan area and highway system as illustrated on the adjacent exhibit. The studied sites are all located in the southern portion of the Baltimore area yet lie in three different political jurisdictions and are referred to as follows:

A. CAMDEN YARDS BALTIMORE CITY SITE

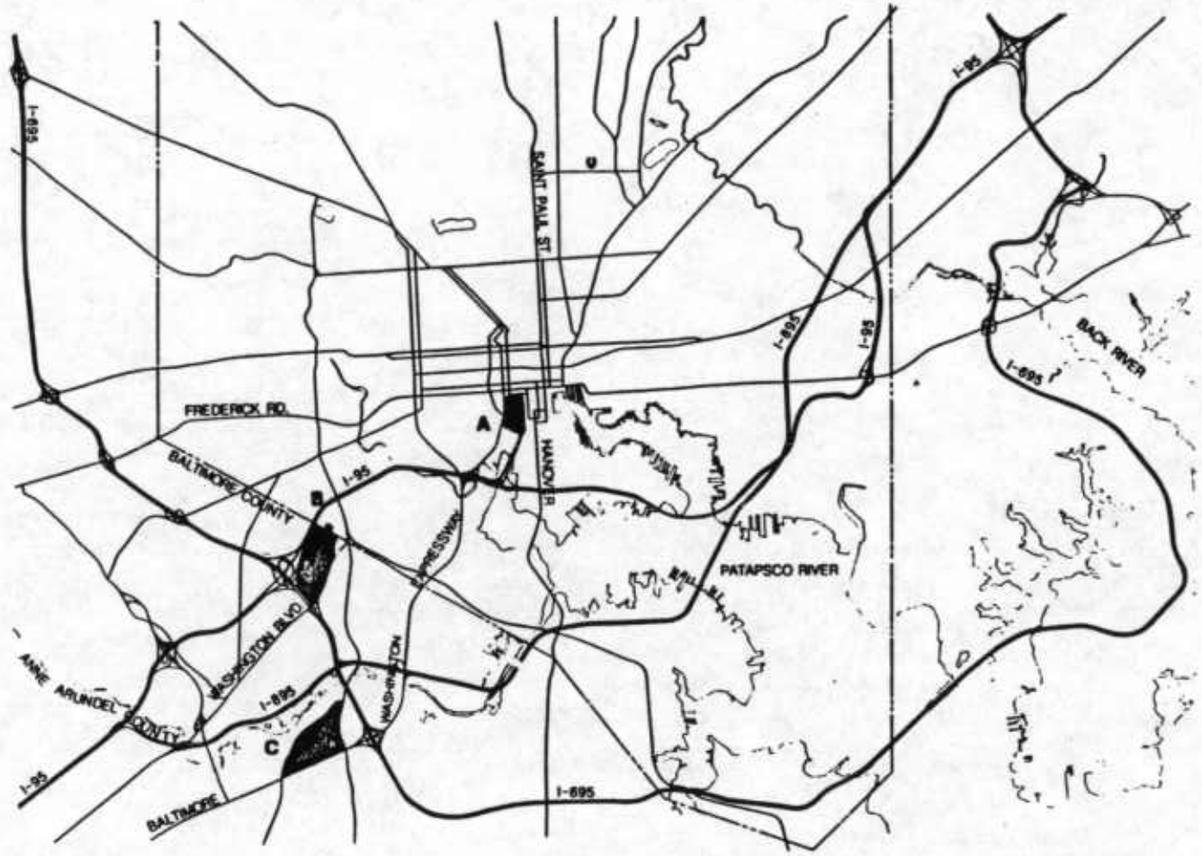
B. LANSDOWNE BALTIMORE COUNTY/CITY SITE

C. ANNE ARUNDEL COUNTY SITE

All three sites are located within the target market region identified in the Professional Sports Action Plan. All three sites satisfy the strategic considerations that contributed toward the identification of the target market region.

All three sites provide good regional accessibility, allowing approximately 80% of the current and projected 1990 Maryland population to reach the respective sites in an average travel time of about 30 minutes.

As shown in the exhibit, all three sites are either in or within close proximity to the City of Baltimore, and thus, would have the "image" of being a "Baltimore Stadium".



A CAMDEN YARDS
B LANSDOWNE
C ANNE ARUNDEL

BALTIMORE VICINITY MAP

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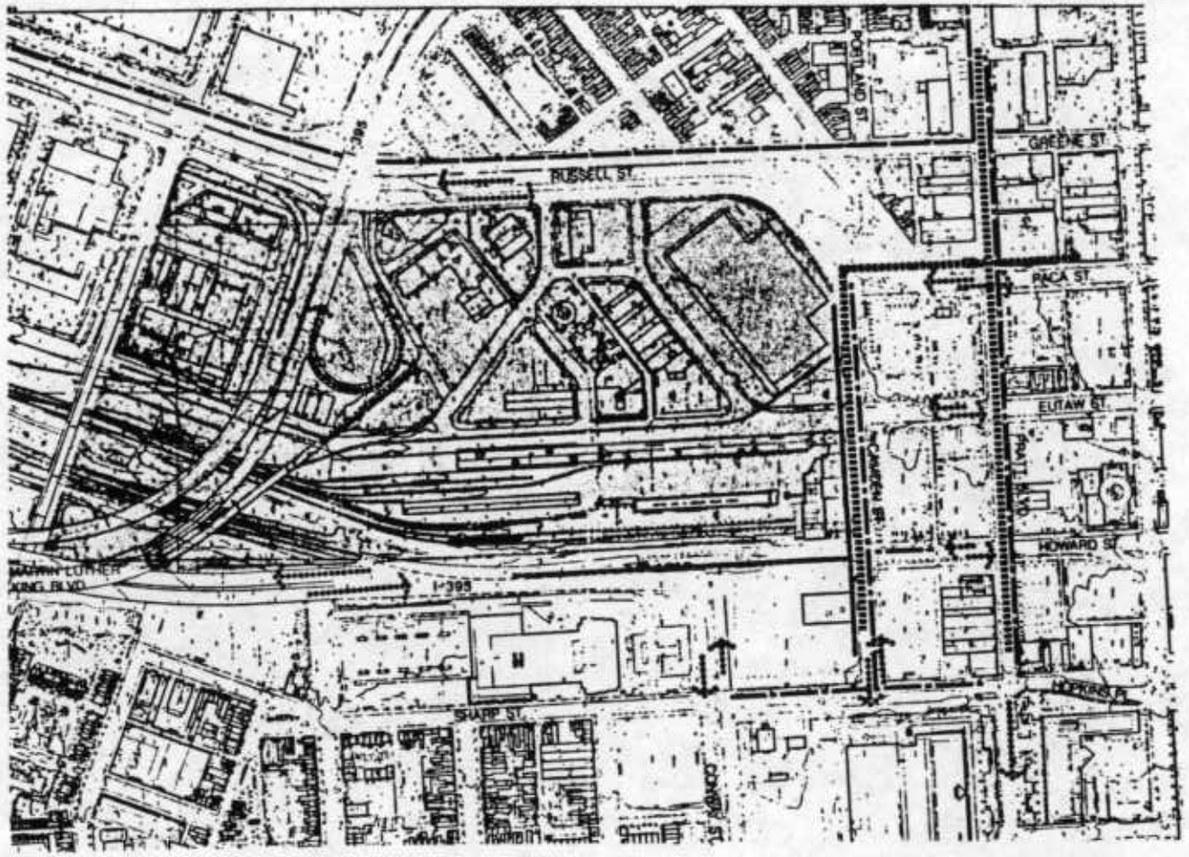
The data presented in this report is a result of investigations conducted by Touche Ross and HNTB and identifies existing conditions for each site which will influence site desirability for a proposed stadium. This information is based on the most recent data which could be supplied by the City of Baltimore, Baltimore County, and Anne Arundel County Planning and Public Works Departments, Maryland Transit Authority, and Baltimore City Traffic and Transit. Each prospective site was visited and a photo survey of existing conditions was completed. Information collected for each site includes available topographic surveys, traffic network maps, utility data, land use records, parking and mass transit data, and zoning maps. The existing conditions maps on the following pages delineates topographic conditions, capable utility services, and existing road networks for Camden Yards, Lansdowne and Anne Arundel sites. A soils engineering report is not included in the scope of this work.

DATA COLLECTION



LEGEND

- WATER LINE
- ELECTRICAL SUPPLY LINE
- STORM SEWER
- SANITARY SEWER
- TRAFFIC FLOW

CAMDEN YARDS STADIUM SITE
EXISTING SITE CONDITIONS

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1.1

CAMDEN YARDS STADIUM SITE LOCATION

The 85-acre site is bounded by Camden Street on the north; I-395 at the east; West Street on the south; and Russell Street on the east. Existing structures include light industrial, warehousing, a school, a steam plant and Historical Camden Station.

Water Distribution

Water can be supplied to the stadium by the existing distribution system through mains north of the stadium.

Sanitary Sewerage

The stadium would be serviced through existing lines to the north of the site.

Electrical

Adequate electrical capacity and conduit exists to the north and west of the site.

Storm Drainage

Adequate storm drainage lines are east of the site.

Surrounding Land Use

The residential neighborhood to the east of Camden Yards referred to as the Ridgely's area is characterized by other renovated two- and three-story row homes. New and renovated row homes also characterize the Otterbein neighborhood to the south and east. To the south across King Boulevard, industrial and light industrial property and its associated parking dominate. Existing city owned surface parking lots lay directly to the north and east of the site. The well developed downtown core area lays abruptly north and east of Pratt Street dominated by office, bank and hotel structures. The Baltimore Civic Arena lays two blocks to the north. Directly east, the inner harbor is five blocks away and the convention center is two blocks away.

LEGEND

- WATER LINE
- ELECTRICAL SUPPLY LINE
- STORM SEWER
- SANITARY SEWER
- TRAFFIC FLOW

LANSDOWNE STADIUM SITE
EXISTING SITE CONDITIONS

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1.2

LANSDOWNE STADIUM SITE LOCATION

Site Characteristics

The 240 acre site bounded by Highway I-95 on the West; I-695 Beltway on th south; Washington Avenue on the east and Joh Road to the north.

The natural site surface is rough and irregular. The site slopes generally towards the central eastern edge with 100-foot grade differential. The site is moderately wooded dominated by an auto salvage yard in the central east portion, residential in the northeast and light industrial along Washington Street.

Water Distribution

Adequate water can be supplied to the site from the existing distribution system through a 20-inch main located along Washington Boulevard.

Sanitary Sewerage

No sewer lines with the required capacity appear to exist within the vicinity. A trunk sewer line would be constructed to the nearest capable line, 5,000 feet south.

Electrical

Adequate electrical capacity exists at the substation along Washington Boulevard.

Storm Drainage

An existing 36" storm drainage line exists north on Washington. A 42" line exists under Georgetown Road. These lines would provide adequate capacity.

Surrounding Land Use

Low density single-family homes dominate areas to the east and south of the proposed site which is commonly called the Lansdowne neighborhood. Some light commercial strip development occurs along Washington Avenue, mostly along the east side. To the north, at Joh Avenue, there is an office building development comprised of several new low-rise structures. Vacant land occurs directly across Interstate 95 further west and northeast of the proposed site.

ANNE ARUNDEL COUNTY STADIUM
SITE LOCATION

Site Characteristics

The 225 acre site is bounded by Baltimore-Washington Expressway on the south; Hammonds Ferry Road on the East; and Nursery Road and the Patapsco River on the North. The natural site surface is rough and irregular with a general slope to the north and east. The grade differential is 100 feet from a high point at the southwest to a low on the north and east. The site is moderately wooded. Existing structures include approximately 50 small homes primarilly on its perimeter and an office warehouse structure at the southwest corner.

Water Distribution

Adequate water can be supplied to the stadium by the existing water distribution system through a 36" main located along Nursery Road.

Sanitary Sewerage

A trunk sewer which generally follows the Patapsco River 1,000 feet to the north of the site is available to provide adequate service to the stadium.

Electrical

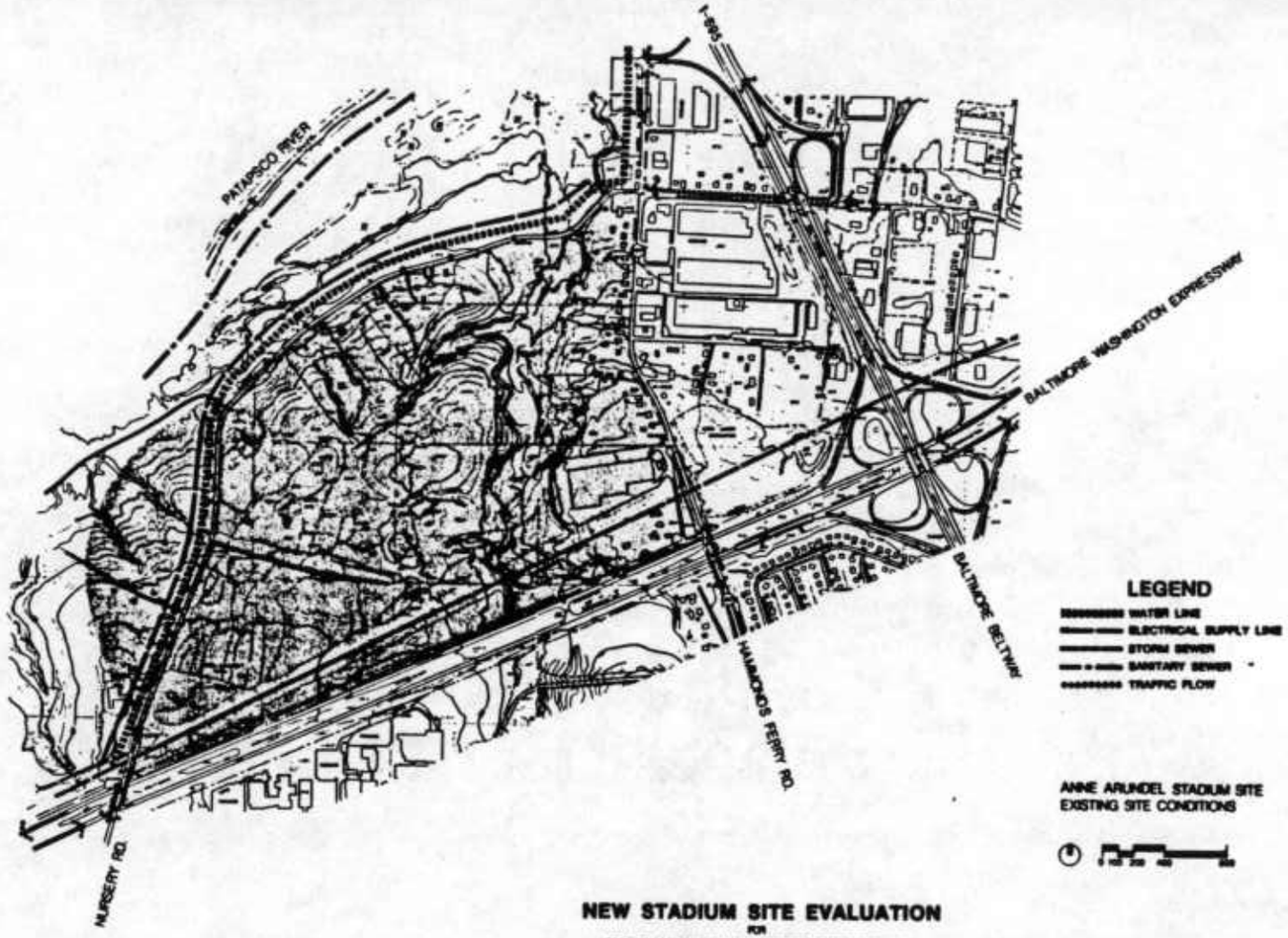
The electrical power for the site would be provided by existing service along Nursery Road.

Storm Drainage

Adequate storm drainage would occur directly to the Patapsco River 1,000 feet to the north.

Surrounding Land Use

The Patapsco River basin and open low land dominate the areas north and east. Single-family residential neighborhoods occur across Baltimore Washington Expressway to the south and southeast. Light commercial businesses and a small number of modest residental homes exist to the east along Hammonds Ferry Road.



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1.3

The purpose of this section is to outline the general requirements for site development and facility design for a Phase I (baseball) and Phase II (multi-purpose) stadium which will be competitive in all respects with other major league stadiums presently constructed or under development. It is the intent of this program to define all criteria necessary to provide the spectator, the teams, and the Maryland Sports Authority with a first-class facility that is functional, convenient, durable and flexible in order to stimulate attendance and maximize revenues generated. The basis for this program includes analysis of existing facilities around the country, experience by the design team of other successful facilities, and research into new technologies.

SITE REQUIREMENTS & STADIUM PROGRAM

SITE REQUIREMENTS

PARKING REQUIREMENTS

The number of parking spaces required at the stadium is a function of attendance expected, available modes of transportation and car occupancy. Automobile occupancy will be influenced by the parking fee charged and the availability of parking within walking distance.

The number of seats per parking space of facilities of similar purpose with major professional franchises range from a high of 8.0 to a low of 2.1. Nationally, the median number of seats per parking space is 4.3. However, typically major league facilities having a seats per parking space ratio greater than 4.0 have experienced parking inadequacies during peak use. A ratio of 3.5 seats per parking space has typically demonstrated optimum and adequate parking for all events.

Differences in transportation modes and opportunities exist in any proposed site in the Baltimore area, with the area as a whole and compared to other metropolitan areas. Percent of fans arriving by private vehicle to a major facility range from 70% to 93% nationally. In area and parking requirements, we have used at least a nominal public transit system. The system assumes transportation for 8,000 fans by bus and/or metro transit and 4,000 fans by charter bus for football and proportionately for baseball. For a nominal bus transit system and a typical charter bus service, the following parking requirements are assumed for preliminary area calculations at this time:

	Baseball - 50,000 fans	Football - 70,000 fans
Fans (at 3.5/car)	11,600 parking spaces	16,575 parking spaces
Police Emergency	15	20
Press Club Officials	84	120
Buses (at 2 spaces/bus)	420	600
Employees	420	600
TOTAL PARKING SPACES	12,540 (baseball)	17,555 (football)

AREA REQUIREMENTS

The following area requirements are based on built stadia and parking and circulation requirements as established above. These required area calculations assume no existing parking. The Camden yards location with parking within walking distance already existing would amend these figures and the total area requirements.

Parking Area Required @ 17,555 spaces @ 335 s.f.	135 acres
Stadium Structure	12 acres
Perimeter Circulation and Service	13 acres
TOTAL ACRES REQUIRED	160 acres

This figure is a minimum requirement and thus does not include area required for new access highways, extensive landscaped islands at parking areas, area for possible drainage retention pond or large areas of non-usable green space. Phase I (baseball) of the stadium would require proportionately less minimum parking area.

STADIUM UTILITY REQUIREMENTS

The following requirements are based on typical built stadia and do not include storm water requirements for retention ponds if required at that particular site.

Storm Water	36"
Sanitary Sewer	18"
Domestic Water & Fire Protection	12" min.
Electrical Service	8-10,000 KVA

STADIUM PROGRAM

The development and design of this facility will be competitive in all respects with professional stadiums recently constructed or under construction, and meet with the requirements of all applicable building codes and ordinances. The basic form of the structure shall be designed to provide seating related to the desirable locations for viewing of baseball and in the future, football. The seating will be as close to the playing field as desirable, sightlines will be optimum, and viewing unobstructed by the structure. The stadium will have a minimum total capacity of 50,000 seats for baseball and 70,000 seats for football.

In planning the baseball stadium, the focus point shall be located halfway between home plate and the pitcher's mound. This point will establish the geometry of the most highly populated section of the Stadium and place the majority of spectators around the center of action.

Ramps connecting a lower level concourse to an upper level concourse will provide adequate access without the use of escalators, however, provisions can be included for escalators. The stadium will be built into grade as much as possible to minimize vertical circulation and construction costs.

A concourse at the Lower Level shall be included for spectator convenience. This anticipates that the game-time circulation will be greater and more continuous for baseball than for football.

Cantilevered portions of the Club Level and Upper Level shall be placed high enough above the level beneath them to allow a standing spectator to have a view across the field at eye level or above. A service drive shall be provided to the Service Level which houses the team facilities.

A. SPECTATOR FACILITIES

1. Seating

50,000 self-rising armchair seats for baseball shall be provided. Minimum sightline clearance shall be 2-1/4 inches above the eye level of the spectator in the preceding row. Minimum tread width in seating areas will be 32 inches minimum; the first row of seats will be approximately 2'-6" above the field; riser height will vary from 6 inches minimum to 22-1/2 inches maximum; the maximum number of seats per row will be 24; and minimum aisle width will be 44 inches. The minimum seat width shall be 19 inches. Baseball box seating shall have 8 seat rows. A wheel chair seating area will be provided at the Field Level concourse, accessible by elevator. Handrails will be provided at all vertical aisles in the Upper Level stands.

2. Public Toilets

Toilet rooms for men and women will be at every concourse level and appropriately distributed. The ratio of spectator to fixtures will be based on 60% male and 40% female attendance. Fixtures will be provide based on the following approximations:

(1) Lavatories	1 per 300 men 1 per 200 women
(2) Waterclosets	1 per 500 men 1 per 100 women
(3) Urinals	1 per 125 men (2 LF per 125 men)

Mirrors with shelves, soap dispensers, shelves above lavatories, paper dispensers, toilet partitions, and purse holders in women's units will be provided. An attendants' closet with a service sink and storage will be provided in each public toilet room. Handicapped facilities will be provided as required.

All toilet rooms will be equipped with heat, general lighting and exhaust. Cold water service only will be provided for all public toilet rooms.

3. Concession Stands

The following will be subject to the recommendations and/or reasonable desires of the selected Concessionaire. However, the following reasonably describes the suggested concession requirements.

a. Concession stands will be located at all concourse levels and appropriately distributed and will consist of three wall enclosures and roofs. The wall construction will not be provided on the concourse side of the concession stands. Approximately six linear feet of serving counter will be provided for each 400 spectators.

b. The following items are <u>not</u> included and will be the responsibility of the Concessionaire:

(1) Completion of the concession stand including a counter and security door or screen as may be required at the concourse side.

(2) Equipment such as cookers, warmers, beverage storage, freezers, coolers, plumbing fixtures, and the hook-up of same.

(3) Exhaust systems as may be required.

(4) General lighting, space heating, and water heating equipment.

(5) Other equipment as may be necessary to provide a workable operation.

4. Vendors Commissaries

a. These facilities for food handling and storage will be located on all concourse levels and appropriately distributed. The commissaries will be designed to provide service based on one vendor per 200 spectators.

Vendors' commissaries will consist of four walls with roof. Each unit will contain water service located on one wall, floor drains, and electrical service.

b. The following items are <u>not</u> included and will be provided by the Concessionaire:

(1) Completion of the commissary including counters, screens, grills, etc.

(2) Fixed equipment such as cookers, warmers, beverage storage, freezers, coolers, plumbing fixtures, and the hook-up of same.

(3) Exhaust systems as may be required.

(4) General lighting, space heating, and water heating es may be required.

(5) Other equipment as may be required to provide e workeble operation.

5. Ramps

Pedestrian ramps will have e maximum 10 percent slope end edequate widths to provide easy accessibility to and from ell concourse levels. All ramps will be designed to accommodate vehicles as large as pickup trucks.

6. Elevators

Space only has been provided for two 48 inch wide reversible escalators originating et the Field Level which will service the First Upper Level concourse and two additional 48 inch units originating at the First Upper Level which will service the Second Upper Level concourse. Although escalators may not be included, they may be easily added at a future date.

7. Public Telephones

Space and conduit for public telephones shall be provided at appropriate locations on ell concourse levels.

8. Ticket Booths

Ticket booths shall be conveniently located for event ticket sales with adequate provisions for day-of-game sales. Counters, cash drawers, changeable letter panels, heat, lighting, and electrical outlets will be provided. Handrails for crowd control shall be provided where appropriate. Advance sales booths will be loceted end accessible from outside end from within the stadium. A press gate and exchange gate will be provided as well es four will-call windows. If feasible, the advance seles window will be adjacent to the ticket office.

9. Turnstiles - (34 baseball plus 12 edditional for football)

Portable, reversible registering turnstiles end space for ticket takers will be provided at the rate of one (1) for eech 1,500 seats. Turnstiles will be covered to provide protection from precipitation and will include railings for crowd control.

10. Loge Seating

A minimum of 3,500 loge level seats will be located et the Club Level with access to exclusive lounge areas with bar, grill, end toilet facilities.

11. Stadium Club - 15,000 Sq. Ft.

Adequate area for the construction of e Stadium Club will be provided within the stadium in addition to the concession stands, and will provide facilities for a minimum of 350 diners.

Space shell be evailable for e fully equipped cocktail lounge. Equipment not included.

12. Hall of Fame - 2,000 Sq. Ft.

Accessible from within the stadium during events and from outside the stadium during non-event times. Located within proximity to ticket office end Stadium Club areas. Space only will be ellocated with interior improvements to come at future date.

13. Security - 2,500 Sq. Ft.

One office space, restroom facilities, and a control booth located appropriately within the stadium. A minimum of two lock-up cells for Police Department also will be designed.

14. First Aid - 500 Sq. Ft.

A facility for emergency medical treatment will contain office space for e physician and nurse, cot room to eccommodate six patients, waiting room, toilet and storage rooms. Medical equipment and supplies are not included. Access to ambulance parking through non-public areas will be provided.

15. Drinking Fountains

Non-refrigereted drinking fountains will be located et all concourse levels. Refrigerated drinking founteins will be provided for the team locker rooms, press, and administration areas.

16. Sound System

A complete sound system will serve the entire stadium to include distributed loud speaker system, speakers for concourses, team rooms, event announcing, paging, music and broadcasting.

17. Elevators

The number and location of elevators will be determined. Where freight elevetors ere provided, they will be 8'-4" x 11'-9", 10,000 pounds capacity, end 75 F.P.M. speed. Passenger elevators shall be 5'-8" x 8'-8", 4,000 pounds capacity, end 340 F.P.M.

18. Escalators (if required)

Escalators will be 48 inches wide end reversible. Number and location to be determined.

19. Graphics

Provisions will be included for graphics for the entire stadium. The graphics shall provide signing as follows:

a. Identification of stadium entrances, including ticket booths, turnstiles, and special entrances.

b. Signing within the stadium to indicate concourse levels, seating sections, aisles, rows, and seat numbers.

c. Identification of toilet rooms, first aid, exits end other public facilities.

d. Identification of concession facilities is not included; however, concession stand signing shall be coordinated with the total graphics program.

20. Lighting

Adequate general illumination will be provided throughout the stadium for concourses, stairs, ramps, portals, etc.

21. Fire Protection

Fire protection equipment such as sprinklers, standpipes, etc., will be located as required by applicable building and sefety codes.

22. Permanent Novelty Stands

A space for permanent novelty stands will be located et appropriate locations through the facility. Minimum storage space of 2,000 square feet is also required. Improvements by concessionaire.

B. PRESS FACILITIES

1. Press Box

Press box facilities accommodating the news media covering baseball will be appropriately located and oriented within the stadium. Two levels shall be provided; one for the working press and one for the broadcast media. The press box will be provided with operable windows so that it may be open to the field except for the P.A. announcer, which will have a fixed glass front.

The press box facilities will be provided with appropriate HVAC systems.

Open-tray conduit for TV cables will be located for all TV cameres and broadcasting booth locations to TV van parking locations.

2. Working Press - 2,200 Sq. Ft.

Stations for approximately 120 writers will be provided. This area shall contain built-in writing counters, electrical outlets, sound system, and closed circuit television. Chairs for writers are not included.

3. TV Broadcasting - 320 Sq. Ft.

TV broadcasting booth with built-in counter, special acoustical treatment on walls and ceiling, and space for one home plate camera. Additional TV camera platforms shall be located at the base lines, home plate, and centerfield. The TV networks will be consulted regarding all aspects, including booth, platforms, conduit and electrical requirements.

4. Radio Broadcasting - 450 Sq. Ft.

Provide three 150 sq. ft. broadcasting booths with built-in counters and speciel acoustical treatment on walls and ceiling.

5. Photogrephers - 150/200 Sq. Ft.

Open on the field side, this space will accommodate press and team photographers. Two additional photographers' platforms will be provided in the upper stands at the base of the field lighting supports.

6. Owner's Box - 560 Sq. Ft.

For use by the stadium tenant, this space will be near the press box and provide seating for approximately 24 people. All specific interior finishes shall be provided by the team owner.

7. General Manager's Box - 280 Sq. Ft.

For use by stadium tenant, will provide space for 8 people.

8. VIP Box - 280 Sq. Ft.

For use by the stadium guests, will provide space for 12 people.

9. Scoreboard Operator - 200 Sq. Ft.

This space will be provided with built-in writing counters. All wiring, control panels, and other equipment required for the operation of the scoreboard equipment shall be by the scoreboard company.

10. Public Address Booth - 110 Sq. Ft. (enclosed)

This space will be for the P.A. announcer and essistants with built-in counters.

11. Public Address Control Booth - 100 Sq. Ft.

An engineer's space will contain all controls required for a public address system serving the entire stadium.

12. Workroom - 200 Sq. Ft.

Space adjacent to the working press will be provided for statisticians, document reproduction, and talecopy equipment.

13. Toilet Rooms - 360 Sq. Ft.

Men's and women's toilet rooms and a women's lounge for Press personnel will be provided in the Press Box area.

14. Darkrooms - 450 Sq. Ft.

Provide three 150 sq. ft. darkrooms located at the playing field level with rough-in electrical and plumbing. Additional equipment will be provided by others.

15. Press Club - 2,000 Sq. Ft.

For press personnel, this facility will contain a dining room seating approximately 50 persons and rough-in plumbing and electrical service for food and beverage service. Equipment and hook-up of same will be adjacent to the working press box. If space is available, one would be provided adjacent to each sports box.

16. Equipment

Adequate space for sound system, telephone, electrical, and TV equipment will be provided.

17. Studio Space - 800 Sq. Ft.

Provide space for the development of a television studio (optional).

18. Teletype Room - 160 Sq. Ft.

This space, for Western Union teletype equipment, will be provided with conduit to serve the teletype machines. All teletype equipment will be provided by others.

19. Wire Photo Room - 400 Sq. Ft.

Two wire photo rooms, one for each wire service, will be provided. Conduit to serve wire photo equipment will be provided. Wire photo or other special equipment is not included.

20. Storage - 1,350 Sq. Ft.

Storage areas for exclusive use of Press personnel will be included. Metal lockers will be provided.

21. Football Press Facilities - 2,000 Sq. Ft.

(Unfinished - Provide space only in Phase 1).

C. ADMINISTRATIVE FACILITIES - 25,500 SQ. FT.

1. Ten thousand square feet of finished Administrative Offices will be provided for the baseball team.

2. Administrative Offices will be complete with finished walls, floors and ceilings, general lighting, heating and air conditioning.

3. Space available for future development of ten thousand square feet of football Administrative offices will have enclosing unfinished perimeter walls only. Plumbing, electrical, heating, and air conditioning will not be included, although the capability to extend these services is available.

4. A suggested allocation of Administrative office space is as follows:

   a. Stadium Operation 1,000 square feet finished, 1,000 square feet available for future development.

   b. 2,000 square feet available for future development.

   c. Ticket Sales, 12,000 square feet finished, 300 square feet available for future development.

D. TEAM FACILITIES

All player facilities located at the Service Level will have direct access to the playing field through players' tunnels opening into the dugouts and an umpires' entrance back of home plate. A passenger elevator will provide direct access to the Press Box and Team Administrative offices at the Club Level and Field Level. All team facilities will be complete unless otherwise indicated.

	SQ. FT.
1. Home Baseball Locker - 7,800 Sq. Ft.	
a. Locker room including lockers.	1,900
b. Shower and toilet room.	400

	SQ. FT.
c. Training Room - Electrical and plumbing rough-in for training equipment. Training equipment provided by others.	900
d. Coaches locker.	400
e. Equipment storage (no shelving included).	600
f. Laundry - Electrical and plumbing rough-in for laundry equipment. Laundry equipment provided by others.	500
g. Meeting room	1,000
h. General storage	2,100
2. Visitors' Baseball Lockers - 4,400 Sq. Ft.	
a. Locker room including lockers.	1,200
b. Shower and toilet room.	300
c. Training Room - Electrical and plumbing rough-in for training equipment. Training equipment provided by others.	300
d. Coaches' locker.	200
e. General storage	200
3. Home Football Locker - 12,000 Sq. Ft.	
(Unfinished - provide space only)	
4. Visitors' Football Locker - 6,000 Sq. Ft.	
a. Locker room including lockers.	3,500
b. Shower and toilet room.	1,300
c. Training Room - Electrical and plumbing rough-in for training equipment.	500
d. Coaches' lockers.	300
e. Head coaches' office.	200
f. Storage room.	200

	SQ. FT.
5. Umpires' Locker - 600 Sq. Ft.	
a. Locker room including lockers	450
b. Shower and toilet room	150

6. Player Interview - 500 Sq. Ft.

This space will be equipped with electrical service and open-tray TV conduit as required for radio and TV interview of players. Conduit only will be provided for lighting required for TV camera operation.

7. X-Ray Room - 200 Sq. Ft.

Adjacent to team facilities and accessible from the playing field, this facility will make provisions for X-ray equipment for use by both teams during games.

8. Players' Relatives Waiting Room - 500 Sq. Ft.

Post game waiting room with toilet facilities for men and women. Location to be central to all sports locker rooms.

E. PLAYING FIELD FACILITIES

1. Playing Field

A sodded playing field on drainage fill with underground drains will be provided. Surface drains as required and a turf watering system will be included.

2. Game Equipment

Foul ball poles, batter's eye, and foul ball screen back of home plate will be provided. Football game equipment to be added at such time as required.

3. Player Dugouts

Covered dugouts with direct access to the Service Level will be provided for home and visiting teams.

4. Field Entrances

Access will be provided as required and appropriate to allow over the road vehicles to reach the playing surface for maintenance and event set up.

Additional entrances for players or from the lower stand will be located as required.

An opening in the backwall of the pitcher's bull pen provides access to the playing field from the Service Level.

5. Field Lighting

A complete field lighting system, providing adequate illumination for color TV coverage, is included.

6. Scoreboard

Space only has been provided for a complete, electrically-operated, remote controlled, illuminated scoreboard system. The scoreboard system includes all remote control equipment located in the Press Box, control wiring conduit from Press Box to scoreboards, the scoreboards and supporting structures. Electrical service for operation of the scoreboards will be provided to the base of the scoreboard supports. The scoreboard system and work required for its installation as generally outlined above is not included in the scope of the project.

7. Pitcher's Bull Pen

Two pitcher's bull pens adjacent to the outfield area will be provided.

8. Batting Cage - Baseball

Space for a batting cage will be provided under the grandstand area.

9. Team Photographers Platforms (4 required)

Provide platform behind home plate, first base, third base, and center field. Space for four photographers with counter and electrical power.

10. Field Toilet - 85 Sq. Ft.

Adjacent to field. One watercloset, urinal, lavatory, and refrigerated drinking fountain.

F. STADIUM SERVICE FACILITIES

The majority of these facilities will be located at the Service Level. Access to loading docks at the Service Level will be provided via a drive and tunnel opening into the area northeast of the Stadium. The drive, with 14'-0" overhead clearance, will be adequate for operation of large delivery trucks. One freight elevator will serve all levels above and a passenger elevator will serve all levels.

The following facilities will be provided:

1. Commissary - 28,500 Sq. Ft.

Space will be available for development of food handling, preparation, and storage facilities. Basic electrical and plumbing rough-in for kitchen equipment, freezers, coolers, etc., is included. Equipment for this space and equipment hook-up is in the concession equipment allowance.

2. Commissary Locker - 1,500 Sq. Ft.

This space will be equipped with metal lockers and toilet facilities for employees involved in the concession operation.

3. Concession Storage - 6,400 Sq. Ft.

Enclosed spaces for hawker pick-up or concession storage will be provided at all concourse levels. Electrical and plumbing rough-in will be provided. Equipment and equipment hook-up is included in the concession equipment allowance.

4. General Storage - 14,000 Sq. Ft.

Unfinished space will be available for general storage or future expansion of other facilities.

5. Stadium Personnel Locker and Uniform Storage - 500 Sq. Ft.

Locker and toilet room for ushers, guards, and ticket sellers.

6. Maintenance Shop - 2,000 Sq. Ft.

This facility contains space for carpentry, electrical, plumbing, mechanical equipment repair and other shops required for general maintenance of the Stadium. Electrical outlets, plumbing, and wire mesh partitions are included.

7. Maintenance Locker - 1,000 Sq. Ft.

Lockers and toilet facilities for Stadium maintenance personnel and field maintenance personnel.

8. Field Maintenance Storage - 5,000 Sq. Ft.

Three hundred square feet of finished office space is included in this storage area for equipment and materials which open onto the service drive.

9. Loading Dock

A three-position truck dock with three manual dock levelers shall be provided at the Service Level.

10. Trash Dock

A two-position dock with a compactor unit will be provided at the Service Level.

11. Trash Compactor

A mechanical, self-loading trash compactor permanently located at the loading dock will process all dry refuse. Tractor-drawn trucks required for collection of trash throughout the Stadium are not included.

12. Mechanical Equipment - 8,500 Sq. Ft.

Space is provided for mechanical and electrical equipment rooms of the Service Level. Space for mechanical, electrical, and telephone equipment is provided at all concourse levels.

13. Television Van Parking

Parking for television vans will be located adjacent to the stadium as close to the press box facilities as feasible. Adjacent electrical and telephone equipment rooms and toilet facilities will be provided along with a food service space.

G. STRUCTURAL SYSTEM

1. Framing System

The concrete framing system will bear on spread footings where rock is near grade and drilled piers where the depth of rock is over six feet. Poured-in-place concrete frames combined with poured-in-place metal pan formed joist concourse floors and precast seating sections. Precast exterior concrete panels shall be provided to enclose administrative spaces.

2. Strength of Material

Concrete strengths should be 3,000 pounds per square inch below grade. All concrete at grade and above should be 4,000 psi, 28 days strength concrete, air entrained for durability. Reinforcing steel is intended to be A-432, 60,000 psi yield strength rebar. The prestress post tensioning system is 1/4 inch, 240,000 psi minimum strength, button headed positive anchorage, wire.

3. Design Loads

All design loads used meet requirements of the Baltimore Building Code and are as follows:

a. All stadium seating, 100 pounds per square foot.

b. Concourses, service corridors and entrances, 100 pounds per square foot.

c. Snow, 300 pounds per square foot on a horizontal projected area.

d. Wind load per code table, 24 pounds per square foot at 30 feet, increasing with height.

H. SCOPE OF MECHANICAL SYSTEM

1. The following system types and estimated capacities and quantities are based on the preliminary data available. Systems shall include all components required to effect the desired function and they shall maintain greatest flexibility for the amount budgeted.

a. Heating - Subject to an engineering cost analysis to follow in a later development stage (electric vs. gas), the heating system shall be comprised of electric heating elements in various forms to satisfy the facility heat loss requirements. In general, air handling units with electric resistance heaters shall be provided where heating coincides with cooled spaces; electric convection and radiant units and electric unit heaters shall be provided where ventilation is not required, heating and ventilating units with electric resistance heater where outside air make-up is required for exhaust system. Special applications are required for certain items -- provision shall be made for freeze-protection of water facilities, including domestic water systems, drainage facilities and field heating. Preliminary estimates indicate a total heat output of 12,000 MBH for the Baseball Stadium which includes transmission losses and necessary tempered outside air make-up (kitchen hood, locker exhaust).

b. Air Conditioning (Cooling) - Shall be comprised of air handling units with remote air cooled condenser/compressors. Both single-zone and multi-zone air handling units shall be utilized plus electric resistance heaters used as reheat in special areas. This method of decentralized cooling apparatus achieves desired flexibility and precludes expense of piping chilled water with necessary heat tracing and insulation routed through exposed spaces. Preliminary estimates indicate a cooling load of 200 tons for the Baseball Stadium. This load assumes a minimum outside air ventilation requirement due to limited continuous occupancy period.

c. Ventilation (Exhaust) - In general, all systems for ventilation shall be comprised of centrifugal fans and appropriate system connections. Ventilation of the following shall be included:

(1) Vehicular tunnels and driveways within the facility.

(2) Team locker facilities (aluminum ductwork for shower exhaust).

(3) Public and private toilet facilities.

(4) Laundry facilities.

d. Plumbing Systems - Shall be comprised of the following:

(1) Complete system of sanitary sewers within the stadium and to 5'-0" outside the stadium foundation and shall include:

(a) Shower drains, food grinder waste, kitchen equipment grease interceptor waste, general floor drains and all venting requirements.

(2) Complete system of storm sewers within the stadium and to 5'-0" outside the stadium foundation and shall include:

(a) Vehicular tunnel drains, ramp drains, concourse drains, with scuppers, elevator pit drains, escalator pit drains, special field turf underground drainage system, and movable-roof drains.

(3) Complete system of city water for all fixture requirements from the city water meter.

(4) Complete rough-in and connection of the following fixtures (see exceptions in item (f) below):

(a) Flush valve water closets.

(b) Automatic flushing urinals of stainless steel construction suitable for wall mounting.

(c) Wall mounted lavatories with provisions for cold water only in public toilet rooms.

(d) Showers - Non-scalding, single lever mixing valve and adjustable spray head.

(e) Three-bubbler, non-freeze drinking fountain for the public areas (at toilet rooms) and electric water coolers for enclosed employee areas.

(f) Fixture rough-in only for concession and various kitchen facilities. Hook-up is not included.

(5) Domestic Hot Water System - Shall be comprised of an electric hot water generator and storage tank for locker spaces and adjacent spaces with similar requirements. A small circulating pump shall be included to insure instant hot water. Remote spaces such as concessions, snack bars and enclosed employee areas shall have individual electric hot water heaters as required to preclude expense of piping hot water with heat traced insulated lines. Additional booster heaters shall be provided at dishwashing and laundry facilities. In each of the above, flexibility shall be maintained without the expense of keeping a large volume of water stored at elevated temperatures.

(6) Field Turf Watering - Shall be comprised of a network of underground polyvinyl chloride (PVC) piping with suitable sprinkler nozzles for automatic maintenance of field conditions.

e. Each of the foregoing shall be engineered in compliance with applicable codes and governing regulations.

I. ELECTRICAL SYSTEM DESCRIPTION

1. Distribution and Lighting

Distribution of electrical power throughout the Stadium will be at 277/480 volts with all fluorescent lighting at 277 volts. Receptacles and other low voltage equipment will be supplied from step down transformers reducing the 277/480 volt system to 120/208 volts. These step down transformers will be located in equipment rooms throughout the Stadium. All incandescent lighting will be 120 volt.

2. Emergency Lighting

All enclosed public areas will be equipped with plug-in type battery emergency lights. The batteries are maintained at maximum voltage by a charger plugged into the normal power source. If the normal power fails, the battery, with a maximum life of four hours, will automatically "come on" and provide emergency lighting.

3. Field Lighting

Field lighting will consist of "Metal Arc" fixtures and incandescent fixtures. Sufficient incandescent field lighting will be installed to provide minimum levels for game play in accordance with the Illuminating Engineering Society (IES) standards. The "Metal Arc" fixtures will provide the additional lighting for color television broadcasts. It is apparent from this that it will be possible to have the lower level of illumination for all games except those requiring higher intensity for color broadcasts. "Metal Arc" fixtures are considerably more expensive and require a constant applied voltage. Any interruption of power could require a period of time lapse before restarting the fixture.

The goal of the conceptual design is to provide a 50,000 seat state-of-the art stadium for Major League Baseball which can be expanded in the future to a 70,000-seat facility which will be multi-purpose and accommodate NFL football as well as baseball. The basis for the design will be the criteria presented in Section Two of this report, Stadium Program. The design presented on the following pages represents a new concept for multi-purpose stadia which is different from all existing and any proposed facilities. This concept optimizes spectator sight lines for both football and baseball and provides a changeable configuration which relates to the desirable shape for each sport. The conceptual design, shown in footprint form, and the stadium program will allow the Commission to proceed with the next phase, detailed design of the facility.

PHASE 1 - BASEBALL CONFIGURATION

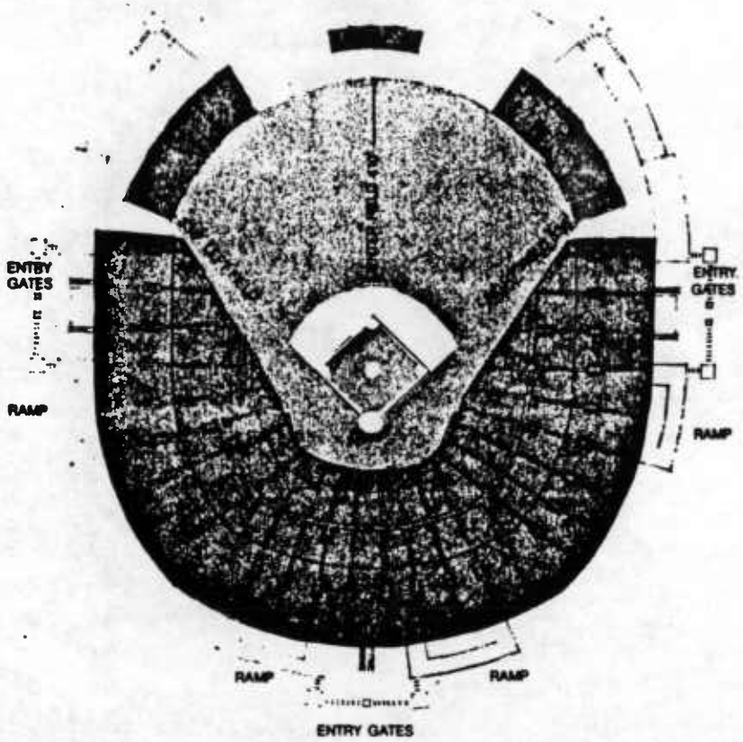
Existing multi-purpose stadiums have provided design solutions which favor one sport, either football or baseball, and compromise the other. The primary reason for this is that playing fields are vastly different sizes and shapes and require seating sections oriented differently. Baseball fields require approximately 160,000 square feet in a fan shape with the majority of seats behind home plate from first to third based. Football fields require approximately 96,000 square feet in a rectangular shape with the majority of seats along the side lines. Designers have not recognized the importance of optimizing seating and sight line configurations for both sports.

This design concept optimizes spectator sight lines. Beginning with an ideal shape for a baseball field, seating sections are curved around the field with an open end on the north side. The open-ended configuration minimizes outfield seating and provides an open area beyond centerfield for landscaping and a large scoreboard. Seating is maximized behind home plate by providing approximately 28,000 seats between first and third base on three levels (lower seating deck, club level and upper seating deck). The stadium section remains constant along the side lines and is proportioned to optimize sight lines for football and baseball. The club level will contain the baseball press box and up to 70 private suites seating a minimum of 12 people.

The phase one baseball configuration provides two general admission seating sections in the outfield which will pivot in towards the field for proper orientation for future football. Phase one configuration also provides retractable seating sections behind the dug-outs and home plate for the future football field.

The overall shape of the stadium focuses seats toward the baseball infield and maximizes seating between first and third bases. Seating capacity for phase one baseball is estimated as follows:

Lower Seating Deck:	27,500 seats
Club Level (including suites):	3,000
Upper Level Seating Deck:	20,000
TOTAL	50,500 seats



BASEBALL CONFIGURATION

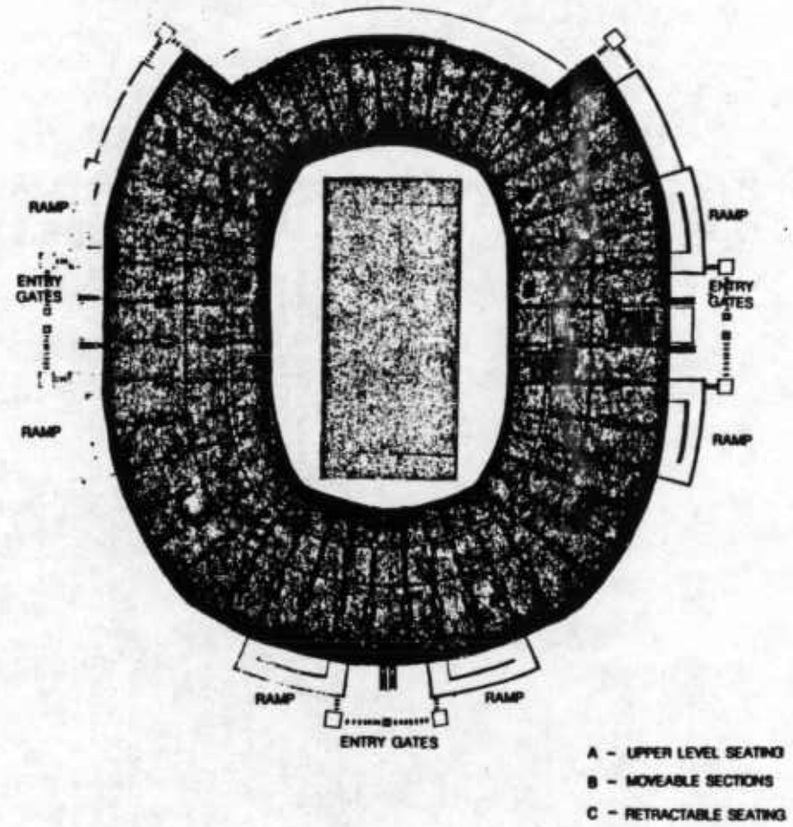
PHASE 2 - FOOTBALL CONFIGURATION

In order to convert the stadium to Phase II, mutli-purpose football/baseball configuration, new construction would include: a) infill of on-grade lower level seating in center field, b) extension of the club level and upper seating deck along the side lines, c) addition of retractable seating sections in the north end zone and in front of the pivoting general admission seating, d) finishing football locker rooms, press box and administrative offices, e) addition of ramps, restrooms, concession stands and service facilities serving the expanded seating capacity and f) moveable or retractable seating at the field level to complete side line seating for football. The expanded club level will contain the football press box and 50 additional private suites for a total of 120 suites on this level.

The ideal football configuration is rectalinear in shape with rounded corners which maximizes seating along the side lines and focuses seats towards the football field. In order to achieve this shape the upper seating decks are extended and curved around the north corners and the general admission sections in the outfield pivot to align with the football field. Lower level seating is completed through the use of retractable and moveable seating sections. The U-shaped configuration maximizes side line seating for football and also allows for future expansion by completing the north end zone upper decks. The geometry of this multi-purpose shape also accommodates to the future addition of a fixed or retractable dome.

Seating capacity for Phase II football is estimated as follows:

Lower Seating Deck:	36,900 seats
Club Level (including suites)	4,000
Upper Lavel Seating Deck	30,200
TOTAL	71,100 seats



FOOTBALL CONFIGURATION

Based on data collected, site requirements, stadium program and the conceptual stadium design, preliminary site plans have been developed for the Camden Yards, Anne Arundel, and Lansdowne Yard locations. The goal of the design was to provide the optimum solution for each within the constraints of that particular site. Therefore, access/egress improvements, on-site circulation, parking requirements and stadium area were based on Phase II, 70,000 seat, maximum crowd facility. The following plans and written description illustrate the architectural solutions and the traffic ingress and egress situations. These conceptual site plans, along with the preliminary cost estimates and fiscal impacts, will be used as the basis for the site comparison matrix and analysis in Section 7 of this report.

The efficient movement of people to and from a stadium event is an important factor in developing a successful stadium site plan. The inbound and outbound traffic flows are such that people accept a greater degree of congestion; however, most baseball stadium access systems are designed to service the demand in a one-hour period. This one-hour period is most critical during the outbound movements following the event. Typically the inbound traffic is spread out for approximately two hours, as more and more people arrive early and "tailgate" at the stadium. Average attendance figures for football games are greater than those for baseball games, therefore, the discharge time following a football game is greater than the typical one-hour period. These greater rates are generally accepted since there are approximately eight home football games a season, compared to 80 home baseball games.

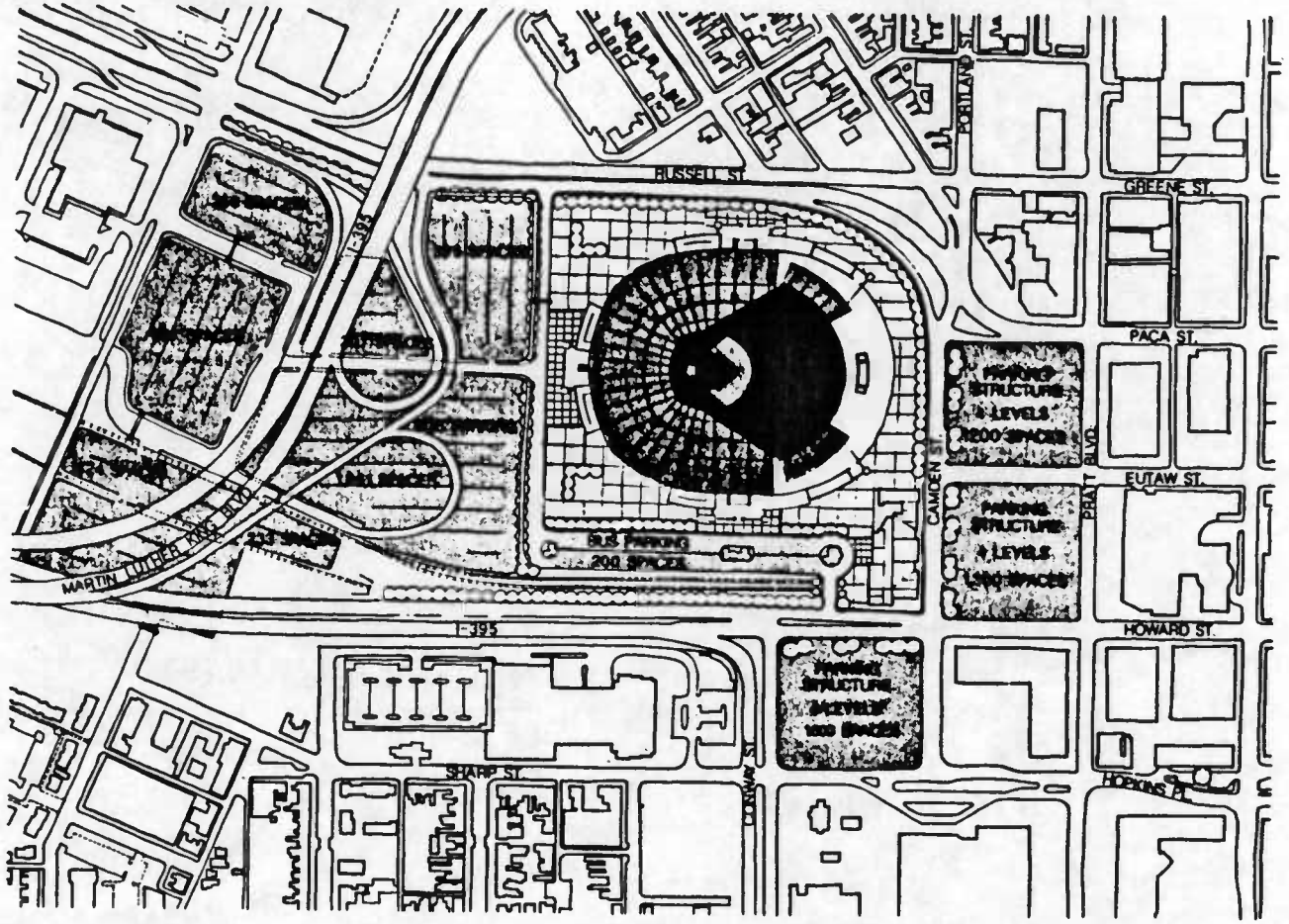
Prior to developing specific traffic access systems for each of the sites, it is necessary to determine the demand associated with the event. Based upon national studies, 84 percent travel to a sports event by private auto. It has been determined that typical automobile occupancy rates approximate 3.5 people per car. Using these factors and typical bus occupancy factors, the vehicular demand for Phase I (50,000 seat baseball game) will be 12,540 vehicles and for Phase II (70,000 football game) the demand will be 17,555 vehicles. Following the development of the stadium demand the direction of approach for each of the three sites was based on the distribution of place of residence for those employed in the downtown area of Baltimore as presented in the 1984 Downtown Transportation Study. In addition, it was assumed that ten to twenty percent of those coming to events at the Stadium would be traveling from the Washington D.C. area. The direction of approach percentages were then applied to the demand figures to determine the volumes anticipated on the roads leading to the individual sites. Various access improvements to each of the surrounding roadways were then developed to provide safe and effective ingress and egress to each of the sites.

CONCEPTUAL SITE PLANS

CAMDEN YARDS SITE UTILIZATION SUMMARY

The location of a stadium in the Baltimore downtown central core offers the unique opportunity for use by event goers of existing parking and street networks. An analysis of the schematic site utilization plan indicates the primary use of the surrounding street system and parking with required improvements and adjustments. Traffic analysis indicates improvements and expansion to the Martin Luther King, Jr. Overpass and adjacent Russell Street are required. The parking utilization concept illustrates that downtown parking can be supplemented by 3,250 on-site spaces to the south of the stadium and 4,000 structured parking spaces to the north and east of the stadium.

Most existing structures and rail lines on the Camden Yards site to the north of Hamburg Street need to be relocated in order to meet the required stadium and vehicular and pedestrian circulation program requirements. The historical Camden Station on the northeast corner is shown to remain for use by the public and commuter rail users. The existing neighborhoods and industry to the south, east and west remain physically unaffected.



CAMDEN YARDS STADIUM SITE
STADIUM SITE PLAN

NEW STADIUM SITE EVALUATION

FOR

MARYLAND SPECIAL ADVISORY COMMISSION ON
PROFESSIONAL SPORTS AND THE ECONOMY

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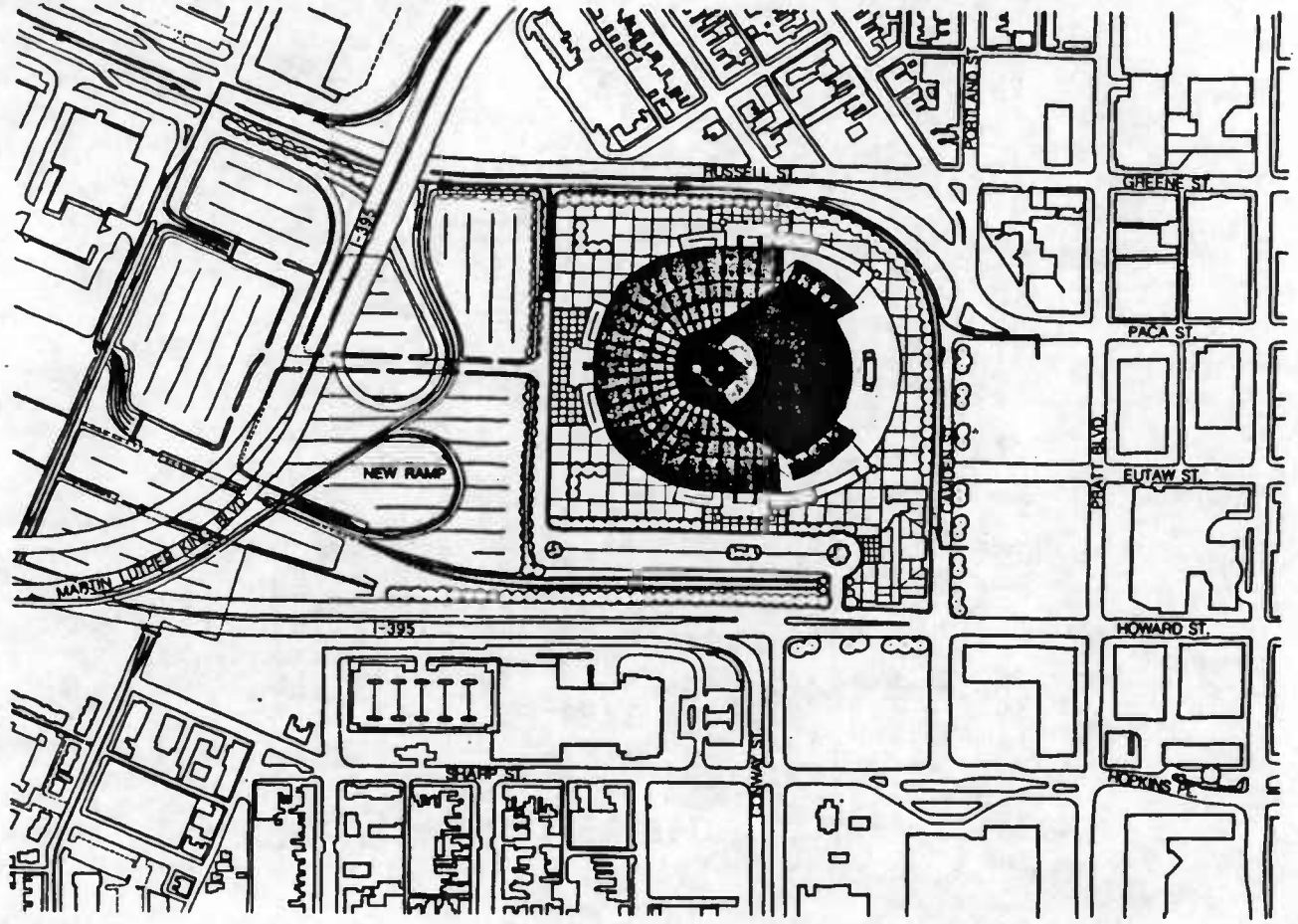
CAMDEN YARDS SITE

Ingress Traffic

The Camden Yards site is bordered on the north by Camden Street, on the east by Howard Street/I-395, on the south by Hamburg Street and on the West by Russell Street. Approximately 3,000 parking spaces will be provided on the site. An additional 4,000 structured spaces will be provided just north of the proposed site. The remaining parking will be provided by the existing public and private lots and garages north of the site. Stadium events typically occur during the off peak period; therefore, additional capacity should be available within these lots and the transportation system. However, the intense Harbor area development which is occurring east of the proposed site creates a parking and traffic demand during the off-peak period. Therefore, if this site is feasible for futher study, a detailed parking survey of the use of existing parking lots and streets during business off-peaks will be required.

Traffic destined for the stadium site or one of the three proposed parking structure will use I-395 (45 percent), Russell Street (10 percent), Martin Luther King, Jr. Boulevard (13 percent), the one-way pair of Green Street and Paca Street (27 percent), Pratt Street (2 percent) and Hanover Street (3 percent). Traffic from I-395 will enter the site from a proposed loop ramp which leads into the parking area or a ramp which proceeds to Russell Street, where access to the structures can be obtained. Traffic from Russell Street can access the site directly or proceed to Pratt Street to gain access to the structures. Traffic from Martin Luther King, Jr. Boulevard will exit onto Russell Street and turn into the site, or turn left onto Pratt Street and gain access to the proposed parking structures. Traffic from Green Street will proceed south to Russell Avenue and enter the site directly or turn onto Pratt Street and gain access to the proposed parking structures. Traffic from Pratt Street will either turn onto Russell Street and turn directly into the site or proceed east and gain access to the proposed parking structures. Hanover Street traffic will proceed northbound to Hamburg Street and enter off of Hamburg Street or continue north to Hill Street, then west on Hill Street to Sharp Street. Traffic will continue north on Sharp Street to Camden Street and gain access to the parking structure from Camden Street. The remaining attendees will use the existing parking facilities and street system. Under this plan the stadium parking lot and the three structures could be filled in less than one hour.



CAMDEN YARDS STADIUM SITE
VEHICULAR INGRESS

NEW STADIUM SITE EVALUATION

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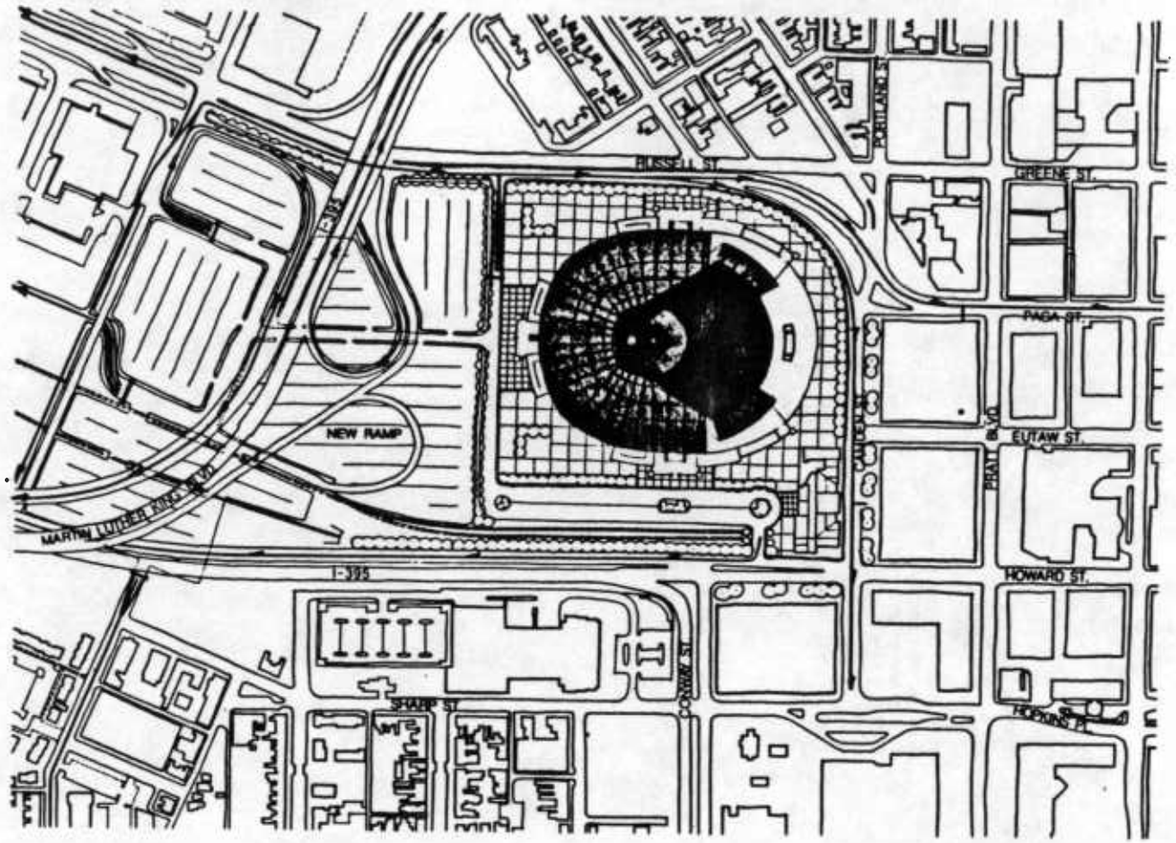
CAMDEN YARDS SITE

Egress Traffic

Traffic exiting the Camden Yards site will exit directly onto I-395 northbound or southbound, or onto Russell Street north or southbound. Traffic exiting the parking structures will exit onto Camden Street, Pratt Street or Howard Street. From these streets traffic can easily be able to proceed to the major arterials, i.e., Paca Street, Martin Luther King, Jr. Boulevard or Russell Street. The discharge time for the stadium parking lot, (2,000 vehicles) and parking structures (4,000 vehicles) is less than one hour.



CAMDEN YARDS STADIUM SITE
VEHICULAR EGRESS

NEW STADIUM SITE EVALUATION
FOR
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CAMDEN YARDS SITE PARKING INVENTORY

The opportunity to use existing parking is unique to this site in comparison to the other two sites. A substantial amount of parking now axists primarily to the north and northeast of the Camden Yards site. Parking in neighborhoods to the east or west of Camden Yards is not included in this inventory or recommended for use during events. Spaces within six blocks are only used in this inventory as this is a reasonable walking distance for an event such as professional baseball.

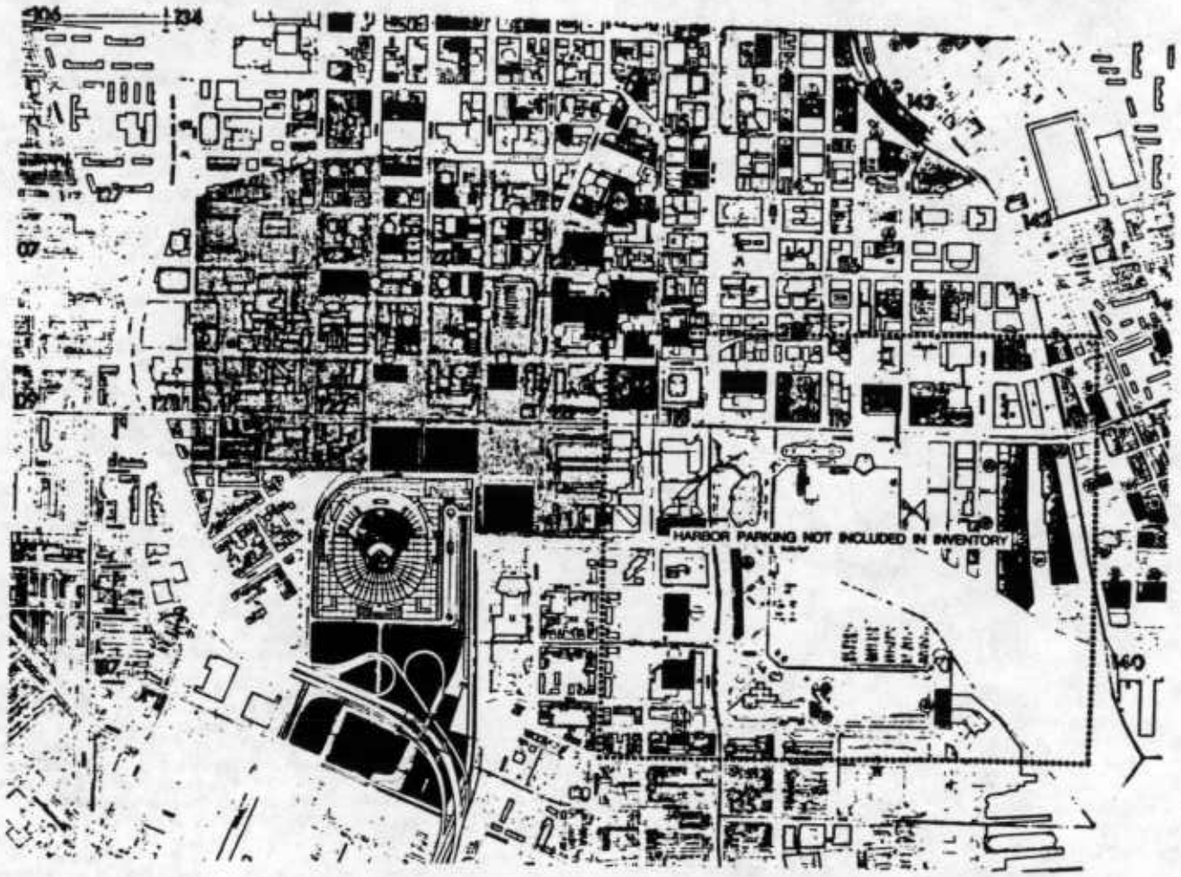
An inventory of the existing parking downtown producas 10,500 public parking spaces within six blocks. Approximately 2,000 of these parking spaces occur within two blocks of the Inner Harbor and are subtracted for use by Harbor visitors. Also, approximately 1,000 on-street parking spaces are available; a potential 6,000 spaces in private lots now exists although approximately half of these spaces would be occupied by nonstadium event goers. In summary, a total potential of 12,500 off-site spaces exist for stadium event goers.

On site, this site utilization and parking scheme provides for 3,250 additional parking spacas. This is desirable for use by the handicapped, priority season ticket holders, emergency vehicles, and buses. In addition, 4,000 spaces occur in proposed new parking structures in three axisting lots to the north and east of Camden Yards. While parking structures are generally more expensive and less desirable in terms of access, it was chosen to provide 4,000 structured spaces for the stadium. The alternative would be to acquire and utilize 31 additional acres of land south of Hamburg Street for additional surface parking. The structured parking approach was chosen because:

- The relatively high acquisition cost of additional land actually results in lower costs for the structured parking approach.
- The structured parking would locate these patrons significantly closer to the stadium.
- The structured parking would also serve the Civic Center, Convention Center, and as general daily downtown parking, whereas surface parking south of Hamburg Street would likely be too distant for these uses.
- Using the land south of Hamburg Street would require taking businesses that could result in the loss of 1,030 jobs.
- Egress time from structured parking facilities of this size can be acceptable, particularly if two levels are below grade and two levels are above grade, with separate egress points for each pair of levels (this would also maximize the potential for air-rights development above the structures).

PARKING SUMMARY

Existing usable spaces within six blocks:	
Public Off-Street	8,500
Private Off-Street	3,000
On Street	1,000
Subtotal	12,500
New spaces:	
Off-Street Surface	3,250
Structured Parking on Existing Surface Lots	4,000
Total	18,750



LEGEND

- AREA INCLUDED IN INVENTORY
- NEW ON-SITE PARKING
- EXISTING PUBLIC STRUCTURED PARKING
- EXISTING PUBLIC SURFACE PARKING

PUBLIC OFF-STREET PARKING INVENTORY

NEW STADIUM SITE EVALUATION

FOR

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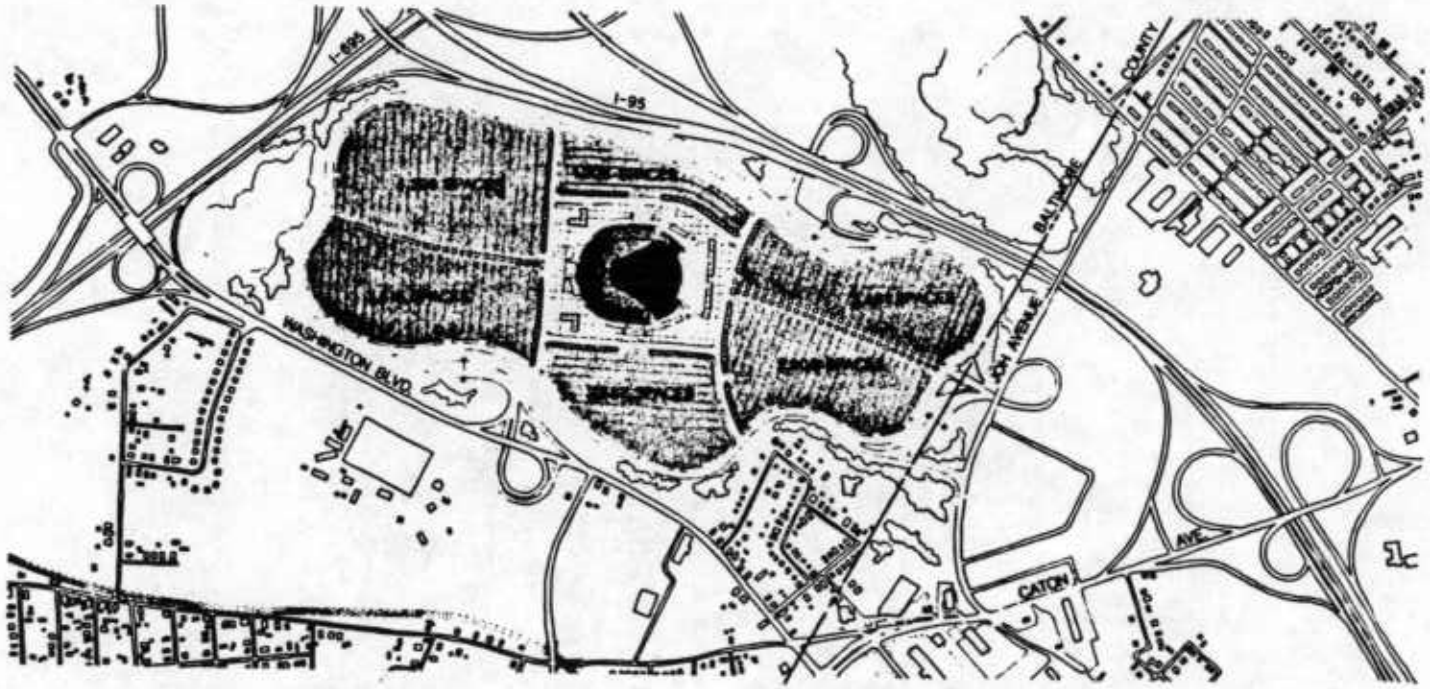
LANSDOWNE SITE UTILIZATION SUMMARY

A stadium development in the Lansdowne area may offer substantial improvement to the site and the immediate surrounding areas. Street and intersection improvements at Washington and Joh Streets with open landscaped areas as delineated here could serve to enhance the aesthetic quality of this site and neighborhood. Affecting the aesthetic and physical quality of a new sports stadium and site area include the stadium's location on the site, prominance, orientation, pedestrian circulation, vehicular circulation and site amenities.

The stadium structure is centrally located among required surface parking. Its base elevation is midway between the highest grade to the west and the low on the east. The elevation and location of the stadium on the site will enable a good view from motorists passing on Baltimore Beltway-I-695 and Highway I-95. Stadium orientation will be dictated by solar factors. It is determined that a multipurpose stadium orientated along a dominate north/south axis is optimum.

Vehicular circulation to the 17,760 spaces provided through and around the site must handle peak pre-game and post-game volumes yet circulate smoothly and continuously in order to produce desirable access time. The recommended interior roadway system for the stadium site is based upon both a perimeter ring road and a one-way radial circulation concept. Once entering one of the three access points, vehicles are directly connected to any parking area via the one-way, 4-lane perimeter road. Cars are packed nearest to the stadium and stacked progressively back so that pedestrians walk uninhibited by inbound traffic to the stadium. Upon leaving the event, outbound traffic simply reverses the inbound mode to one-way outbound.

The schematic site utilization plan illustrates that adequate space exists to maintain the existing neighborhood at the northeast portion of the site, as well as new office buildings in the northern portion. Also, it is anticipated that the existing communication towers in the west side could remain. The preliminary plan indicates most other structures on the site would be relocated.



LANSDOWNE STADIUM SITE
STADIUM SITE PLAN

NEW STADIUM SITE EVALUATION
FOR
MARYLAND SPECIAL ADVISORY COMMISSION ON
PROFESSIONAL SPORTS AND THE ECONOMY

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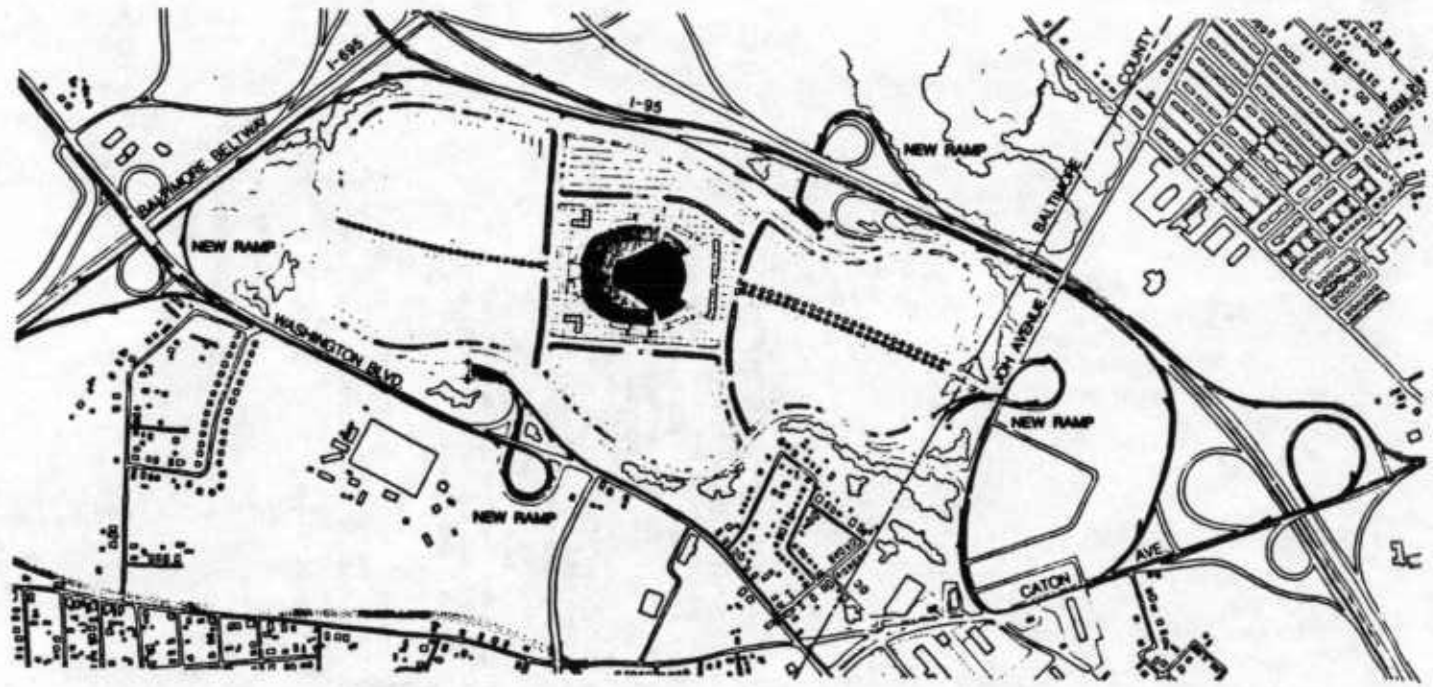
LANSDOWNE SITE

Ingress

The Lansdowne site is bordered by I-95 on the west, Joh Avenue on the north, Washington Boulevard on the east and I-695 (Baltimore Beltway) on the south. Approximately 22 percent and 10 percent of the stadium traffic will approach the site from the northwest and the southeast, respectively, on the Baltimore Beltway. An edditionel 20 percent and 36 percent of the stadium traffic will approach the site from the southwest end the northeast, respectively, via I-95. Approximately nine percent of the stadium traffic will epproech the site from the north on Ceton Avenue. The remaining three percent of the traffic will approech the site from the east on Patapsco Avenue. The primary access point for traffic from the northwest on the Baltimore Beltway will be from a proposed two-lene stadium event only off ramp from the I-695 to I-95 northbound interchenge ramp. Traffic from the southeast on I-695 will exit onto Weshington Boulevard and then enter the site via a loop ramp off of Washington Bouleverd. Traffic from the southwest on I-95 will exit onto Caton Avenue, then proceed south on Caton Avenue to Joh Avenue end enter the site from Joh Avenue via e loop ramp. Traffic from the northeast on I-95 will enter the site from a new two-lane stedium event only off ramp which is loceted just north of the I-95 end I-695 interchange. Traffic from Caton Avenue and Patepsco Avenue will enter either et Joh Avenue or Washington Boulevard. Under this plen, the stedium parking lot could be filled in less than 1.4 hours for e sold-out baseball game with an attendence of 50,000 and in less than 2.0 hours for a sold-out football game with an attendance of 70,000.



LANSDOWNE STADIUM SITE
VEHICULAR INGRESS

NEW STADIUM SITE EVALUATION
FOR
MARYLAND SPECIAL ADVISORY COMMISSION ON
PROFESSIONAL SPORTS AND THE ECONOMY

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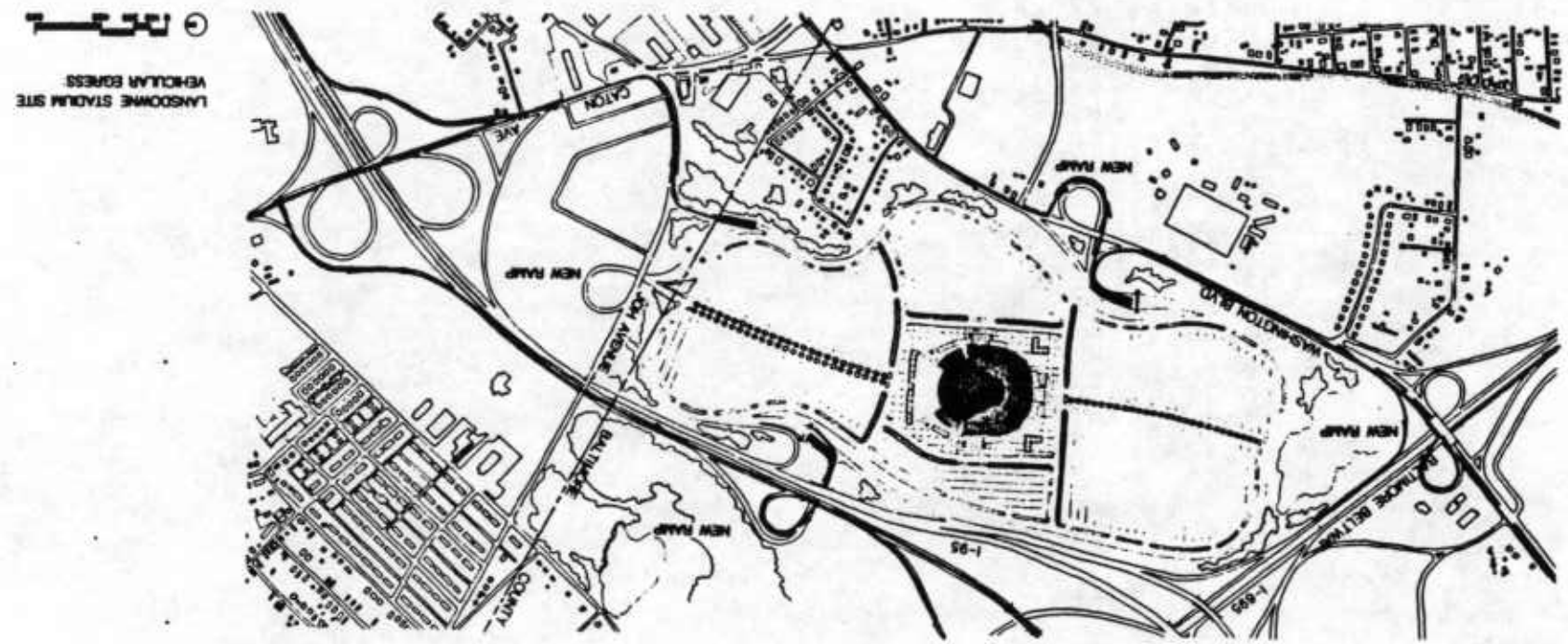
LANSDOWNE SITE

Egress Traffic

Traffic exiting the Lansdowne site will exit onto either Joh Avenue, Washington Avenue or directly onto I-95 to the northeast or to the southwest. Traffic wishing to proceed in either direction on I-95 or I-695 can exit directly onto I-95 at the proposed stadium event only ramps located just north of the I-695 and I-95 interchange. An alternate route for traffic wishing to proceed in either direction on I-695 or I-95 is to exit onto Joh Avenue and proceed northwest to Benson Avenue. Traffic will then proceed northeast on Benson Avenue to Caton Avenue where it will turn right and enter either southeast or northeast I-95. Traffic wishing to proceed, in either direction, on I-695 can also exit onto Washington Boulevard and proceed south to the proposed loop ramp to southeast I-695 and on ramp to northwest I-695. Traffic wishing to proceed on Caton Avenue or Patapsco Avenue can exit onto Washington Boulevard or Joh Avenue and proceed to Caton or Patapsco Avenues. The discharge time for this access system is estimated to be less than 1.4 hours for a sold-out baseball game with an attendance of 50,000 and less than two hours for a sold-out football game with an attendance of 70,000.


LANSDOWNE STADIUM SITE
VEHICULAR EGRESS
NEW STADIUM SITE EVALUATION
FOR
MARYLAND SPECIAL ADVISORY COMMISSION ON
INTERSTATE AND TRADE ECONOMY
HUNTS
Buck Ross & Co
NEW RAMP
NEW RAMP
NEW RAMP
NEW RAMP
WASHINGTON BLVD
BALTIMORE BELTWAY
I-95
I-695
COUNTY
BALTIMORE
AVE
CITY
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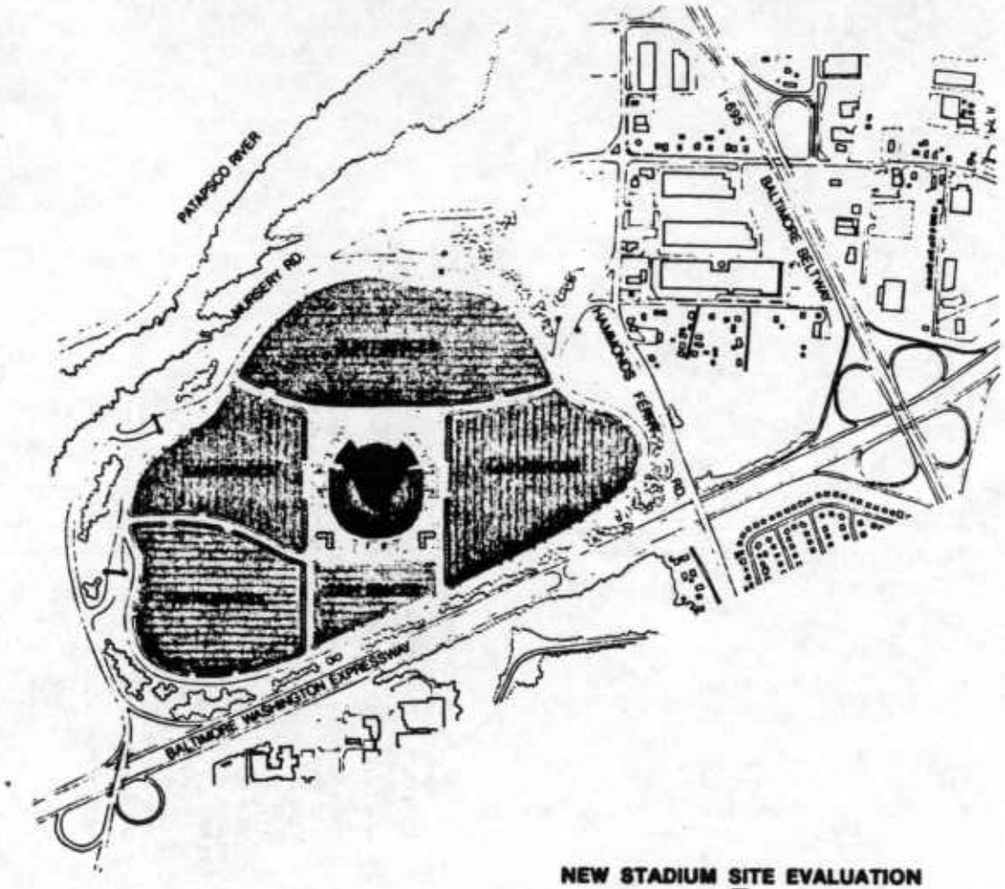
ANNE ARUNDEL COUNTY SITE UTILIZATION SUMMARY

The site utilization scheme illustrates the use of the entire area bounded by Hammonds Ferry Road and the expanded Nursery Road. Since expansion of the site to the surrounding low areas to the north and east is unfeasible, structures and homes along Hammonds Ferry Road would be relocated to meet program site area requirements. Relocation of these structures also serves to improve the visual impact and aesthetic appeal of the development.

The stadium is shown near the center of the site surrounded by its required parking. Its base elevation is determined to be half-way between the site high ground to the southwest and lower grades to the northeast. Its base elevation is somewhat lower than the intersection of Baltimore Washington Expressway and Interstate 95 which will achieve acceptable visual access to passing motorists. Preliminary grading studies indicate a substantial amount of earth moving will be required in order to meet acceptable slopes. The parking area is graded to a maximum acceptable five percent slope in most areas. The existing drainage ravine in the east portion of the site will require substantial fill over new drainage culvert. Additional site modifications recommended include the relocation or burial of the existing overhead high voltage power line along the south edge.

Here too, as at Lansdowne, the parking strategy includes the radial perimeter road concept to circulate vehicles around the edge of the parking to their respective parking areas. Vehicles use any of four entrance points to move one-way, inbound or outbound. Pedestrian's movement occurs toward the stadium for the most part uninhibited.



ANNE ARUNDEL STADIUM SITE
STADIUM SITE PLAN

NEW STADIUM SITE EVALUATION
FOR
MARYLAND SPECIAL ADVISORY COMMISSION ON
PROFESSIONAL SPORTS AND THE ECONOMY

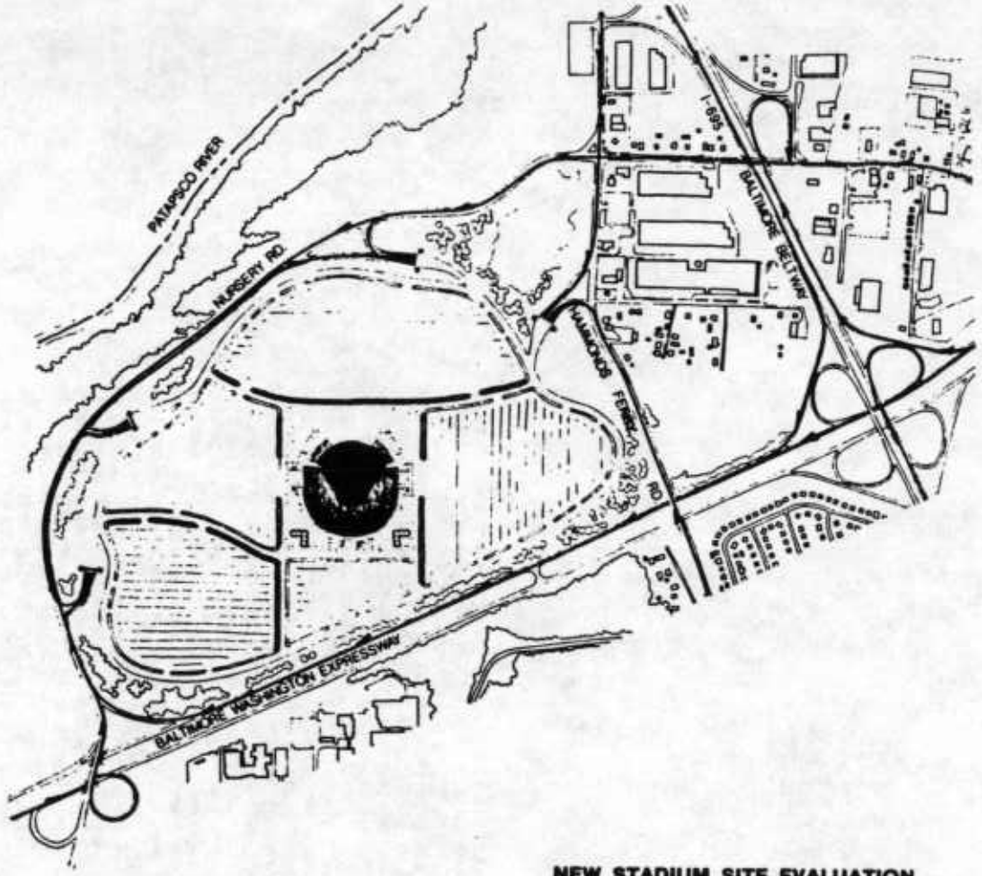
HNTB

Touche Ross & Co.

ANNE ARUNDEL SITE

Ingress Traffic

The Anne Arundel site is bounded by Nursery Road on the north, Hammonds Ferry Road on the east, I-295 (Baltimore-Washington Expressway) on the south and Nursery Road on the west. The Baltimore Beltway (I-695) is approximately 1,600 feet north of the site. It is projected that approximately 44 percent of the traffic will approach the site from the northwest on the Baltimore Beltway (I-695). An additional 11 percent and 41 percent will approach from the southwest and northeast, respectively, on the Baltimore-Washington Expressway. The remaining four percent will approach the site from the south on Hammonds Ferry Road. The primary access pattern for traffic from the northwest will be to exit I-695 at the proposed off ramp to be constructed at Hammonds Ferry Road and proceed south to Nursery Road. At the Nursery Road intersection stadium traffic can turn right on Nursery Road and enter the site off of Nursery Road or continue south and enter the site off of Hammonds Ferry Road. The existing short ramp off of I-695 to Hammonds Ferry Road will serve as a minor secondary access route. Once on Hammond's Ferry Road the stadium traffic will follow the same pattern as described above. An additional alternative for I-695 traffic will be to proceed south to the I-295 interchange and head southwest on I-295 to the proposed exit ramp at Nursery Road. Once on Nursery Road, stadium traffic can enter the site from one of the two access points. The majority of the stadium traffic on I-295 will use the new interchange at Nursery Road and I-295 and enter from Nursery Road. A secondary access point will be the I-695 northbound and Nursery Road interchange. Traffic on I-295 can proceed northwest on I-695 to the Nursery Road exit, then proceed west on Nursery Road to the Hammonds Ferry Road intersection and proceed, straight or turn left, to a stadium access point. Traffic on Hammond's Ferry Road will proceed north to one of the two stadium access points north of I-295. Under this plan the stadium parking lot could be filled in less than 1.5 hours for a sold-out baseball game with an attendance of 50,000 and in less than two hours for a sold-out football game with an attendance of 70,000.



ANNE ARUNDEL STADIUM SITE
VEHICULAR INGRESS

NEW STADIUM SITE EVALUATION
FOR
MARYLAND SPECIAL ADVISORY COMMISSION ON
PROFESSIONAL SPORTS AND THE ECONOMY

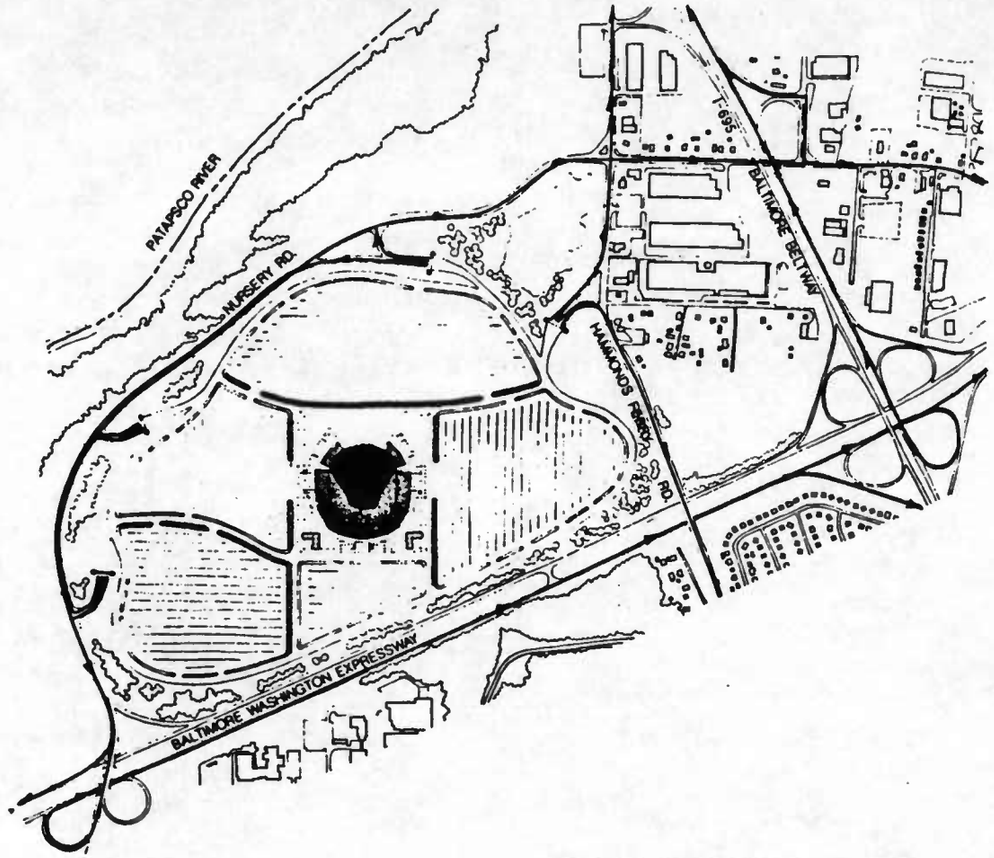
HNTB

Touche Ross & Co.

ANNE ARUNDEL SITE

Egress Traffic

Traffic exiting the Anne Arundel site will exit to either Nursery Road or Hammonds Ferry Road. Traffic wishing to proceed northwest on I-695 has three options: 1) proceed north on Hammonds Ferry Road to the proposed loop ramp form Hammonds Ferry Road to I-695; 2) proceed east on Nursery Road to the I-695 northwest bound on ramp or; 3) proceed on Nursery Road to its proposed interchange with I-295. From this interchange traffic can proceed northeast on I-295 to I-695. Traffic wishing to proceed on I-295 has two options: 1) use the proposed interchange between Nursery Road and I-295; or 2) proceed north on Hammonds Ferry Road to the existing short I-695 southeast on ramp, just north of Nursery Road. From this interchange traffic can proceed southeast to I-295. Traffic wishing to proceed south on Hammond's Ferry Road can enter directly onto Hammonds Ferry Road. The discharge time for this access system is estimated to be less than 1.5 hours for a sold-out baseball game with a attendance of 50,000 and less than two hours for a sold-out football game with attenance of 70,000.



ANNE ARUNDEL STADIUM SITE
VEHICULAR EGRESS

NEW STADIUM SITE EVALUATION

FOR

MARYLAND SPECIAL ADVISORY COMMISSION ON
PROFESSIONAL SPORTS AND THE ECONOMY

HNTB

Touche Ross & Co.

4.10

The preliminary cost estimates presented in this section are based on the conceptual site plans, stadium program and conceptual stadium design for each of the three sites. The cost of the stadium construction is shown to be the same for each site because the stadium footprint and orientation can be accommodated on all sites and did not require different design solutions. It was not within the scope of this work to complete detailed design of the stadium which would have allowed a preliminary quantity estimate of construction costs. Therefore, the stadium cost was calculated on a per seat basis for the 70,000 seat, Phase Two configuration. Per seat costs for existing stadiums range from $500 to over $2,000. This variation is due to the time of construction, the quality level of the stadium, the type of facility (domes/open, single-purpose/multipurpose) and many other factors.

Based on our experience in stadium design, we believe that the type and quality of a new stadium for the Baltimore area will cost between $1,200 and $1,300 per seat in order to meet the goals of the community. The preliminary costs include estimates for roadway improvements, utility connections, site development, contingencies, design fees, land acquisition costs and demolition in 1986 dollars. In order to estimate total development costs we have included an inflation provision and financing cost. This preliminary estimate represents the best judgment of this team based on available information and the conceptual designs in this report.

PRELIMINARY COST ESTIMATES

PRELIMINARY COST ESTIMATES

	Phase I (Baseball) Only		
	Site A Camden Yards	Site B Lansdowne	Site C Anne Arundel
Stadium Construction[1]	$ 62,000,000	$ 62,000,000	$ 62,000,000
Roadway Improvement[2]	3,400,000	5,400,000	3,600,000
Utility Connections	60,000	250,000	450,000
Site Developments[3]	2,000,000	13,000,000 [4]	12,000,000 [4]
Parking Structures	8,000,000	0	0
Subtotals	$ 75,460,000	$ 80,650,000	$ 78,050,000
Contingency (10%)	7,546,000	8,065,000	7,805,000
Architectural/Engineering Fees (5.5%)	4,150,000	4,436,000	4,293,000
Construction Testing	250,000	350,000	350,000
Subtotals	$ 87,406,000	$ 93,501,000	$ 90,498,000
Acquisition Costs	$ 32,934,000	$ 9,073,000	$ 7,558,000
Demolition and Relocation Costs	4,940,000	907,000	756,000
Total 1986 Development Costs	$125,280,000	$103,481,000	$ 98,812,000
Inflation Provision	$ 20,395,000	$ 18,123,000	$ 17,407,000
Financing Costs[5]	9,356,000	8,250,000	8,014,000
TOTAL	$155,031,000	$129,854,000	$124,233,000

PRELIMINARY COST ESTIMATES

	Total Phase I and II (Multi-Purpose)		
	Site A Camden Yards	Site B Lansdowne	Site C Anne Arundel
Stadium Construction[1]	$ 87,000,000	$ 87,000,000	$ 87,000,000
Roadway Improvement[2]	3,400,000	5,400,000	3,600,000
Utility Connections	60,000	250,000	450,000
Site Developments[3]	2,000,000	17,600,000 [4]	16,400,000 [4]
Parking Structures	15,000,000	0	0
Subtotals	$107,460,000	$110,250,000	$107,450,000
Contingency (10%)	10,746,000	11,025,000	10,745,000
Architectural/Engineering Fees (5.5%)	5,910,000	6,064,000	5,910,000
Construction Testing	250,000	350,000	350,000
Subtotals	$124,366,000	$127,689,000	$124,455,000
Acquisition Costs	$ 32,934,000	$ 10,521,000	$ 8,981,000
Demolition and Relocation Costs	4,940,000	1,052,000	898,000
Total 1986 Development Costs	$162,240,000	$139,262,000	$134,344,000
Inflation Provision	$ 27,290,000	$ 24,540,000	$ 23,783,000
Financing Costs[5]	11,232,000	10,066,000	9,816,000
TOTAL	$200,762,000	$173,868,000	$167,933,000

Notes:

(1) Based on Phase I configuration of 50,000 seats and Phase II configuration of 70,000 seats, as appropriate, at approximately $1,240 per seat.

(2) Includes major roadway improvements such as widening of existing streets and construction of intersection ramps, but does not include on-site roads.

(3) Includes on-site parking lots, roadways, utilities, earthwork, curbs, walks, planting areas, lighting, signage and earthwork.

(4) Because no soils analysis or test borings were available for these sites, it was assumed that excavation and fill would cost $2.00 per cubic yard within the site.

(5) Based on financing plan presented in Professional Sports Action Plan.

Operating a stadium has significant fiscal impacts on the local municipality where the stadium is located. These fiscal impacts could potentially differ between the three prospective sites. The objective of this task was to assess the fiscal impacts for the three sites. For each of the three sites, the following fiscal impacts were quantified:

- Revenues
  - Rent
  - Admission Taxes
  - Parking Taxes
  - Real Estate Taxes
- Expenses
  - Direct Stadium Expenses
  - Other Related Expenses (e.g. police and traffic control support)

In this analysis, land values were established using real estate tax records. Appraisal of real estate was not within the scope of this engagement. The overall economic impacts of a stadium (e.g. expenditures at restaurants and generated employment) were estimated by the Maryland Department of Economic Development. Economic impacts on specific municipalities were addressed qualitatively. A detailed analysis to distribute the ripple economic impacts between the various municipalities was not within the scope of this engagement.

FISCAL IMPACTS

DEVELOPMENT FRAMEWORKS

The fiscal impact at each of the three sites was estimated for the following frameworks:

1. A baseball only stadium is built and Memorial Stadium is renovated for football only.

2. A multipurpose stadium is built for baseball and football.

3. Alternate development occurs on the site if it is not used as the stadium site, including the existing Memorial Stadium site.

The current fiscal impact of the existing Memorial Stadium was quantified and compared to the fiscal impact of the new stadium under each of the development frameworks described above.

The fiscal impacts were estimated under each of the frameworks described above once each site is fully developed for either the new stadium or alternate development. No attempt was made to quantify the fiscal impacts during the intervening years when a particular site may only be partially developed. Since the time frame for full development is uncertain, the annual fiscal impact was expressed in real terms (1985 dollars).

KEY ASSUMPTIONS

The following paragraphs in this section discuss the methodology and key assumptions behind each of the items in the fiscal analysis.

1. Rent and Direct Stadium Expenses

It was assumed that the Maryland Sports Authority (MSA) would own and operate the new baseball only stadium or multipurpose stadium. The MSA would also acquire and operate Memorial Stadium, if it was renovated for football only. The MSA would negotiate and hold the lease with all tenants of its sports facilities, and thereby would receive rent from these tenants based on the terms of the respective leases. The MSA also would incur all direct operating expenses of its sports facilities.

Therefore, the local municipality would not receive any rent on the sports facilities. Presently, Memorial Stadium is owned by Baltimore City. This would mean a loss of rent revenue to Baltimore City. However, the City would not incur the direct operating expenses of the facility. The tables below list the rent payments paid by the Orioles to the City for the 1982 through 1984 seasons, and the Memorial Stadium Operating Expenses incurred by the City for the last three fiscal years. The estimation of current rent and expense impacts to Baltimore City were made based on these historical figures.

Memorial Stadium Rent Payments
(Dollars in Thousands)

	1982	1983	1984
Rent	$ 0	$ 681	$1,132

Source: Baltimore Orioles and Baltimore City, Department of Law

Note: The terms of the lease between the City and the Orioles is a unique profit sharing arrangement. This arrangement is discussed in detail in the Maryland Special Advisory Commission's Professional Sports Action Plan.

Memorial Stadium Operating Expenses
(Dollars in Thousands)

	FY 1983	FY 1984	FY 1985
Operating Expenses	$1,466	$1,664	$1,577

Source: Baltimore City, Department of Recreation and Parks

2. Admission Taxes

The State authorizes its municipalities to assess an admission and amusement tax on sports and entertainment. This tax cannot exceed 10%. The State collects this tax and distributes it back to the municipality in which it is levied. The State retains a minimal amount of these funds to cover its administrative costs of collecting and distributing these taxes.

Current admission tax revenue generated by Orioles games goes to Baltimore City. The tax on Orioles games is at the maximum rate of 10%. The table below lists Orioles admission tax revenue for 1982 through 1984.

Memorial Stadium Admission Tax Revenue
(Dollars in Thousands)

	1982	1983	1984
Tax Revenue	$ 846	$1,513	$1,171

Source: Baltimore Orioles and Baltimore City, Department of Law

In the fiscal impact analysis, it is assumed that existing admission tax legislation is restructured to authorize the MSA to impose admission taxes, not to exceed 8%, at all facilities owned by the Authority, and correspondingly limit admission taxes at those facilities by the respective municipality in which the facilities are located to a maximum of 2%. Thus, the maximum total admission tax at the MSA facility would be 10%, which corresponds to current admission tax limitations.

The amount of admission tax proceeds generated in the development frameworks is based on the projected paid attendance as presented in the Professional Sports Action Plan. Admission tax proceeds to the local municipality were calculated based on the number of games average attendance, average ticket price, and the admission tax rate.

3. Parking Taxes

Parking taxes are another source of revenue to the local municipality. These taxes are a county level tax that is levied against public and private parking facilities. In Baltimore City the tax is $0.20 per car per day. In Anne Arundel County the tax is $0.15 per car per day. There is no parking tax in Baltimore County.

The Baltimore City parking tax is levied on the Memorial Stadium parking facilities. The table below lists the parking tax revenue generated for the 1982 through 1984 Orioles seasons.

Memorial Stadium Parking Tax Revenue
(Dollars in Thousands)

	1982	1983	1984
Tax Revenue	$ 41	$ 47	$ 60

Source: Baltimore Orioles

The amount of parking tax proceeds generated in the development frameworks is based on projected attendance as presented in the Professional Sports Action Plan. Parking tax proceeds to the local municipality were calculated based on the number of games, average attendance, average persons per car, and the tax per car.

4. Real Estate Taxes

Real estate assessment and taxation in Maryland is based on the Full Cash Value (FCV) of property. The FCV is the current market value. The FCV of property is updated every three years. To determine the tax imposed on a piece of property, an assessed value is calculated at 43.5% of the FCV. Tax rates vary by county and are levied on each $100 of assessed value. The tax rate for Baltimore City, Anne Arundel County, and Baltimore County is $6.00, $2.57, and $2.995 per $100 of assessed value, respectively. There also is an additional State tax of $0.21 per $100 of assessed value.

A real estate tax analysis was performed on each site. This analysis consisted of two parts. First, the current use and real estate taxes were determined for each site. This analysis was also used to establish the land acquisition cost for each site. Second, potential higher and better uses and the corresponding real estate tax revenue were identified for each site. The higher and better use of each site was based on the current use of other nearby land parcels around each site.

In many instances where a statewide organization, like a sports authority, acquires property which is on the tax roles, that

organization agrees to make payments in lieu of takes (PILOT) to the local municipality. Since the state organization is exempt from real estate taxes, the PILOT attempts to compensate the local municipality for the loss of tax revenue. In this analysis, no PILOT was assumed so that the incremental effect of a loss or gain of real estate tax revenue could be assessed for each development scenario.

Memorial Stadium

The Memorial Stadium site consists of 32 acres. The Stadium and land are owned by Baltimore City. The City also owns a 7.6 acre parking lot and Eastern High School, which are both across the street from the stadium. Since these properties are City owned, they are exempt from real estate taxes. A real estate tax map of this property is presented in Exhibit 6.1 and key statistics are summarized in Exhibit 6.2.

If Memorial Stadium were renovated into a football only facility and owned by the MPSA, it would be exempt from real estate taxes. Therefore, the tax status of the site would remain unchanged.

To determine alternative higher and better use of this site, nearby properties were analyzed. The analysis of these properties is also presented in Exhibit 6.2. The primary use of these properties is residential housing. On a per acre basis, the average FCV of these properties' land and improvements is $214,741 and $686,828, respectively. These averages were used to establish the real estate taxes that could be realized by Baltimore City if the Memorial Stadium site were developed as residential housing.

The Eastern High School site was excluded, and further, it was assumed that only 75% of this site is developed. Under these assumptions, the FCV of land and improvements would be $26.7 million and the total real estate taxes would be approximately $698,000 per year.

It is important to note that these properties are owned by the City. Therefore, it would primarily be the City's decision on how to best use the Memorial Stadium site if a stadium is developed elsewhere. If the City chose to utilize the site for recreational or community purposes, then no real estate taxes would result from such alternate use.

Camden Yards

The Camden Yards site is comprised of 29 lots. The total area of these lots is 49 acres. These lots are owned by multiple owners, and are primarily used for industrial purpose. The FCV of these lots' land and improvements is $42.3 million. With this FCV, local real estate taxes on this site are approximately $493 thousand per year. Exhibit 6.3 lists the owners and FCV of each lot. A real estate tax map of this site is presented in Exhibit 6.4.

EXHIBIT 6.1

MEMORIAL STADIUM SITE
REAL ESTATE TAX MAP

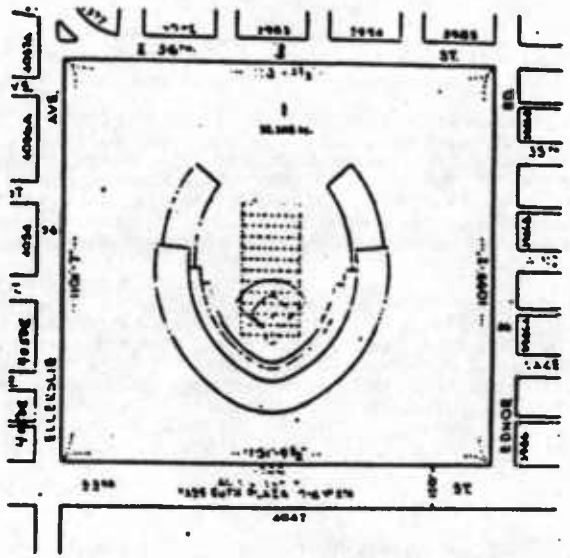


EXHIBIT 6.2

MEMORIAL STADIUM SITE
REAL ESTATE TAX ANALYSIS

I. CURRENT USE

Description	Block	Owner	Acres	1986 Full Cash Value: Land	Improvement	Total	Estimated Taxes	Current Zoning	FCV Per Acre: Land	Improvement	Total
Memorial Stadium	3906C	Baltimore City	32.00	$2,266,950	$24,908,150	$27,175,100	$0	Residential	$70,842	$778,380	$849,222
Parking Lot	4047	Baltimore City	7.35	822,630	216,370	1,038,900	0	Residential	108,900	28,640	137,540
Total			39.35	$3,089,580	$25,124,520	$28,210,000	$0				

II. CURRENT USE NEARBY

Description	Block	Owner	Acres	1986 Full Cash Value: Land	Improvement	Total	Estimated Taxes	Current Zoning	FCV Per Acre: Land	Improvement	Total
Residential Properties											
Lot 2	3908B	G. Banks	0.12	$12,960	$38,650	$51,610	$1,347	Residential	$112,011	$334,046	$446,058
Lot 8	3904	H. Williams	0.05	10,830	35,550	46,380	1,211	Residential	236,449	776,220	1,012,680
Lot 9	3904	L. Thrie	0.05	10,830	35,550	46,380	1,211	Residential	236,449	776,220	1,012,680
Lot 10	3904	H. Doty	0.04	10,320	34,800	45,120	1,178	Residential	230,533	777,378	1,007,911
Lot 19	3904	E. Hartsburg	0.04	10,320	34,800	45,120	1,178	Residential	230,533	777,378	1,007,911
Lot 20	3904	R. Sessions	0.04	10,320	34,800	45,120	1,178	Residential	230,533	777,378	1,007,911
Lot 19	3905	H. Stewart	0.05	10,800	34,250	45,050	1,176	Residential	222,961	707,076	930,037
Lot 28	3905	B. Banisky	0.04	10,320	33,250	43,570	1,137	Residential	230,533	742,754	973,287
Lot 42	3905	R. Hedaber	0.04	10,320	37,000	47,320	1,235	Residential	230,533	826,323	1,057,856
Lot 1	4056A	J. Kallen	0.03	8,710	27,440	36,150	944	Residential	271,905	853,776	1,124,781
Lot 22	4056A	H. Hooten	0.06	10,450	27,030	37,480	978	Residential	175,078	452,856	627,934
Lot 37	4056A	S. Fruin	0.06	10,450	27,030	37,480	978	Residential	170,233	440,324	610,557
Average			0.05	$10,553	$33,346	$43,898	$1,146		$214,741	$686,828	$901,568

III. POTENTIAL ALTERNATIVE DEVELOPMENT

Amount Developed: 75.00%, including Eastern High School

Description	Block	Owner	Acres	1986 Full Cash Value: Land	Improvement	Total	Estimated Taxes	Current Zoning	FCV Per Acre: Land	Improvement	Total
Residential Development											
Memorial Stadium	3906C	Hypothetical Developer	32.00	$5,133,780	$16,503,861	$21,637,641	$564,742	Residential	$210,741	$686,828	$901,568
Parking Lot	4047	Hypothetical Developer	7.35	1,216,610	3,891,221	5,107,836	133,315	Residential	210,741	686,828	901,568
Total			39.35	$6,350,394	$20,375,082	$26,745,476	$698,057				

EXHIBIT 6.3

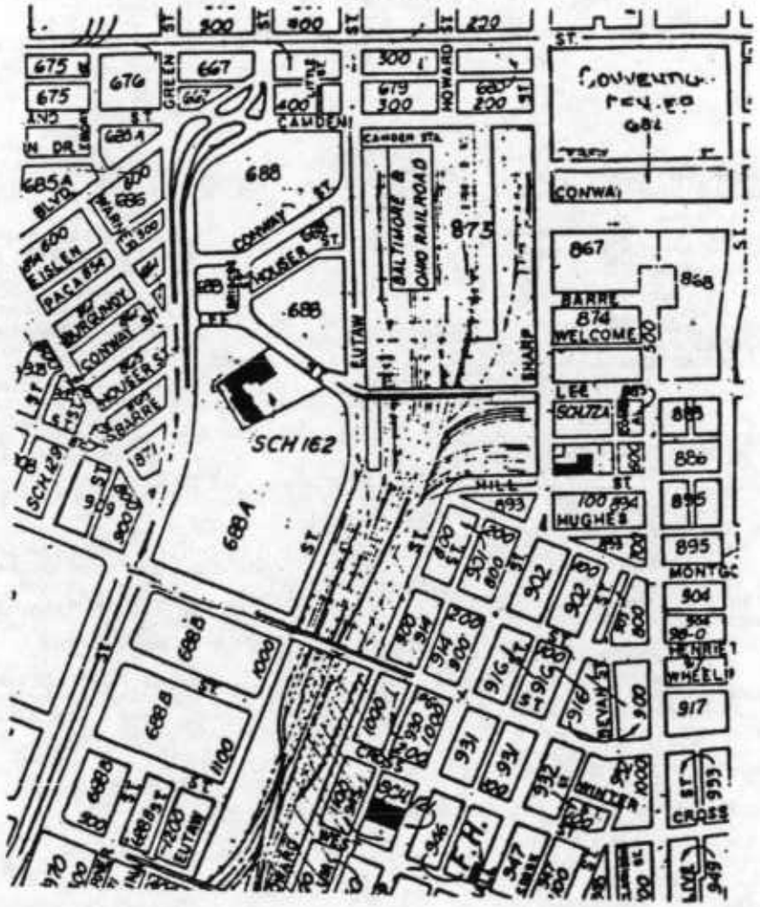
CAMDEN YARDS
REAL ESTATE TAX ANALYSIS

1. CURRENT USE

Description	Block	Owner	Acres	1986 Full Cash Value Land	1986 Full Cash Value Improvement	1986 Full Cash Value Total	Estimated Taxes	Current Zoning	FCV Per Acre Land	FCV Per Acre Improvement	FCV Per Acre Total
Lot 1	600	B Green & Co.	3.64	$2,457,000	$1,234,200	$3,691,200	$96,340	Industrial	$675,549	$339,395	$1,014,944
Lot 2	600	Capsa Inc.	0.85	368,500	46,100	414,600	10,821	Industrial	433,529	54,492	488,021
Lot 3	600	Baltimore City	0.24	105,050	0	105,050	Exempt	Industrial	433,597	0	433,597
Lot 4	600	Robert Milhauser	0.25	114,200	3,600	113,800	2,970	Industrial	435,573	14,229	449,802
Lot 4A	600	Baltimore City	0.22	93,650	0	93,650	Exempt	Industrial	435,581	0	435,581
Lot 5	600	Robert Milhauser	0.41	173,730	411,500	585,230	15,273	Industrial	423,732	1,003,659	1,427,390
Lot 7	600	Nap Associates	1.32	286,620	225,700	512,320	13,372	Industrial	217,196	171,505	389,301
Lot 9	600	Baltimore City	0.75	326,700	620,200	946,900	24,714	Industrial	435,600	826,933	1,262,533
Lot 12	600	Baltimore Steam Co.	1.31	569,760	606,550	1,176,310	30,702	Industrial	435,596	463,723	899,320
								Industrial			
Lot 1	600A	Radio Schools Inc.	0.91	198,190	502,150	700,340	10,279	Industrial	217,791	551,813	769,604
Lot 1A	600A	Baltimore City	0.78	341,070	0	341,070	Exempt	Industrial	435,594	0	435,594
Lot 2	600A	Baltimore City	1.91	831,120	2,911,050	3,742,170	Exempt	Industrial	435,597	1,525,708	1,961,305
Lot 3	600A	Radio E TV Schools Inc.	0.42	91,040	0	91,040	2,398	Industrial	217,781	0	217,781
Lot 3A	600A	Radio E TV Schools Inc.	0.35	0	0	0	0	Industrial	0	0	0
Lot 4	600A	Samuel Hiemstrich	1.10	539,270	607,600	1,146,870	29,933	Industrial	490,953	517,106	976,060
Lot 5	600A	Radio E TV Schools Inc.	0.35	73,140	1,073,800	1,150,940	30,040	Industrial	217,797	3,118,261	3,336,058
Lot 6	600A	Estaw Property	1.91	415,340	672,050	1,087,390	28,381	Industrial	217,798	352,412	570,210
Lot 7	600A	City Lease-S Hiemstrich	0.93	201,460	237,000	438,040	11,434	Industrial	217,795	256,649	474,443
Lot 8	600A	City Lease-Estaw Prop.	0.70	152,460	10,450	162,910	4,252	Industrial	217,800	14,929	232,729
Lot 9	600A	City Lease-Estaw Prop.	1.27	277,470	8,200	285,670	7,456	Industrial	217,794	6,436	224,231
Lot 14	600A	City Lease-Betz School	1.80	391,380	0	391,380	10,215	Industrial	217,796	0	217,796
Lot 1	873	Baltimore City	2.70	3,636,010	7,600	3,644,410	Exempt	Industrial	1,346,793	2,731	1,349,526
Lot 4	873	B&O Railroad	6.23	1,359,040	20,000	1,379,040	35,993	Industrial	218,183	3,211	221,393
Lot 5	873	Harbor Exchange	4.62	3,010,700	1,581,300	4,600,000	120,044	Industrial	653,398	342,273	995,671
Lot 6	873	B&O Railroad	6.02	3,934,100	0	3,934,100	Exempt	Industrial	653,396	0	653,396
Lot 7	873	B&O Railroad	0.88	1,152,640	0	1,152,640	Exempt	Industrial	1,306,863	0	1,306,863
Lot 1	679	Baltimore City	2.47	5,373,100	53,350	5,426,450	Exempt	Industrial	2,177,989	21,623	2,199,615
Lot 1	600	Baltimore City	0.51	1,106,000	0	1,106,000	Exempt	Industrial	2,177,953	0	2,177,953
Lot 2	600	Baltimore City	1.80	3,920,000	0	3,920,000	Exempt	Industrial	2,177,778	0	2,177,778
Total			98.78	$31,307,540	$10,834,800	$42,342,340	$492,654				

EXHIBIT 6.4

CAMDEN YARDS SITE
REAL ESTATE TAX MAP



There is potential for redevelopment of some land within this site. The lots on the northern half of the site, in Block 873 and 688, have higher land market values and higher potential for redevelopment than lots in the southern half of the site. This is because these parcels are closer to the outer edge of the expanding inner harbor redevelopment.

Based on the potential for redevelopment, a redevelopment scenario was constructed to determine alternative higher and better uses of this site. It was assumed that lots 4 and 5 in Block 873 were redeveloped for mixed office and retail use. Improvements of $20 million were assumed for each lot. Based on the market value of land in Blocks 679 and 680, a comparable land value of $2 million per acre was assumed. To be conservative, no other redevelopment was assumed for the other lots in the site. Under this redevelopment scenario, the real estate taxes for these lots increased from $156 thousand to $1.6 million. For the entire site, real estate taxes increased from $493 thousand to $1.9 million. The details behind this scenario are presented in Exhibit 6.5.

Lansdowne

This site is comprised of 43 parcels of property, and is owned by multiple owners. Total area for the site is 262 acres. Five parcels of property are in Baltimore City and the rest are in Baltimore County. The five Baltimore City parcels comprise 16 acres, which represents only 6% of the total site acreage. This site is primarily vacant land. There are some minor improvements and a few ongoing businesses. Current real estate tax records list this site's full cash value (FCV) at $9.0 million. With this FCV, local real estate taxes on this site are approximately $128 thousand per year. Exhibit 6.6 lists the owners and FCV of each parcel. The Real Estate Tax Map for this site is presented in Exhibit 6.7.

The vacant land in this site has development potential. The properties north of the site in Baltimore City are being developed for industrial and commercial purposes. The owners and FCV of some of these neighboring properties are listed in Exhibit 6.8. On a per acre basis, the average FCV of these properties' land and improvement is $167 thousand and $469 thousand, respectively. It is conceivable that the Lansdowne site could be developed in a similar manner to these neighboring properties.

Based on the usage of these nearby properties, a development scenario was constructed. It was assumed that the vacant parcels in the site would be developed into industrial and commercial parks, similar to the parcels north of the site in Baltimore City. To be conservative, it also was assumed that 75% of the acreage in these vacant parcels would be developed. Under this development scenario, the real estate taxes for these lots increased from $29 thousand to $1.1 million. This resulted in an increase in real estate taxes from $128 thousand to $1.2 million. Exhibit 6.9 presents the details behind this development scenario.

Northern Anne Arundel Site

This site is comprised of 51 parcels of property, and is owned by multiple owners. The majority of the acreage in this site is vacant, and one parcel alone is 120 acres. However, there are approximately 43 residential homes on this site. These homes primarily are along Hammonds Ferry and Nursey Roads. There are some minor improvements. Current real estate tax records list this site's (FCV) at $7.7 million. With this FCV, real estate taxes on this site are approximately $86 thousand per year. Exhibit 6.10 lists the owners and FCV of each parcel. The real estate tax map for this site is presented in Exhibit 6.11.

The vacant properties in this site has development potential. However, the residential properties on Hammonds Ferry and Nursey Road have little potential since their back yards fall into a ravine. It is conceivable that the vacant properties could be developed into industrial and commercial parks, such development would be similar to neighboring properties. On a per acre basis, the average FCV of land and improvements of nearby businesses are $51 thousand and $216 thousand, respectively. The owners and FCV of these neighboring properties are listed in Exhibit 6.12.

Based on the usage of these nearby properties, a development scenario was constructed. It was assumed that the vacant parcels in the site would be developed into industrial and commercial businesses similar to the neighboring properties. To be conservative, it also was assumed that 75% of these vacant parcels' acreage would be developed. Under this development scenario, the real estate taxes for these parcels increased from $11 thousand to $306 thousand. This resulted in an increase in real estate taxes for the entire site from $86 thousand to $381 thousand. The details behind this development scenario are presented in Exhibit 6.13.

5. Other Related Services

Wherever the new stadium is located, the relevant municipality will have to provide several tangential services related to the operation of the stadium. These services include police protection, traffic control, paramedic services, parking control, and signal and signage support.

The City of Baltimore currently provides these public services to the operations of Memorial Stadium. These services are provided by the Baltimore Police, Fire, Traffic and Transit, and Public Works Departments. The following paragraphs discuss the services provided by each of these departments, and the approach to estimating these costs for each development framework.

EXHIBIT 6.5

CAMDEN YARDS
REAL ESTATE TAX ANALYSIS
(Continued)

II. POTENTIAL ALTERNATIVE DEVELOPMENT

Description	Block	Owner	Acres	1986 Full Cash Value: Land	1986 Full Cash Value: Improvement	1986 Full Cash Value: Total	Estimated Taxes	Current Zoning	FCV Per Acre: Land	FCV Per Acre: Improvement	FCV Per Acre: Total
Underdeveloped Properties:											
Lot 4	873	B&O Railroad	6.23	$1,359,060	$20,000	$1,379,060	$33,993	Industrial	$218,183	$3,211	$221,393
Lot 5	873	Harbor Exchange	4.62	3,018,700	1,581,300	4,600,000	120,060	Industrial	653,398	342,273	995,671
Total			10.85	$4,377,760	$1,601,300	$5,979,060	$154,053				
Alternative Developments:											
Lot 4 - Mixed Use	873	Hypothetical Developer	6.23	$12,450,000	$20,000,000	$32,450,000	$847,154	Industrial	$2,000,000	$3,210,700	$5,210,700
Lot 5 - Mixed Use	873	Hypothetical Developer	4.62	9,240,000	20,000,000	29,240,000	763,164	Industrial	$2,000,000	4,329,004	6,329,004
Total			10.85	$21,690,000	$40,000,000	$61,690,000	$1,610,318				

Taxes Before Alternative Development for all Parcels:	$497,654
Less Taxes for Underdeveloped Properties:	154,053
Plus Taxes for Alternative Developments:	1,610,318
Equals Potential Taxes	$1,946,919

EXHIBIT 6.6

1. CURRENT USE

LANSDOWNE SITE
REAL ESTATE TAX ANALYSIS

Description	Parcel	Owner	Acres	1986 Full Cash Value Land	1986 Full Cash Value Improvement	1986 Full Cash Value Total	Estimated Taxes	Current Zoning	FCV Per Acre Land	FCV Per Acre Improvement	FCV Per Acre Total
Baltimore County:											
Primarily Vacant Land	404	S. Gittings	9.00	$129,600	00	$129,600	$1,688	Industrial	$14,400	00	$14,400
Hotel & Restaurant	276	Beltway Hotel Inc.	3.68	220,800	1,170,760	1,391,560	10,138	Commercial	60,000	318,141	378,141
Shop-JAL Autoglass	263	General Motors Inns Inc	0.56	16,620	17,120	33,740	440	Commercial	29,634	30,526	60,160
Shop-Helwigs Lawn Mower	262	H. Helwig	0.34	33,000	48,750	83,750	1,091	Industrial	101,640	141,570	243,210
House	259	H. Kibler	2.25	78,750	26,350	105,100	1,369	Commercial	35,000	11,711	46,711
House	252	H. Helwig	0.13	12,950	5,900	18,850	246	Industrial	101,640	46,307	147,947
Two Houses	251	H. Eichelman	0.32	23,700	84,850	107,850	1,405	Commercial	46,156	163,138	209,294
Tavern & Dwelling	249	H. Eichelman	0.33	19,870	33,650	53,520	697	Commercial	60,421	102,324	162,746
Primarily Vacant Land	171	Trust Real Estate	6.29	74,760	0	74,760	974	Industrial	11,887	0	11,887
Terminal-Warehouse Trkg Co	164	Baltrak Partners	7.16	251,100	667,570	918,670	11,969	Industrial	35,084	93,273	128,356
Primarily Vacant Land	163	H. Odonovan	2.12	17,320	0	17,320	226	Industrial	8,158	0	8,158
Primarily Vacant Land	157	L. Merritt	13.43	190,230	0	190,230	2,478	Industrial	14,164	0	14,164
Radio Tower	154	Peter & John Radio	1.38	21,570	7,090	28,660	373	Industrial	15,649	4,493	10,162
Garage-Security Ford Trac.	133	H. Schoonyan	3.32	127,850	210,500	338,350	4,408	Industrial	38,500	59,767	98,068
Office & Shop-Airbrakes Co	129	Air Brakes&Controls Inc	8.15	75,010	244,850	320,660	4,178	Industrial	503,205	1,625,244	2,128,449
Store	128	L. Merritt	37.38	437,060	75,890	512,950	6,683	Office	11,715	2,009	13,724
Warehouse&Garage-AAA Trkg	121	AAA Trucking Corp.	4.25	151,200	233,540	384,740	5,012	Industrial	24,192	37,366	61,558
Primarily Vacant Land	120	I. Odonovan	6.15	61,820	0	61,820	805	Industrial	10,049	0	10,049
Primarily Vacant Land	110	Eichelman Brothers Inc.	13.00	196,800	0	196,800	2,564	Industrial	15,138	0	15,138
House	117	H. Odonovan	1.00	819,400	850,630	870,050	8913	Industrial	819,400	850,630	870,050
Vacant Land	116	H. Odonovan	0.50	3,460	0	3,460	45	Industrial	6,920	0	6,920
Primarily Vacant Land	115	J. Weiner	7.99	53,910	0	53,910	702	Industrial	6,751	0	6,751
Primarily Vacant Land	112	H. Thiele	2.09	10,440	0	10,440	136	Industrial	4,995	0	4,995
Primarily Vacant Land	109	MD Roads Commission	09.53	594,380	0	594,380	Exempt	Industrial	12,001	0	12,001
Primarily Vacant Land	102	Eichelman Brothers Inc.	4.00	50,500	0	50,500	658	Industrial	12,625	0	12,625
Primarily Vacant Land	101	Eichelman Brothers Inc.	22.00	374,400	35,770	410,170	5,344	Industrial	17,010	1,626	18,644
Primarily Vacant Land	99	Eichelman Brothers Inc.	9.95	95,540	0	95,540	1,245	Industrial	9,599	0	9,599
House	98	H. Thiele	0.20	5,850	52,190	58,040	756	Industrial	29,863	186,128	206,991
House	96	L. Weisserling	3.63	46,678	50,900	97,578	1,271	Industrial	12,864	14,030	26,894
Plant-Nuova Eng. Inc.	92	LSB Joint Venture	0.65	26,000	139,010	165,010	2,160	Industrial	40,000	215,092	255,092
Dwelling & Storage	89	L. Daniels	0.89	41,160	24,470	65,630	855	Industrial	46,404	27,587	73,991
Vacant Land	82	H. Kibler	0.40	13,600	0	13,600	178	Industrial	28,787	0	28,787
Vacant Land	77	H. Smyth	0.22	9,450	0	9,450	123	Industrial	43,360	0	43,360
House	76	H. Heinlein	0.33	16,260	39,510	55,770	727	Industrial	48,881	119,773	167,656
House	71	L. Daniels	0.19	14,220	38,410	52,630	686	Industrial	74,884	204,952	282,333
Primarily Vacant Land	54	J Merritt	12.82	207,600	0	207,600	2,706	Industrial	16,200	0	16,200
Primarily Vacant Land	47	Joh Ave. Ltd Partnership	3.01	90,500	0	90,500	1,180	Industrial	30,063	0	30,063
Shop-State Equipment Sales	31	H. Flanagan	12.07	285,140	287,720	572,860	7,463	Industrial	23,610	23,832	47,450
Baltimore City:											
1/2 Lot 39 - land only	7704	Hewlett-Packard	4.00	696,960	0	696,960	10,191	Commercial	174,200	0	174,200
Lot 11	7704	H. Flanigan	1.38	120,220	10,000	130,220	3,399	Industrial	87,116	7,246	94,362
Lot 11A	7704	Joh Ave Ltd Partnership	0.86	75,010	0	75,010	1,958	Industrial	87,120	0	87,120
Lot 11B	7704	H. Flanigan	2.29	199,760	0	199,760	5,214	Industrial	87,117	0	87,117
Lot 1	7726	AAA Trucking	0.21	174,400	100,100	274,500	7,164	Industrial	21,239	12,191	33,430
Total			262.20	$5,388,760	$3,634,750	$9,023,310	$127,809				

EXHIBIT 6.7

LANSDOWNE SITE
REAL ESTATE TAX MAP

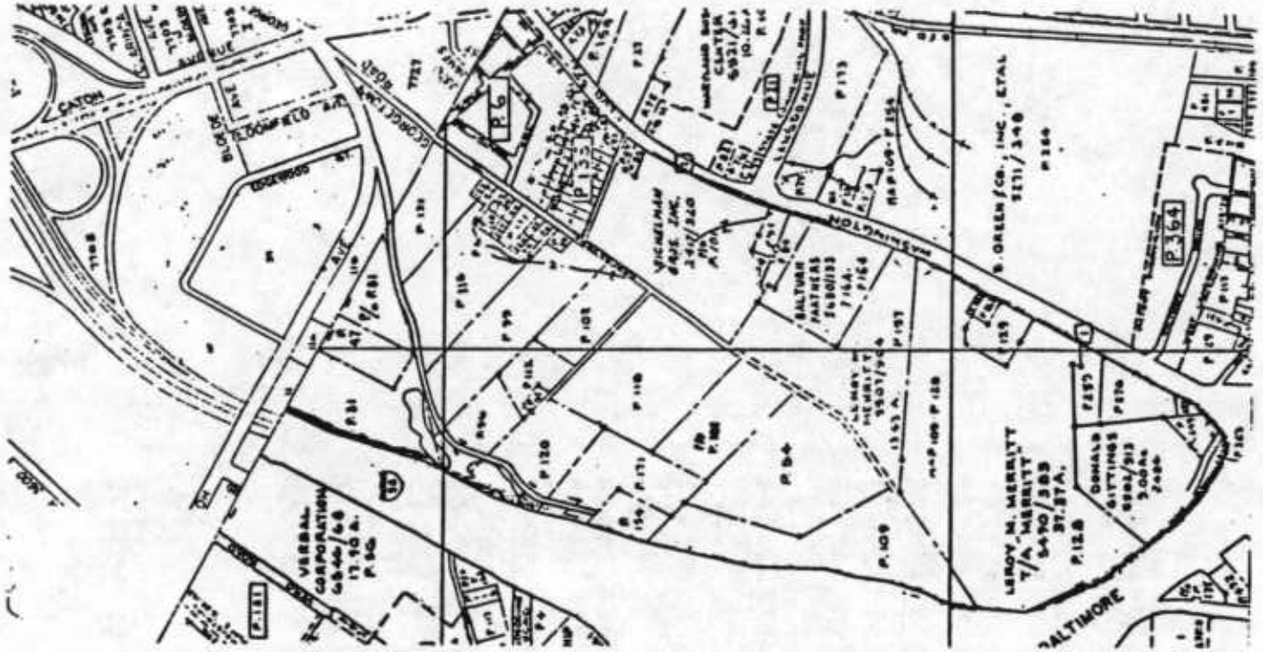


EXHIBIT 6.8

LANSDOWNE SITE
REAL ESTATE TAX ANALYSIS
(Continued)

II.CURRENT USE HEAVY

Description	Block	Owner	Acres	1986 Full Cash Value Land	Improvement	Total	Estimated Taxes	Current Zoning	FCV Per Acre Land	Improvement	Total
Baltimore City:											
Lot 2	7704	B. Borafie	0.23	$55,000	$141,000	$196,000	$5,116	Commercial	$217,000	$558,360	$775,160
Lot 7	7704	Center Associates	0.56	97,920	165,750	263,670	6,882	Industrial	174,233	294,929	469,164
Lot 10	7704	Bishop Properties	7.50	1,306,000	5,563,100	6,869,900	179,304	Commercial	174,240	741,747	915,987
Lot 11	7704	H. Flanigan	1.38	120,220	10,000	130,220	3,399	Industrial	87,116	7,246	94,362
Lot 16	7704	H. Goodman Trust	0.64	139,820	167,950	307,770	8,033	Industrial	217,700	261,604	479,393
Lot 19	7704	H. Goodman	2.27	395,100	1,669,900	2,065,000	52,333	Commercial	174,242	709,832	884,074
Lot 39	7704	Hewlett-Packard	8.06	1,403,680	4,675,000	5,078,680	153,434	Commercial	174,240	553,487	729,727
Lot 40	7704	Calculon Corp	3.08	583,090	1,241,000	1,824,090	47,609	Commercial	150,281	319,845	470,126
Lot 41	7704	Blonde LTD Partnership	4.41	663,040	3,899,700	4,562,740	119,008	Commercial	150,281	883,885	1,034,166
Lot 42	7704	Mueller Partnership	2.61	392,230	943,000	1,335,230	34,850	Commercial	150,280	361,383	511,582
Average			3.16	$515,698	$1,821,640	$2,337,338	$61,005		$167,050	$469,424	$636,474

EXHIBIT 6.9

LANSDOWNE SITE
REAL ESTATE TAX ANALYSIS
(Continued)

III. POTENTIAL ALTERNATIVE DEVELOPMENT

Amount Developed: 75.00%

Description	Parcel	Owner	Acres	1986 Full Cash Value: Land	1986 Full Cash Value: Improvement	1986 Full Cash Value: Total	Estimated Taxes	Current Zoning	FCV Per Acre: Land	FCV Per Acre: Improvement	FCV Per Acre: Total
Undeveloped Properties											
Baltimore County:											
Primarily Vacant Land	004	B. Gittings	9.00	$129,600	$0	$129,600	$1,680	Industrial	$14,400	$0	$14,400
Primarily Vacant Land	171	Trust Real Estate	6.29	74,760	0	74,760	970	Industrial	11,889	0	11,889
Primarily Vacant Land	163	R. Odusanes	2.12	17,320	0	17,320	226	Industrial	8,158	0	8,158
Primarily Vacant Land	157	L. Merritt	13.43	190,230	0	190,230	2,470	Industrial	14,164	0	14,164
Primarily Vacant Land	120	I. Odusanes	6.15	61,820	0	61,820	805	Industrial	10,049	0	10,049
Primarily Vacant Land	118	Eichelman Brothers Inc.	13.00	196,000	0	196,000	2,544	Industrial	15,138	0	15,138
House	117	R. Odusanes	1.00	19,400	50,650	70,050	913	Industrial	19,400	50,650	70,050
Vacant Land	116	R. Odusanes	0.50	3,440	0	3,440	45	Industrial	6,920	0	6,920
Primarily Vacant Land	115	J. Weiner	7.99	53,910	0	53,910	702	Industrial	6,751	0	6,751
Primarily Vacant Land	112	K. Thiele	2.07	10,440	0	10,440	136	Industrial	4,995	0	4,995
Primarily Vacant Land	109	MD Roads Commission	49.53	594,380	0	594,380	Exempt	Industrial	12,001	0	12,001
Primarily Vacant Land	102	Eichelman Brothers Inc.	4.00	50,500	0	50,500	658	Industrial	12,625	0	12,625
Primarily Vacant Land	101	Eichelman Brothers Inc.	22.00	374,400	35,770	410,170	5,344	Industrial	17,018	1,626	18,644
Primarily Vacant Land	99	Eichelman Brothers Inc.	9.95	95,540	0	95,540	1,245	Industrial	9,599	0	9,599
Primarily Vacant Land	54	J Merritt	12.82	207,680	0	207,680	2,706	Industrial	16,200	0	16,200
Primarily Vacant Land	47	Jah Ave. Ltd Partnership	3.01	90,500	0	90,500	1,180	Industrial	30,063	0	30,063
Undeveloped Properties											
Baltimore City:											
Lot 11A	7704	Jah Ave Ltd Partnership	0.86	75,010	0	75,010	1,958	Industrial	87,120	0	87,120
Lot 11B	7704	B. Flanigan	2.29	199,760	0	199,760	5,214	Industrial	87,117	0	87,117
Total			166.04	$2,045,990	$86,420	$2,532,010	$28,836				

EXHIBIT 6.9 (Continued)

LANSDOWNE SITE
REAL ESTATE TAX ANALYSIS
(Continued)

III. POTENTIAL ALTERNATIVE DEVELOPMENT (Continued)

Amount Developed: 75.00%

Description	Parcel	Owner	Acres	1986 Full Cash Value Land	1986 Full Cash Value Improvement	1986 Full Cash Value Total	Estimated Taxes	Current Zoning	FCV Per Acre Land	FCV Per Acre Improvement	FCV Per Acre Total
Alternative Development											
Baltimore County:											
Primarily Vacant Land	404	B. Gittings	9.00	$1,127,589	$3,168,611	$4,296,200	$53,972	Industrial	$167,050	$469,424	$636,474
Primarily Vacant Land	171	Trust Real Estate	6.29	787,009	2,213,003	3,001,612	39,106	Industrial	167,050	469,424	636,474
Primarily Vacant Land	163	H. Odensees	2.12	265,904	747,440	1,013,426	13,203	Industrial	167,050	469,424	636,474
Primarily Vacant Land	157	L. Burritt	13.43	1,682,739	4,728,623	6,411,362	83,529	Industrial	167,050	469,424	636,474
Primarily Vacant Land	120	I. Odensees	6.15	770,770	2,165,921	2,936,691	38,260	Industrial	167,050	469,424	636,474
Primarily Vacant Land	118	Eichelaan Brothers Inc.	13.00	1,628,740	4,576,882	6,205,622	80,848	Industrial	167,050	469,424	636,474
House	117	H. Odensees	1.00	125,288	352,068	477,356	6,219	Industrial	167,050	469,424	636,474
Vacant Land	116	H. Odensees	0.30	62,644	176,034	238,678	3,110	Industrial	167,050	469,424	636,474
Primarily Vacant Land	115	J. Weiner	7.99	1,000,460	2,811,368	3,811,827	49,661	Industrial	167,050	469,424	636,474
Primarily Vacant Land	112	H. Thiele	2.09	261,851	735,822	997,673	12,998	Industrial	167,050	469,424	636,474
Primarily Vacant Land	109	MD Roads Commission	69.53	6,205,374	17,437,569	23,642,943	308,026	Industrial	167,050	469,424	636,474
Primarily Vacant Land	102	Eichelaan Brothers Inc.	4.00	501,151	1,408,271	1,909,422	24,876	Industrial	167,050	469,424	636,474
Primarily Vacant Land	101	Eichelaan Brothers Inc.	22.00	2,756,329	7,745,493	10,501,822	136,820	Industrial	167,050	469,424	636,474
Primarily Vacant Land	99	Eichelaan Brothers Inc.	9.95	1,246,988	3,504,131	4,751,120	61,899	Industrial	167,050	469,424	636,474
Primarily Vacant Land	54	J Burritt	12.82	1,606,100	4,513,510	6,119,698	79,729	Industrial	167,050	469,424	636,474
Primarily Vacant Land	47	Joh Ave. Ltd Partnership	3.01	377,492	1,060,780	1,438,272	18,738	Industrial	167,050	469,424	636,474
Alternative Development											
Baltimore City:											
Lot 11A	7704	Joh Ave Ltd Partnership	0.06	107,873	303,130	411,003	10,727	Industrial	167,050	469,424	636,474
Lot 11B	7704	B. Flanigan	2.29	287,285	807,292	1,094,576	28,568	Industrial	167,050	469,424	636,474
Total			166.04	$20,002,556	$58,456,730	$79,259,305	$1,052,291				

Taxes Before Alternative Development for all Parcels:	$127,009
Less Taxes for Undeveloped Properties:	28,036
Plus Taxes for Alternative Development:	1,052,291
Equals Potential Taxes	$1,151,264

EXHIBIT 6.10

NORTHERN ANNE ARUNDEL COUNTY SITE
REAL ESTATE TAX ANALYSIS

I. CURRENT USE

Description	Parcel	Owner	Acres	1986 Full Cash Value Land	1986 Full Cash Value Improvement	1986 Full Cash Value Total	Estimated Taxes	Current Zoning	FCV Per Acre Land	FCV Per Acre Improvement	FCV Per Acre Total
Map 1											
House	396	R. Johnston	0.66	$21,075	$17,600	$39,535	$442	Residential	$32,915	$26,682	$59,517
House	304	J. Lamartine	0.97	26,085	51,085	77,970	872	Residential	27,600	52,611	80,299
House	283	J. Johns	3.57	66,520	122,640	189,160	2,115	Residential	18,633	34,353	52,986
Vacant Land	239	R. Hartleg	10.96	74,775	0	74,775	836	Industrial	6,825	0	6,825
House	211	J. Stavlas	0.52	10,075	27,015	45,090	504	Residential	34,760	51,952	86,712
House	192	C. Murphy	0.76	22,310	39,050	61,360	686	Residential	29,356	51,383	80,738
House	169	B. Barrett	0.40	20,000	19,205	39,205	438	Residential	41,667	40,010	81,677
House	152	B. Tomer	0.60	25,000	27,270	52,670	589	Residential	42,333	45,430	87,783
House	151	O. Moore	0.50	25,333	43,965	69,300	775	Residential	43,382	75,283	110,664
House	149	R. Eyler	1.44	20,270	23,485	43,755	489	Residential	14,076	16,309	30,385
House	106	J. Ritter	2.62	28,084	39,710	68,194	762	Residential	10,888	15,180	26,068
House	105	J. Ritter	1.00	27,320	26,165	53,485	598	Residential	25,296	24,227	49,523
Warehouse/Office	104	Leroy Merritt	10.12	400,090	2,845,700	3,333,790	37,270	Industrial	40,211	281,085	329,296
House	103	A. Rice	0.28	16,000	60,000	76,000	855	Residential	57,143	214,000	273,143
House	98	B. Davis	7.50	41,500	26,765	68,265	763	Residential	5,533	3,569	9,102
House	97	J. Vain	5.22	43,000	21,520	65,000	731	Residential	8,406	4,123	12,529
House	71	B. Lamartine	4.84	42,335	21,065	63,420	709	Residential	8,753	4,353	13,106
House	69	L. Brown	4.40	35,600	37,205	72,805	814	Residential	8,091	8,456	16,547
House	68	R. Boyson	0.40	25,000	32,535	57,535	643	Residential	52,083	67,781	119,865
House	67	E. Hartenstein	3.17	13,000	400	13,400	150	Residential	4,101	126	4,227

EXHIBIT 6.10 (Continued)

NORTHERN ANNE ARUNDEL COUNTY SITE
REAL ESTATE TAX ANALYSIS

1. CURRENT USE (Continued)

Description	Parcel	Owner	Acres	1986 Full Cash Value Land	1986 Full Cash Value Improvement	1986 Full Cash Value Total	Estimated Taxes	Current Zoning	FCV Per Acre Land	FCV Per Acre Improvement	FCV Per Acre Total
House	52	M. Carter	0.17	14,810	45,125	59,935	670	Residential	87,120	265,440	352,560
House	51	E. Buzinski	0.74	22,225	19,605	41,830	468	Residential	30,034	26,494	56,528
House	50	C. Wellein	2.73	30,895	28,080	58,975	659	Residential	11,317	10,286	21,603
House	49	M. Leach	1.02	24,345	17,860	42,205	472	Residential	23,868	17,510	41,379
House	48	A. Milewski	1.43	25,230	36,090	61,320	686	Residential	17,644	25,238	42,882
House	47	L. Moro	0.67	21,900	69,175	91,075	1,018	Residential	32,895	103,906	136,801
House	46	E. Digley	0.59	21,570	24,970	46,540	520	Residential	36,560	42,323	78,883
House	45	S. Chandler	0.98	23,270	26,595	49,865	557	Residential	23,745	27,138	50,884
House	44	D. Metzel	1.00	23,335	43,335	66,690	746	Residential	23,335	43,335	66,690
House	43	I. Garey	0.75	22,265	24,940	47,205	528	Residential	29,687	33,233	62,901
House	42	R. Wade	0.71	22,100	47,545	69,645	779	Residential	31,056	66,808	97,862
Service Station	41	Sun Oil Co.	1.10	93,070	54,300	140,370	1,659	Commercial	85,460	49,733	135,393
House	39	A. Martinelli	6.94	53,880	57,920	111,800	1,250	Residential	7,764	8,346	16,110
Vacant Land	27	E. Sachs	5.92	49,435	0	49,435	553	Industrial	8,348	0	8,348
House	25	M. Steffen	1.06	23,395	53,195	76,790	858	Residential	22,363	50,417	72,780
Primarily Vacant Land	7	E. Sachs	120.06	856,495	10,835	866,530	9,130	Industrial	7,134	84	7,217
House	1	R. Eyler	0.43	1,875	0	1,875	21	Residential	4,360	0	4,360
Map 46											
House	13	J. Shellheimer	0.27	16,175	40,545	56,720	634	Residential	59,916	150,182	210,096
House	12	C. Tingler	0.26	13,130	12,210	27,340	306	Residential	50,273	47,926	105,299
House	11	A. Martinelli	0.26	13,630	7,695	21,325	238	Residential	52,095	29,657	82,132
House	2	C. Shirley	0.34	15,985	24,300	39,985	447	Residential	45,453	71,915	117,368
House	1	C. Tingler	0.64	16,790	15,995	32,785	367	Residential	26,214	24,973	51,187
Warehouse	8	M. Sachs	12.00	240,000	140,445	380,445	4,253	Industrial	20,000	11,704	31,704
Warehouse	2	E. Sachs	24.19	179,380	66,710	246,090	2,751	Industrial	7,415	2,758	10,173
Vacant Land	1	E. Sachs	4.62	71,250	0	71,250	797	Industrial	15,422	0	15,422
Total			263.22	$3,167,179	$4,535,045	$7,702,224	$85,350				

EXHIBIT 6.11

ANNE ARUNDEL SITE
REAL ESTATE TAX MAP

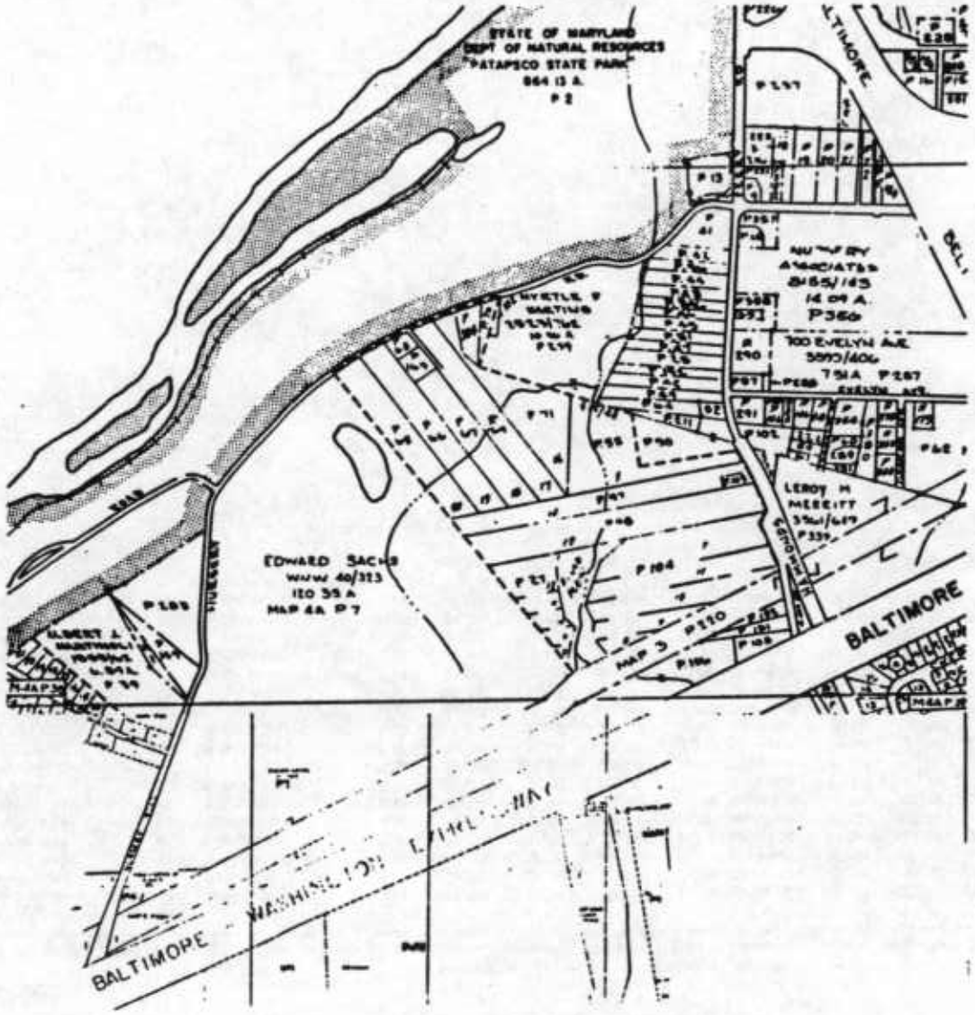


EXHIBIT 6.12

NORTHERN ANNE ARUNDEL COUNTY SITE
REAL ESTATE TAX ANALYSIS
(Continued)

11. CURRENT USE NEARBY

Description	Parcel	Owner	Acres	1986 Full Cash Value: Land	1986 Full Cash Value: Improvement	1986 Full Cash Value: Total	Estimated Taxes	Current Zoning	FCV Per Acre: Land	FCV Per Acre: Improvement	FCV Per Acre: Total
Properties Nearby (Map 11:											
Office & Warehouse	218	S. Albrecht	2.65	$112,530	$412,800	$525,330	$5,873	Industrial	$155,000	$201,760	$256,760
Service Station	41	Sun Oil Co.	1.10	93,870	54,500	148,370	1,659	Commercial	85,663	49,733	135,399
Industrial Park	617B	Arundel Corp	3.22	177,045	1,465,570	1,642,615	18,364	Industrial	55,000	455,287	510,287
Industrial Park	617D	Arundel Corp	5.02	319,860	958,890	1,278,750	14,296	Industrial	54,990	164,877	219,873
Industrial Park	617E	Crow Maryland	5.06	278,000	1,578,770	1,856,850	20,759	Industrial	55,000	312,257	367,257
Restaurant	290	M. Winkler	1.30	77,760	194,165	271,925	3,040	Industrial	60,000	149,819	209,819
Three Warehouses	315	J. Sherman	5.42	160,000	561,750	721,750	8,069	Commercial	29,521	103,646	133,167
Two Warehouses	317	J. Sherman	3.71	148,280	665,360	813,640	9,096	Commercial	40,000	179,487	219,487
Storage Garage	116	B. Rappaport	0.88	29,990	71,000	100,990	1,129	Industrial	34,002	80,499	114,501
Truck Terminal	297	J. Barth	4.12	164,835	232,015	396,850	4,437	Industrial	40,000	56,295	96,295
Warehouse & Office	171	S. Aaron	3.61	163,400	439,010	602,410	6,735	Industrial	45,254	121,586	166,840
McDonalds Restaurant	224	McDonalds Corp	0.50	21,100	32,610	53,790	601	Industrial	42,360	65,220	107,580
Bank	14	Carmer Associates	0.30	24,915	212,910	237,825	2,659	Commercial	82,228	702,673	784,901
Office & Warehouse	175	J. Zimmerman	6.26	228,415	677,630	905,445	10,122	Industrial	36,517	108,238	144,755
Warehouse	299	A. Tavione	1.60	25,000	151,245	177,045	1,979	Industrial	16,144	94,641	110,785
Office/Warehouse	237	R. Marshall	4.87	364,875	2,184,000	2,548,875	28,495	Industrial	75,000	448,921	523,921
Office/Warehouse	287	E. Burton	7.47	410,740	2,789,260	3,200,000	35,774	Industrial	55,000	373,495	428,495
Average			3.37	$164,800	$745,934	$910,734	$10,182		$50,688	$213,790	$264,478

EXHIBIT 6.13

NORTHERN ANNE ARUNDEL COUNTY SITE
REAL ESTATE TAX ANALYSIS
(Continued)

III. POTENTIAL ALTERNATIVE DEVELOPMENT

Amount Developed: 75.00%

Description	Parcel	Owner	Acres	1986 Full Cash Value Land	Improvement	Total	Estimated Taxes	Current Zoning	FCV Per Acre Land	Improvement	Total
Undeveloped Properties:											
Vacant Land	239	H. Harting	10.96	$74,775	$0	$74,775	$836	Industrial	$6,825	$0	$6,825
Vacant Land	27	E. Sachs	3.92	49,433	0	49,433	553	Industrial	8,340	0	8,340
Priearily Vacant Land	7	E. Sachs	120.04	856,495	10,035	866,530	9,130	Industrial	7,134	84	7,217
Total			136.94	$980,705	$10,035	$990,740	$10,319				
Alternative Developments:											
Industrial Part	239	Hypothetical Developer	10.96	$416,677	$1,773,852	$2,189,529	$24,478	Industrial	$38,000	$215,790	$254,470
Industrial Part	27	Hypothetical Developer	3.92	225,129	958,433	1,183,561	13,232	Industrial	58,000	215,790	266,470
Industrial Part	7	Hypothetical Developer	120.00	4,561,879	19,421,120	23,983,007	268,118	Industrial	38,000	215,790	266,470
Total			136.88	$5,203,404	$22,152,613	$27,356,097	$305,827				

Taxes Before Alternative Development for all Parcels: $15,350

Less Taxes for Undeveloped Properties: 10,319

Plus Taxes for Alternate Developments: 305,827

Equals Potential Taxes $300,859

Police

The City of Baltimore Police Department provides internal security and traffic control for all events at Memorial Stadium. As a consequence of these services, administrative and arrest costs also are incurred. The estimated total police costs for the 1984 Orioles season and the 1983 Colts season are presented below:

Sports Supported Expenditures
By Baltimore Police Department

1984 Orioles Baseball Season

Overtime and Supervision	$308,942
Traffic Control	162,134
Proximal Post Security	89,820
Administrative Costs	7,647
Arrest Costs	11,952
Total	$580,495

1983 Colts Football Season

Overtime and Supervision	$ 65,616
Traffic Control	28,906
Proximal Post Security	8,448
Administrative Costs	1,280
Arrest Costs	5,806
Total	$110,056

Source: City of Baltimore, Department of Finance, Bureau of the Budget

The nature of the above costs are described below:

- Overtime and Supervision - These figures reflect the cost of the overtime deployment and supervision of police personnel at Memorial Stadium. The per game cost for football games is higher than baseball games. This is because approximately 40 and 80 overtime officers are required for the baseball games and football games respectively.

- Traffic Control - These figures reflect the cost of directing and controlling vehicular traffic to and from Memorial Stadium.

- Proximal Post Security - These figures reflect the cost of deploying officers on special posts near the stadium during every sporting event for crime suppression purposes.

- Administrative Costs - These figures reflect the approximate cost of soliciting volunteers and preparing the rosters for coverage of the 82 baseball and football games (approximately 4,000 officers assignments). Also included are the costs for assigning and deploying Traffic Division personnel to control traffic.

- Arrest Costs - These figures reflect the cost of processing those individuals arrested inside Memorial Stadium during the various sporting events. These arrests are approximately 195 for a baseball season and 21 for a football season.

Based on these historical cost figures and anticipated pay raises, a per game rate was estimated. For baseball the rate is $7,600 per game; and for football and other events, the rate is $9,000 per game or event. Thus, the police costs in the development frameworks were calculated based on the City of Baltimore per game rates. It was assumed that police level of support and unit costs would be approximately the same for each potential site location.

Fire

The City of Baltimore Fire Department provides paramedic service to stadium events. One or two paramedic units are assigned to Memorial Stadium events based on the size of the crowd. For crowds under 40,000 people, one unit is assigned. For crowds over 40,000 people, two units are assigned. A paramedic unit consists of one ambulance and two licensed paramedics.

Based on the current fully fringed wage rate of experienced paramedics, a per game rate was estimated. For baseball, football, and other events, the rate is $103 per game. It was assumed that the level of services and unit costs would be approximately the same for each potential site location. The paramedic (Fire) costs in the development frameworks were calculated based on the current City of Baltimore game rates.

Traffic and Transit

The City of Baltimore Traffic and Transit Department (T&T) provides parking control and signal and signage support to Memorial Stadium events. This support includes a T&T patrol for each game. A patrol consists of one transportation associate and one investigator. These individuals are responsible for ticketing improperly parked vehicles. Other traffic and transit personnel are used to run signal lights and change approximately 450 variable message signs. Based on fully fringed salaries, a T&T rate of $1,230 per game was estimated for Memorial Stadium.

The cost of these T&T services is more than offset by parking citation revenue. For the 1985 Orioles season, approximately $180,000 was generated in citation revenue. Based on this figure, a citation revenue rate of $2,210 per game was estimated for Memorial Stadium.

Traffic and transit costs and revenues should be lower for each potential site location. This is because each site would have better access and egress and more parking facilities than Memorial Stadium. Fans, therefore, should have an easier time finding parking, and consequently there will be fewer improperly parked vehicles. Based on this, T&T cost and citation rates were assumed for each potential site. Since the Camden Yards site is an urban location with residential, commercial and industrial land uses adjacent to the stadium site, its rates are likely to be higher than the two suburban sites. For the Camden Yards site, the T&T cost and citation revenue rates were assumed to be 50% of the Memorial Stadium rates. For the Lansdowne and Anne Arundel sites the T&T cost and citation revenue rates were assumed to be 25% of the Memorial Stadium rates.

Public Works

The City of Baltimore Public Works' Department of Abandoned Vehicles provides towing service at Memorial Stadium events. Personnel from this department relocate vehicles out of tow-a-way zones. Vehicles are placed on St. Paul Street, and are ticketed by Traffic and Transit. The vehicle owner is not charged for the towing.

The number of tow trucks and staff assigned to a Memorial Stadium event is dependent on the crowd size.

- For events under 25,000 people, one truck and two men are assigned;
- For events over 25,000, two trucks and one man for each truck are assigned;
- For crowds over 40,000, three or more trucks and one man for each truck are assigned.

On the average, for Orioles games, two trucks and two men are assigned. Crowds at Orioles games average 25,000 people.

A per game cost for towing services of $272 was estimated based on fully fringed wage rates and hourly truck rental fees. Towing services at each potential site location should be lower than at Memorial Stadium because of better access and parking. For the Camden Yards site, the rate for towing services was assumed to be 50% of the Memorial Stadium per game rate. For the Lansdowne and Anne Arundel sites, 25% of the Memorial Stadium rate was used, since these sites are in undeveloped locations that do not have as many tow-away zones as an urban location.

CURRENT FISCAL IMPACTS

Based on the general assumptions that were discussed in the previous section, the current fiscal impacts for Memorial Stadium and each potential site were assessed. These impacts are presented in Exhibit 6.14.

For Memorial Stadium, total revenues and expenses to Baltimore City are $2.5 million and $2.4 million respectively. The corresponding net fiscal impact thereby is $110 thousand. It should be noted that the rent revenue of $1.1 million is extremely cyclical. This is because it is derived from the profit sharing lease between the City and the Orioles. If the Orioles incur a loss, there is no rent to the City. This did occur in 1982.

For the three potential sites, the fiscal impact to the local subdivisions is generated by local real estate tax revenue only. The Camden Yards site had the highest tax revenues of $493 thousand. The Lansdowne and Anne Arundel sites were approximately $400 thousand lower, with tax revenues of $128 thousand and $86 thousand respectively.

The current impacts for Memorial Stadium and the current Camden Yards site can be added together to get a total impact to Baltimore City. This impact is $603 thousand.

SUMMARY OF FISCAL IMPACTS

Based on the key assumptions which were previously discussed, the fiscal impacts to the local jurisdiction for the four development frameworks were assessed. These impacts are presented in Exhibits 6.15, 6.16, and 6.17.

In Exhibit 6.15, the fiscal impact of a baseball only stadium and the renovation of Memorial Stadium for baseball is presented. In this analysis, baseball is played in new stadiums on the three potential sites, and NFL football is played in a renovated Memorial Stadium. The net fiscal impact to Memorial Stadium is $136 thousand. For the Camden Yards, Lansdowne, and Anne Arundel sites, the net fiscal impact is ($140) thousand, ($300) thousand, and ($200) thousand respectively. The impact at Camden Yards is $100 to $150 thousand higher than the other two sites because of higher parking tax and citation revenues.

Exhibit 6.16 presents the fiscal impact of a multipurpose stadium for both baseball and football. In this analysis, Memorial Stadium is not renovated. Therefore, no sports are played there, and there is no fiscal impact. For the Camden Yards, Lansdowne, and Anne Arundel sites, the net fiscal impact is $28 thousand, ($176) thousand, and ($36) thousand respectively. The impact of Camden Yards is $100 to $150 thousand higher than the other two sites because of higher parking tax and citation revenues.

The fiscal impact of alternate real estate development on Memorial Stadium and the three potential sites is presented in Exhibit 6.17. The fiscal impact is generated solely by real estate tax revenue. Camden Yards has

EXHIBIT 6.14

CURRENT FISCAL IMPACTS ON LOCAL JURISDICTIONS
(1985 Dollars in Thousands)

		New Stadium Sites		
	Memorial Stadium Baltimore City	A Camden Yards Baltimore City	B Lansdowne Baltimore County	C Northern Anne Arundel County Anne Arundel County
REVENUES:				
Rent	$1,100	$ -	$ -	$ -
Admission Taxes	1,200	-	-	-
Parking Taxes	60	-	-	-
Citation Revenue	180	-	-	-
Real Estate Taxes	-	493	128	86
Subtotal	$2,540	$ 493	$ 128	$ 86
EXPENSES				
Direct Stadium Expenses	$1,700	-	-	-
Other Related Expenses				
Police	600	-	-	-
Fire	10	-	-	-
Traffic and Transit	100	-	-	-
Public Works	20			
Subtotal	$2,430	-	-	-
Net Fiscal Impact	$ 110	$ 493	$ 128	$ 86

EXHIBIT 6.15

FISCAL IMPACTS ON LOCAL JURISDICTIONS
BASEBALL ONLY STADIUM AND RENOVATION OF MEMORIAL STADIUM FOR FOOTBALL
(1985 Dollars in Thousands)

		New Stadium Sites		
	Memorial Stadium Baltimore City	A Camden Yards Baltimore City	B Lansdowne Baltimore County	C Northern Anne Arundel County Anne Arundel County
REVENUES				
Rent	$ -	$ -	$ -	$ -
Admission Taxes	180	290	290	290
Parking Taxes	40	140	0	100
Citation Revenue	20	90	40	40
Real Estate Taxes	-	-	-	-
Subtotal	$ 240	$ 520	$ 330	$ 430
EXPENSES				
Direct Stadium Expenses	$ -	$ -	$ -	$ -
Other Related Expenses				
Police	90	590	590	590
Fire	1	10	10	10
Traffic and Transit	10	50	20	20
Public Works	3	10	10	10
Subtotal	104	660	630	630
Net Fiscal Impact	$ 136	($ 140)	($ 300)	($ 200)

EXHIBIT 6.16

FISCAL IMPACTS ON LOCAL JURISDICTIONS
MULTIPURPOSE STADIUM FOR BASEBALL AND FOOTBALL
(1985 Dollars in Thousands)

		New Stadium Sites		
	Memorial Stadium Baltimore City	A Camden Yards Baltimore City	B Lansdowne Baltimore County	C Northern Anne Arundel County Anne Arundel County
REVENUES				
Rent	$ -	$ -	$ -	$ -
Admission Taxes	-	530	530	530
Parking Taxes	-	190	-	140
Citation Revenue	-	100	50	50
Real Estate Taxes		-	-	
Subtotal	$ -	$ 820	$ 580	$ 720
EXPENSES				
Direct Stadium Expenses	$ -	$ -	$ -	$ -
Other Related Expenses				
Police	-	710	710	710
Fire	-	10	10	10
Traffic and Transit	-	60	30	30
Public Works	-	12	6	6
Subtotal	-	792	$ 756	$ 756
Net Fiscal Impact	$ -	$ 28	$ (176)	($ 36)

EXHIBIT 6.17

FISCAL IMPACTS ON LOCAL JURISDICTIONS
ALTERNATIVE REAL ESTATE DEVELOPMENT
(1985 Dollars in Thousands)

		New Stadium Sites		
	Memorial Stadium Baltimore City	A Camden Yards Baltimore City	Lansdowne Baltimore County	C Northern Anne Arundel County Anne Arundel County
REVENUES				
Rent	$ -	$ -	$ -	$ -
Admission Taxes	-	-	-	-
Parking Taxes	-	-	-	-
Citation Revenue	-	-	-	-
Real Estate Taxes	698	947	1,151	381
Subtotal	$ 698	$1,947	$1,151	$ 381
EXPENSES:				
Direct Stadium Expenses	$ -	$ -	$ -	$ -
Other Related Expenses				
Police	-	-	-	-
Fire	-	-	-	-
Traffic and Transit	-	-	-	-
Public Works	-	-	-	-
Subtotal	-	-	-	-
Net Fiscal Impact	$ 698	$1,947	$1,151	$ 381

the highest net fiscal impact of $1.9 million. If the Memorial Stadium impact of $698 thousand is added to Camden Yards, the total impact to Baltimore City is $2.6 million. The impact on Lansdowne is $1.2 million; and for Anne Arundel, the impact is $0.4 million, substantially less than the other sites.

The key part of this fiscal analysis is the change in fiscal impact of the development frameworks from the current fiscal impact. This change is the true incremental impact that would be felt by the local jurisdiction. Exhibit 6.18 presents this change.

For the baseball only stadium and renovation of memorial stadium for football scenario (Exhibit 6.15), the incremental change is best for Anne Arundel County and worst for Baltimore City. In each case, however, the impact is negative to the local jurisdiction. This incremental impact to Baltimore City, Baltimore County, and Anne Arundel County, is ($607) thousand, ($428) thousand, and ($286) thousand respectively.

The impact on the local jurisdictions is slightly better for the multipurpose stadium scenario (Exhibit 6.16), but is still negative to each jurisdiction. The impact is still best for Anne Arundel County and worst for Baltimore City. This incremental impact to Baltimore City, Baltimore County, and Anne Arundel County is ($575) thousand, ($304) thousand, and ($122) thousand respectively.

The change from the current impact tells a similar story for the alternative development scenario (Exhibit 6.17), but in a different way. Here the fiscal impact is best for Baltimore City if alternative development occurs on Camden Yards and Memorial Stadium. This incremental impact is $588 thousand for Memorial Stadium, and $1.5 million for Camden Yards. The incremental impact of the Lansdowne site to Baltimore County is $1.0 million, $500 thousand lower than the Camden Yards. For Anne Arundel County, the incremental impact is $295 thousand, substantially lower than the other sites.

SITE ACQUISITION COST

Site acquisition costs were estimated using FCV. The FCV of parcels within each site are one to three years old. Therefore, a 6% inflation factor was applied. A contingency factor of 10% also was applied. The contingency factor is for potential price escalat'on which would be caused by demand for the parcels as a stadium site. The FCV and estimated cost of each site are in Exhibit 6.19.

EXHIBIT 6.18

CHANGE IN FISCAL IMPACT ON LOCAL JURISDICTIONS
(1985 Dollars in Thousands)

		Baseball Only Stadium & Renovation of Memorial Stadium For Football		Multipurpose Stadium For Baseball and Football		Alternative Real Estate Development	
	Current Fiscal Impact	Impact	Change From Current	Impact	Change From Current	Impact	Change From Current
Memorial	$110	$136	$ 26	$ 0	($110)	$ 698	$ 588
Site A Camden Yards	493	(140)	($633)	28	($465)	1,947	1,454
Total Baltimore City	$603	($ 4)	($607)	$28	($575)	$2,645	$2,042
Site B Baltimore County	$128	($300)	($428)	($176)	($304)	$1,151	$1,023
Site C Anne Arundel County	$ 86	($200)	($286)	($ 36)	($122)	$ 381	$ 295

EXHIBIT 6.19

Estimated Site Cost

	New Stadium Sites		
	A Camden Yards Baltimore City*	B Lansdowne Baltimore County	C Northern Anne Arundel County Anne Arundel County
Current FCV of Land & Improvements	$28,245,080	$ 9,023,510	$ 7,702,224
Inflation Factor @ 6%	1,694,705	541,411	462,133
Contingency Factor @ 10%	2,993,979	956,492	816,436
Subtotal	$32,933,764	$10,521,413	$ 8,980,793
Demolition and Relocation	4,940,000	1,052,000	898,000
Total Cost	$37,873,764	$11,573,413	$ 9,878,793
Cost per Acre	$ 776,377	$ 44,140	$ 37,530

Notes:

* FCV of current land and improvements is less Lot 1 in Block 873, Lot 1 in Block 679, and Lots 1 and 2 in Block 680. It is assumed that ownership of these lots would remain with the City.

OTHER ECONOMIC FACTORS

There are two principal kinds of economic impacts that have been qualitatively addressed for each potential site. The first factor is outside fan spending; and the second factor is employment generated or lost.

The first factor, outside spending, is comprised of fan spending at hotels, restaurants, stores, and other businesses that would not occur without the stadium. Such spending would generate sales tax revenue, all of which would go to the state. Total outside spending should be equivalent for each stadium location. Each site location is in reasonable driving distance to restaurants, motels, and retail stores. Therefore, a fan that is traveling to a game and plans to have dinner and stay at a hotel, will make these expenditures regardless of the site location. However, the distribution of the spending between each local jurisdiction may not be the same. More outside spending is likely to occur in Downtown Baltimore if Camden Yards were the selected site. However, there would not likely be a loss in spending to the downtown Baltimore area if the Lansdowne or Anne Arundel sites are chosen because:

- There is minimal commercial development around Memorial Stadium. Therefore, outside spending is currently dispersed to the region, including downtown Baltimore.
- The Lansdowne and Anne Arundel sites also have minimal commercial development and are in reasonable driving time to downtown. Therefore, the downtown area should not lose its share of current outside spending.

The second factor, employment gained or lost, has a ripple effect on the economy of the local jurisdiction and region. Employment generates state income taxes, and induces spending and sales tax revenue.

The potential impact on employment by each site is significantly different. For Camden Yards, Lansdowne, and Anne Arundel, the approximate number of jobs displaced would be 446, 198, and 60 respectively. These jobs that are displaced may relocate in another local jurisdiction or potentially outside of the region. If additional surface parking south of Hamburg Street is provided at the Camden Yards site rather than the structured parking, an additional 1,030 jobs would be displaced at Camden Yards.

The state and local income taxes that would be generated by these jobs was estimated to be $639,000, $283,000 and $86,000 for Camden Yards, Landsowne, and Anne Arundel, respectively. It is not possible to establish the income tax impact on specific local jurisdictions because the residency distribution of the employed workers is undeterminable. Since all three potential sites are located within 10-15 minute travel times of each other, the residency distribution of workers is likely to be similar. However, it is posible that the residency distribution for the Camden Yards site could differ somewhat because of the public transportation network oriented toward downtown Baltimore.

EXHIBIT 6.20

POTENTIAL DISPLACED EMPLOYMENT AT
CAMDEN YARDS AND LANSDOWNE SITES

Camden Yards

Organization	Number of Employees
B. Green	160
Amotex Plastics	10
Lee Furniture	22
Donut Delight	60
Southern Seafood	25
RETS School	40
Inland Leidy	40
Heat and Power	35
Monumental Hotel Supply	9
Ramcorp	5
Baltimore Steam Co.	40
Total	446

Lansdowne

Organization	Number of Employees
Beltway Motel, Inc.	25
J&L Autoglass	3
Helwigs Lawn Mower	N/A
Mushroom Trucking Co.	38
Air Brakes and Controls, Inc.	15
AAA Trucking	40
Nueva Engineering, Inc.	52
State Equipment Sales	25
Security Ford Tractor Co.	N/A
Total	198

N/A = Not available

Exhibit 6.20 shows the estimated employment that would be displaced at Camden Yards and Lansdowne. The jobs displaced at Anne Arundel would be at a service station and three warehouses.

A related issue to be considered, is the jobs that would be created by the Stadium alternate development on these sites. It is difficult to distinguish between the sites. However, for each site, alternative development would likely generate more jobs and income taxes than a stadium. Similar to the ojbs displaced issue, the income tax imposed on the local jurisdiction is unknown because the residency distribution of the workers is undeterminable.

Upon completion of the site analysis and design, the sites were ranked and a recommended site was determined. The ranking of the site was performed with an evaluation criteria matrix.

SITE COMPARISON MATRIX

EVALUATION CRITERIA

Seven major categories were identified as well as 15 sub-categories in order to evaluate issues for each site and rank each of them on a scale from excellent to unacceptable. The categories are as follows:

A. Access

1. Traffic: The ability of the surrounding street system to accommodate peak traffic and transit flows around the site during ingress and egress periods.

2. Traffic Conflicts: Impact of stadium traffic on adjacent traffic in surrounding areas.

3. Traffic Impact on Adjacent Areas: How local neighborhoods are affected by stadium parking and traffic.

4. Parking: The ability to develop the required parking within the given site area.

5. Pedestrian: Category that scores the quality of the pedestrian experience from parking until final destination is reached.

6. Public Transportation: Availability of public transportation to serve each site.

B. Engineering

1. Geotechnical, Utilities and Ground Water: The availability of utilities to provide adequate capacities for the facility and the ability of the soil to support a major stadium.

C. Size and Fit

1. Can Accommodate Optimum Physical Sizing: This includes sizing of parking, service, vehicular circulation and the stadium structure itself.

2. Expandability: The availability of land for future stadium expansion or additional facilities.

D. Planning Considerations

1. Compatibility to Existing or Future Adjacent Uses: This assesses the impact the facility will have on existing or future adjacent land use.

2. Potential for On-site Adjacent Outdoor Recreational and/or Civic/Cultural Uses: The ability for these uses to be accommodated next to the stadium.

3. Potential for "Image" or Landmark Setting: This assesses the visual quality of the site with the stadium as it affects the surrounding environment, and as seen by the pedestrian or from a vehicle.

E. Development Costs

1. Cost: Comparative cost of development including construction costs of stadium and site, site acquisition, relocation and demolition, contingencies, design fees, inflation provisions and financing costs.

F. Fiscal Impact

1. The likely impact on revenues received and expenses incurred by the local jurisdiction due to the construction of the stadium, as compared to current cash flows, and as compared to the revenues and expenses resulting from development of the site from other "higher and better" uses.

2. The potential for other secondary economic impacts as compared to current land uses of the site and as compared to other "higher and better" uses.

G. Land Acquisition

1. Timing/Availability: The availability of particular sites to be acquired and what affect this has on the timing and development of the facility.

2. Ownership: The number and type of ownerships of a particular site.

RAW SCORE RANKING

A brief discussion on why each rank was made for each evaluation criteria is below. This discussion is based on the findings which are presented in previous sections of this report.

A. Access

1. Traffic: With a 60-minute time period for vehicular ingress and egress from a professional sports event as an ideal goal, the following summarizes the discharge times which can be achieved. The expected egress time from Camden Yards is less than 60 minutes which is superior to the other two stadium sites. Lansdowne is acceptable for a Phase I baseball crowd of 50,000 with an egress time of less than 1.4 hours. A Phase II football crowd of 70,000 could discharge in less than 2 hours. The Anne Arundel Phase I baseball discharge time is slightly larger than Lansdowne at 1.5 hours. A Phase II football crowd would discharge within 2 hours. The primary constraint for ingress and egress times for Lansdowne and Anne Arundel is the capacity of the existing highway network rather than the highway interchanges.

2. Conflict with other events: A Phase I baseball stadium will create a minimum of 80 event days, most of which are evening weekdays, Saturday night and Sunday afternoon games. A Phase II stadium would create a minimum of 90 event days. At Lansdowne and Anne Arundel the only major conflict might be during rush hour traffic for an early evening double header. Typically, however, baseball starts late enough and will not conflict. At Camden Yards, however, there is a potential for more conflicts because of its proximity to the Inner Harbor, Convention Center and Civic Center. Successful arenas and convention centers can have at least 100 to 200 event days per year.

3. Traffic impact on adjacent areas: All stadiums have a significant impact on surrounding areas because of the inherent volume of vehicles generated by events. Camden Yards relies on the existing downtown street network to circulate vehicles through and around the existing residential and commercial areas in the surrounding area. Consequently, residential streets must be blocked off during event days to prevent stadium traffic from circulating through them. Either case presents a hardship and/or conflict with neighbors. At the suburban sites, Lansdowne and Anne Arundel, neighborhoods will be less affected since stadium traffic will be directed to highways by a few major surface streets and by direct access from the stadium parking lot. At Lansdowne, Washington Boulevard and Caton Streets will feed directly to highways therefore minimizing traffic through the neighborhood to the northeast.

4. Parking: Ideally, parking should symmetrically surround the stadium with surface lots with required area based on full capacity. Lansdowne and Anne Arundel both meet this requirement of adequate area. However, the parking is not symmetrically balanced around the stadium due to site constraints. The Camden Yards existing and new parking is almost exclusively located to the north and northeast, unequally balanced. At Camden Yards, various constraints preclude a symmetrically surface parking condition for 17,500 cars for capacity Phase II conditions. These constraints include: the cost of acquiring land, adjacent existing residential neighborhoods, existing public and private parking already available, potential future development of adjacent parcels, and the existing street network. Even though Camden Yards yields adequate potential parking capacity, this site does not rank as high as the others because: other simultaneous events at the arena and the convention center would conflict with prime stadium parking, the concentration of parking only to the north and northeast, and the inconvenience of parking in structures as opposed to lots.

5. Pedestrians: This category rates the experience of the pedestrian walking from the car to the stadium. At the suburban Lansdowne and Anne Arundel sites the pedestrian walks through a surface parking lot uninhibited by cars arriving after and parking behind him. At Camden, spectators must cross city streets and intersections at multiple locations. The safety and security of the pedestrian is inferior at Camden.

6. Public transportation: Camden ranks high because of existing regularly scheduled and ample bus transit which serves the downtown and Inner Harbor area. Lansdowne and Anne Arundel would have to be serviced by specially arranged public transportation to provide the level of service that is available at Camden. Camden is also within walking distance of two Metro subway stations providing service to event goers in north Baltimore and Baltimore county.

B. Engineering:

1. The Camden Yards site presents the best of the three sites studied because all existing utilities of adequate capacity were available within reasonable distances. Existing soil test borings for Camden Yards indicated no unusual soil conditions for that area. Soil borings were unavailable for Lansdowne and Anne Arundel, and it was assumed that no unusual conditions exist at those sites. Both Anne Arundel and Lansdowne require lengthy sewer connections to provide adequate capacity. Anne Arundel also has existing high voltage power lines crossing the southern portion of the site which present a visual obstruction to the stadium and cannot economically be relocated.

C. Size and Fit:

1. Optimum physical sizing: All three sites accommodate the proposed configuration of the stadium and do not require a different stadium design for each site. However, the two suburban sites, Lansdowne and Anne Arundel allow more perimeter circulation around the stadium and allow for better separation of vehicular and pedestrian movement. Anne Arundel is slightly more confined than Lansdowne because of low lying lands surrounding the site. All three sites will accommodate the same orientation.

2. Expandability: The Camden Yards site does not present a condition for an easy expansion of the facility. Seating capacity can be increased beyond 70,000 but the required increase in parking capacity would most likely be structured. The constraints created by the surrounding well developed land at the downtown site also limit other types of facilities being constructed adjacent to the stadium. Anne Arundel parking will be difficult to expand because of low lying land to the north and west on the Patapsco River basin and the Baltimore Washington Expressway. On-site parking could be expanded at a Lansdowne stadium. The land surrounding both the Anne Arundel site and the Lansdowne site allow for ample development of complimentary facilities and their required parking.

D. Planning Considerations:

1. Compatibility to existing or future adjacent uses: A large stadium complex can present major conflicts with existing adjacent land use. At Camden Yards, the stadium is not compatible with the existing residential neighborhoods and can conflict with traffic generated by downtown businesses. Some downtown businesses such as restaurants and hotels, however, are compatible with a stadium and will support each other. The residential neighborhood at Lansdowne and Anne Arundel are not compatible but conflict to a lesser degree because they are a greater distance from the site, less dense and less inclined to traffic interruptions.

2. Potential for on-Site adjacent outdoor recreational and/or civic/cultural uses: The vast land and parking areas produced at Lansdowne and Anne Arundel offer ample space for other various activities at nonstadium event times. The smaller site at Camden, however, limits itself to smaller on-site nonstadium events. The limitations of expandability of all the sites would deter many events requiring nonstadium related structures and spaces.

3. Potential for image or landmark setting: As a significant and dominant structure in the metropolitan area, the stadium location, design and visibility will create its image. At Lansdowne, the visual access from motorists on the Baltimore Beltway and I-95 will produce a visibly prominent development and a proportionally dominant structure. A Camden Yards stadium would be highly visible due to the density and activity of the surrounding area. Its visibility, however, is mostly confined to the immediate surrounding area due to downtown structures in the vicinity. Anne Arundel is least visually accessible and has the visual problem of the high voltage power lines.

E. Development Costs

1. Total project cost: The Camden site is significantly more expensive than the Lansdowne and Anne Arundel sites.

F. Fiscal Impact

1. Impact of revenues received and expenses incurred: As compared to the current land use or alternative development, stadium development is a negative impact to the local jurisdiction for which ever site is selected. For the three sites, Camden would be significantly more costly to the local jurisdiction than Lansdowne or Anne Arundel. Alternative development is a positive impact to the local jurisdiction. For the three sites, Camden has the highest upside potential with alternative development.

2. Other secondary economic impacts: Each site should offer the same potential for outside fan spending to the region. It is likely that more downtown Baltimore fan spending would occur with the Camden site. It also is likely that the same or higher levels of fan spending would occur in downtown Baltimore with the Lansdowne or Anne Arundel sites as compared to fan spending resulting from the current Memorial Stadium site. This is because these sites are only a 10 to 15 minute drive to and from downtown Baltimore. In terms of present employment, the potential displacement of jobs is greatest at Camden. For each site, alternative development would create more jobs than a stadium.

G. Land Availability

1. Timing/availability: Lansdowne and Anne Arundel are better than Camden because most of their land is vacant; and their residential and commercial properties are on the outskirts of site boundaries. None of these properties appear difficult to relocate. The Camden site is being used commercially; several properties, like the steam plant, pose potential relocation problems. Also, Camden properties are appreciating in value rapidly due to Inner Harbor redevelopment; this could create negotiating delays.

2. Ownership: Lansdowne is best because land is primarily vacant and the type of commercial properties on site should pose no major relocation problems. Anne Arundel is similar to Lansdowne, but has more property owners to deal with. Camden is ranked lower because the businesses on site will be more difficult to relocate.

CRITERIA WEIGHTING

The seven major categories and sub-categories used were assigned rankings relative to perceived importance as shown on the weighted score comparison matrix. Particular emphasis was assigned to site access and development costs. The least importance was given to the engineering and size and fit categories.

The following weighted values were established for the evaluation criteria and are listed here in order of weight:

Access	25 (twenty-five percent)
Development Costs	25 (twenty-five percent)
Land Acquisition	15 (fifteen percent)
Planning Considerations	10 (ten percent)
Fiscal Impact	10 (ten percent)
Size and Fit	08 (eight percent)
Engineering	07 (seven percent)

RECOMMENDED SITE

The Lansdowne site ranked the highest. Anne Arundel and Camden Yards were second and third, respectively. The Lansdowne site was ranked higher or equivalent to the other sites for almost every evaluation criteria. Based on this ranking, the Lansdowne site was selected as the preferred site.

SITE ANALYSIS MATRIX

	RAW SCORE			WEIGHTED SCORE			
SITE	A	B	C	A	B	C	
A. ACCESS (25% Weight)							
1. Traffic (Ingress & Egress)	9	7	5	9	70	50	40
2. Traffic Conflicts	3	9	9	3	6	30	30
3. Traffic Impact on Adjacent Areas	3	7	8	4	12	80	32
4. Parking (Availability)	8	9	9	8	40	72	72
5. Pedestrian	8	9	9	1	4	9	9
6. Public Transportation	9	4	3	9	30	6	6
B. ENGINEERING (7% Weight)							
1. Geotechnical, Utilities & Groundwater	8	5	3	7	42	35	21
C. SIZE & FIT (8% Weight)							
1. Can Accommodate Optimum Physical Siting of Stadium	8	9	7	8	36	64	42
2. Expandability	1	8	6	8	8	16	12
D. PLANNING CONSIDERATIONS (10% Weight)							
1. Compatability to Existing or Future Adjacent Uses	4	6	6	4	36	24	24
2. Potential for On-site, or Adjacent Outdoor Recreational and/or Civic/Cultural Uses	4	6	6	8	6	12	12
3. Potential for "Image" or Landmark Setting	8	8	4	4	20	20	20
E. DEVELOPMENT COSTS (25% Weight)							
1. Total Project Costs	5	8	9	80	125	200	225
F. FISCAL IMPACT (10% Weight)							
1. Impact of Revenues Received and Expenses Incurred	3	6	7	6	16	30	35
2. Other Secondary Economic Impacts	4	7	7	6	30	35	35
G. LAND AVAILABILITY (15% Weight)							
1. Timing/Availability	3	7	7	9	27	63	63
2. Ownership	4	8	6	6	24	48	36
TOTAL SCORE	84	123	111	[illegible]	580	740	600

RAW SCORE RANKING

10. 9 Excellent
8. 7 Above Average
6. 5 Average
4. 3 Below Average
2. 1 Very Poor