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MINNESOTA STATE PLANNING AGENCY

A REPORT ON
SPORT STADIUM
PROPOSALS

PREPARED BY

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I. INTRODUCTION

At the request of Governor Wendell R. Anderson, the State Planning Agency has examined various proposals for constructing a new or remodeled sports stadium in the metropolitan area. This report describes the agency's activity to date and examines stadium proposals under discussion. The report is written to make available in a comprehensive manner as much relevant information as possible. The goal is to assist the governor and the legislature in deciding the important questions surrounding the stadium issue. This is a staff report, not a proposal by the State Planning Agency. It is a response to a request by Governor Anderson for staff work on various stadium proposals aimed at keeping the Minnesota Twins and the Minnesota Vikings in this state. As such, the report is a comparative analysis of stadium proposals under discussion since the fall of 1975.

II. SUMMARY OF FINDINGS AND RECOMMENDATIONS

- 1) A sports stadium can be constructed and operated without reverting to a property tax.
- 2) The economic feasibility of any stadium proposal depends upon project costs and stadium income. Income is tied closely to attendance since all direct stadium revenue is based upon attendance. It is impossible to predict attendance over long periods of time with confidence.
- 3) It does not appear realistic that a stadium can be financed solely through user charges. Additional funds almost assuredly will be required to subsidize the project during an indeterminate number of the years for which the bonds are sold. Sources of reserve funding must be available to offset deficits in years where stadium costs are greater than income. The reserve subsidies required could reach more than \$1.1 million per year.
- 4) Sources for annual reserve funding from non-property tax sources should be built into any legislative stadium proposal in order to assure that no property tax will be necessary. Possible sources include a 2% hotel-motel tax, metropolitan wide (\$1.3 million per year) and a 1¢ increase in the cigarette tax, state-wide (\$4.6 million per year).
- 5) The State Planning Agency has developed estimates of construction costs and related project costs for various single and multi-purpose stadium options. For mid-1977 bidding, the construction cost estimates are:
 - Remodel Memorial Stadium at the University of Minnesota by renewing the stadium, construct a second level of cantilevered stands along the sidelines,

providing 65,000 seats.

Construction Cost	\$27.4 million
Additional Costs	<u>9.6 million</u>
Total Cost	\$37.0 million

- Remodel and extend Metropolitan Stadium in Bloomington for football/soccer and baseball by renewing the basic stadium and removing the existing right and left field stands and outfield bleachers and extending the basic three tier structure to completely enclose the field, lowering the field, adding artificial turf, and providing 65,000 seats.

Construction Cost	\$22.9 million
Additional Costs	<u>7.5 million</u>
Total Cost	\$30.4 million

- Construct a new multi-purpose stadium which is completely round, contains three levels of seating and 65,000 seats.

In Industry Square:

Construction Cost	\$31.1 million
Additional Costs (excluding land)	<u>11.0 million</u>
Total Cost	\$42.1 million

In Bloomington:

Construction Cost	\$31.1 million
Additional Costs	<u>7.0 million</u>
Total Cost	\$38.1 million

- Construct a new football/soccer stadium in Bloomington which is oval shaped, contains three levels of seating, and includes 65,000 seats.

Construction Cost	\$25.9 million
Additional Costs	<u>9.1 million</u>
Total Cost	\$35.0 million

- 6) The construction cost estimates are not bids. They are for the design concepts described. Major deviations from the design concepts listed above cannot be made if construction is to be completed at the estimated cost. The same holds for a series of minor changes.
- 7) It appears that the major concern of the Minnesota Twins and the Minnesota Vikings is a stadium and location that attracts more attendance and greater profits.
- 8) Stadium discussions have been constrained due to a lack of information on the financial condition of the Minnesota Twins and Minnesota Vikings. Lacking such information, it is impossible to determine when either team might decide, or be forced, to move from the Twin Cities area, or whether, under the various options, the teams would be contributing their "fair share" toward a new stadium.
- 9) From a public policy perspective, it is wise to avoid duplication of sports facilities. The minimum number of publicly-owned sports facilities is most desirable. The needs of the University of Minnesota are important and the participation of the Gophers in a new or remodeled stadium desirable.
- 10) A multi-purpose stadium used by the Minnesota Twins, Vikings, and Gophers avoids duplication of facilities. It appears that in order for the Gophers to play in the facility, it must be located near the University of Minnesota.
- 11) Although there has been no systematic site selection, of the sites and facilities examined by the planning agency, a multi-purpose stadium located near the University of Minnesota

appears to be the best combination of site and facility.

- 12) A sports stadium in the metropolitan area is a metropolitan issue. The governance of the stadium should include metropolitan-wide representation and the governing body should be subordinate to the Metropolitan Council.
- 13) There appears to be no logical reason for combining the governance of a sports stadium with an arts funding authority. They should be separate functions performed by separate entities.

III. ASSUMPTIONS

- 1) The Minnesota Twins and the Minnesota Vikings will leave the state unless they are provided with an opportunity to realize greater profits. This translates to their need for a new or remodeled stadium.
- 2) From a public policy perspective, it is desirable to retain major league sports--Twins and Vikings--in Minnesota. There are both tangible and intangible advantages of having professional sports teams in Minnesota.
- 3) The benefits from a new or remodeled stadium accrue to both the public and private sectors. Therefore, both the public and private sectors should share in the costs of a new or remodeled stadium.
- 4) A new or remodeled stadium is essentially a metropolitan issue. Most direct and spinoff benefits accrue to the metropolitan area. The costs should be paid on the metropolitan level.
- 5) Sound public policy dictates keeping the public's investment in a stadium to a minimum. The type of stadium design concepts to be examined are those with modest, not extravagant levels of comfort for both the tenants and spectators.
- 6) The policy of financing a stadium project is to allow the private sector to fully participate in investing capital in the project.
- 7) The State Planning Agency did not examine providing a stadium with a dome because the agency learned from the Minnesota Twins

and the Minnesota Vikings that a dome was not important to them, the Select Joint Sports Facilities Subcommittee's work precluded consideration of a dome, and because of the high cost involved in a dome.

IV. APPROACH

The economic feasibility of a new or remodeled stadium depends upon total construction cost plus related project costs and financing mechanisms (bonding, annual income, operating costs, and public subsidies). Thus, a dependable assessment of economic feasibility greatly depends on estimates that are as realistic as possible of all elements of costs, income, and expenditures.

The State Planning Agency in late 1975 recognized that accurate estimates of construction costs of new and remodeled stadiums would be necessary to analyze various stadium options. Because stadium designs and locations proposed by various interested parties were based on different design specifications and were, in a sense, competing, they could not objectively be compared with one another. The agency contracted with an architectural firm to perform several services. These included:

- Examining the condition of Memorial and Metropolitan Stadiums and determining the feasibility of remodeling them;
- Analyzing various stadium designs in sufficient detail to produce reliable estimates of construction costs, and estimating costs for several variations of basic designs.

The designs include the following options:

- 1) Remodel Memorial Stadium at the University of Minnesota. (The educational facilities located inside the facility are to be the responsibility of others and excluded from the remodeling design.)

- 2) Remodel Metropolitan Stadium in Bloomington for football/soccer and baseball.
- 3) Construct a new football/soccer and baseball stadium to be located either at Industry Square or adjacent to Metropolitan Stadium in Bloomington.
- 4) Construct a new football/soccer stadium adjacent to Metropolitan Stadium in Bloomington.
- 5) Provide an estimate of the cost necessary to build a stadium similar to the domed stadium in Seattle/King County, Washington beginning in mid-1977.

The consultant used the same design specifications for these options in that they are equally comparable with one another. The common design specifications were agreed upon by State Planning Agency, leadership of the Select Joint Sports Facilities Subcommittee, and their staffs. (Design specifications are listed in Appendix A.) The consultant also researched construction cost estimates of various changes in design specifications, e.g., estimates for including footings for a dome and estimates for providing finishing additional private boxes. The consultant, Finch, Heery, Alexander, Barnes, Rothschild, and Pascal, Atlanta, Georgia, is an experienced architectural and engineering firm with proven abilities in designing numerous professional and collegiate stadiums across the country and constructing them on schedule and at estimated costs. Insofar as was feasible, the consultant developed

construction cost estimates for new and remodeled stadium options based upon the design specifications mentioned.

The construction cost estimates are expected costs. The agency is confident that the estimates are accurate - if the time schedule and design specifications are adhered to - but they are not bids. They could vary either up or down depending upon construction changes or construction delays. They do, however, provide what the State Planning Agency believes is a reliable basis for determining the orders of magnitude among various stadium options.

It is important to emphasize that the consultant's construction cost estimates are for a general design concept only. Given the design specifications, the construction timetable, and no changes in design, there is little doubt that the estimated construction costs are accurate. The danger is that there could be changes in design and delays in construction. Ultimately, any design most likely would entail changes to accommodate demands from major tenant(s), unless the legislature sets out clearly in law limits to facilities and equipment to be provided. Any such changes in the basic design concepts brought about through negotiating contracts between the stadium authority and the tenant(s) would require redesigning and reprogramming construction, costing additional redesigning fees, construction time and money.

V. COST ESTIMATES

This section summarizes and explains the design concepts and construction cost estimates provided by the consultant and examines additional project costs for each option.

Construction Cost: Estimated by State Planning Agency's consultant. All costs are estimated for mid-1977 bidding by taking the estimates derived for mid-1976 and inflating them 10%.

Additional Project Costs: Estimated by State Planning Agency for each option. Variety of sources used for estimates. Additional project costs are those capital costs reasonably necessary to make each stadium option functional in its particular location. Related capital improvements that would be desirable or consistent with proposed municipal development plans but which would occur without a stadium are excluded. Wherever possible, the private sector will pay additional project costs, e.g. finishing private boxes. Where additional project costs would most likely occur but realistic estimates are not available, an "unknown" is inserted in place of a dollar figure. Assumptions are footnoted. The total capital cost of each option is calculated by adding a specified percentage of the project cost for design fees (5%), legal fees (1%), a construction management fee (2½%), contingencies (5%), and interim financing (6½%). The total capital costs of each option were calculated in this same manner by the Select Joint Sports Facilities Subcommittee.

Remodel Memorial Stadium

Construction cost - \$27,476,000

Memorial Stadium can be remodeled making it an excellent football/soccer stadium. This could be accompanied by erecting a second level of stands behind both straight sections of the existing horseshoe-shaped stadium. The second level on the north side of the stadium would span University Avenue. Covered ramps would lead up to the second level on each side of the stadium. Space between the ramp structures and the stadium structure would be occupied by toilets and construction stands. The upper levels would contain 7,650 armchair seats each.

The lower level stands would be widened and armchair seats installed. The playing field would be lowered. In the west end zone, the Cook Hall end, an additional building would be constructed with stands seating 4,000, as well as providing locker rooms, team offices, and stadium club.

Total seating breakdown would be as follows:

Upper-level armchair seats	15,300
Lower-level armchair seats	13,700
Lower-level bench/back seats	13,300
End zone bench/back seats	9,100
End zone bench seats	13,000
Private boxes	<u>600</u>
Total seating	65,000

The remodeled stadium would have better viewing. Of the 65,000 seats, 40,600 (63%) would be considered sideline seats and 30,600 (48%) would be located between the goal lines. Artificial turf, 61 private boxes, and 1 roughed press box on the south side, upper level of the stadium, are included

in the construction cost. The remodeled stadium meets all design specifications except providing for the full number of armchair seats and the full number of private boxes.

Estimated construction time would be approximately 20 months. Construction cost estimates were derived by calculating the cost per seat of two similar stadium additions previously constructed by the consultant and translating the cost to the Minneapolis/St. Paul area. Additional remodeling costs were added to meet other design specifications. The costs were estimated for December, 1975 and projected for mid-1977 bidding.

Additional Project Costs - \$9,689,000

Additional projects costs for remodeling Memorial Stadium are the following:

Upgrade Metropolitan Stadium ¹⁾	\$2,637,000
Maintenance equipment ²⁾	150,000
Traffic circulation plan ³⁾	100,000
Traffic light control ⁴⁾	120,000
EIS ⁵⁾	150,000
Design (5%), Legal (1%), Construction Management (2½%) Fee = 8½%	2,603,000
Contingency (5%)	1,661,000
Interim financing (6½%)	<u>2,268,000</u>
Total Additional Project Costs	\$9,689,000

Remodeling Memorial Stadium for use by the Minnesota Vikings, Minnesota Gophers and possibly a soccer team assumes minimal additional project costs. Of the additional project costs, there are two areas that should be discussed: traffic control and upgrading Metropolitan Stadium for baseball.

Traffic circulation and control are problematic at the University site and would certainly be at least as problematic were the Minnesota Vikings to play there ten Sundays per year. Monday evenings would cause even more substantial problems with

traffic circulation and would interfere with parking demands of the University's evening classes. The University is concerned about traffic circulation and is studying ways to improve transportation to and from the University area, as well as additional parking possibilities. The money projected for the traffic circulation plan and traffic light control is minimal and should be viewed at best as the state's additional contribution to the University's on-going effort. For example, \$120,000 for traffic light control would only buy traffic lights for two intersections. Clearly, the estimated additional project costs for traffic control would not support significant improvements at the University site. This is justifiable since traffic problems already exist at the University and can be considered not germane to the stadium project. However, unwillingness on the state's part to help solve the traffic problems at the University and, at the same time, to expand the use of Memorial Stadium, would undoubtedly generate strong community opposition to the project, as well as demands from the University and the City of Minneapolis for more traffic funding.

The \$2.6 million estimated to upgrade Metropolitan Stadium for baseball is taken from the Metropolitan Sports Area Commission's report to the joint subcommittee. This estimate is the lowest of three options the sports commission listed for improving Metropolitan Stadium for baseball. This choice would not substantially alter or improve Metropolitan Stadium for the Minnesota Twins. The Minnesota Twins have testified that they do not support this option and will not sign a long-term lease at the upgraded Metropolitan Stadium.

The following summarizes estimated capital costs for Remodeling Memorial Stadium.

Remodel Memorial Stadium

Base construction cost \$27,476,000

Estimated additional project costs:

Upgrade Metropolitan Stadium	\$2,637,000
Maintenance equipment	150,000
Traffic circulation plan	100,000
Traffic light control	120,000
EIS	150,000
Design (5%), Legal (1%), Construction Management (2½%) Fee = 8½%	2,603,000
Contingency (5%)	1,661,000
Interim financing (6½%)	<u>2,268,000</u>

Total Additional Project Costs 9,689,000

Total Capital Cost \$37,165,000

Remodel Metropolitan Stadium in Bloomington for football/soccer and baseball

Construction Cost - \$22,946,000

Metropolitan Stadium can be remodeled to make an excellent facility by retaining the oldest section of the stadium and extending this basic construction to enclose the field. The basic section is located behind home plate and the first base line. It is a three-level stadium including approximately 24,000 seats. The remainder of the stands in the outfield and in the left field would be removed. The 24,000 seat basic stadium structure would be extended to completely enclose the playing field, adding 35,700 new permanent armchair seats. In baseball's left field, 5,300 armchair seats would be installed that telescope out for football and retract for baseball. The entire stadium would have three levels of seating.

To improve viewing, the playing field could be lowered. Artificial turf could be added. These additional project costs make this facility comparable in quality with other design options. This facility meets all design specifications and contains two press boxes, one located for football viewing, and one located for baseball viewing.

Of the 65,000 seats, 34,000 (53%) would be considered sideline seats for football and 19,600 (31%) would be located between the goal lines. Sideline distance is 78 feet, which compares favorably to other multi-purpose stadiums. There are 59,700 baseball seats.

Construction would require approximately two years and it could be scheduled so that the total capacity of the stadium, while under construction, is never less than the existing stadium capacity of 48,000.

Construction cost estimates were derived by examining the original engineering drawings to determine cost per seat for the oldest 24,000 seat portion. These costs were projected to 1975 using a construction cost index. Costs for remodeling, including additional requirements of the design specifications, were added. The 1975 estimates were projected for mid-1977 bidding.

Additional Project Costs - \$7,563,000

Additional project costs for remodeling Metropolitan Stadium are the following:

Lower field ⁶⁾	\$1,100,000
Add artificial turf	800,000
Maintenance equipment	150,000
EIS	150,000
Traffic circulation and control	Unknown
Design (5%), Legal (1%), Construction Management (2½%) Fee = 8½%	2,137,000
Contingency (5%)	1,364,000
Interim financing (6½%)	<u>1,862,000</u>
Total Additional Project Costs	\$7,563,000

Remodeling Metropolitan Stadium for use by the Minnesota Twins, Minnesota Vikings, and possibly soccer appears to require minimal additional project costs. Traffic circulation and control costs are not totally clear. Increasing the potential number of fans at a football game from 48,000 to 65,000, a 35% increase, would generate more traffic and require more traffic control. Whether this increase requires money to be spent on traffic control equipment (a capital expenditure), or more traffic control personnel (an operating expenditure), or simply increases time required for getting to and from the stadium is unclear.

Parking would be somewhat strained. With the present 14,000 parking spaces and 3.4 persons per car used at football games, there would be a need for either an additional 5,000 spaces or a change in the fans-per-car ratio from 3.4 to 4.6 fans per car. This, however, is not necessarily a capital cost. The additional spaces could, of course, be found in nearby industrial or office parks and busing could be provided from the off-site parking to the stadium. Or the use of mass transit from the central cities to the stadium could be explored.

Since it is unclear whether capital would be needed for traffic circulation or for parking in order to make this remodeled stadium functional, it is listed as unknown.

The following summarizes estimated capital costs for remodeling Metropolitan Stadium.

Remodel Metropolitan Stadium for football/soccer and baseball

Base construction cost \$22,946,000

Estimated additional project costs:

Lower field	\$1,100,000
Add artificial turf	800,000
Maintenance equipment	150,000
EIS	150,000
Traffic circulation/control	unknown
Design (5%), Legal (1%), Construction Management (2½%) Fee = 8½%	2,137,000
Contingency (5%)	1,364,000
Interim financing (6½%)	<u>1,862,000</u>
Total Additional Project Costs	<u>7,563,000</u>
Total Capital Cost	<u>\$30,509,000</u>

Construct a New Multi-Purpose Stadium

Construction Cost - \$31,130,000

A new, multi-purpose stadium can be constructed which would be completely round, containing two levels of stands. The stadium would be semi-depressed into the earth. The lower level of stands would be 20 feet below ground level extending to ground level. The upper level would begin at ground level and extend upward. A two-story stadium club would be located in baseball's center field (football's end zone). Two press boxes would be provided, one each for football and baseball viewing. The stadium meets all design specifications.

The field configuration converts from football to baseball by using telescoping and rotating seats on the lower levels. On the lower levels, the seats along the first base side are fixed from the right field foul line to a point directly behind home plate. A section of stands identical to these but on the third base side of the field is mounted on wheels and can be moved from baseball position to a position opposite the first base stands for football. In the areas at each end of the football field are telescopic seats which pull out for football and retract for baseball. The consultant estimated it would take eight men eight hours to change over the field and seating configuration from football to baseball and vice versa.

The following is a description of seating:

- 43,400 upper level seats
- 2,000 club-type seats
- 10,800 rotating seats
- 7,900 telescopic seats
- 900 seats in private boxes

- 65,000 seats for football
- 57,100 seats for baseball.

Of the 65,000 seats, approximately 49,000 seats (76%) would be considered sideline seats, and 26,500 seats (41%) are located between the goal lines. The sideline distance is 60 feet compared with 78 feet for remodeling Metropolitan Stadium.

Construction time is estimated at approximately 21 months. The consultant stated that there is no difference in design concepts, construction costs, or construction time either at the Industry Square or the Bloomington site. Construction cost estimates for the multi-purpose option were derived by using Rich Stadium in Buffalo, New York, as a model, and translating

the cost per seat from Buffalo to the Minneapolis/St. Paul area for December, 1975. Rich Stadium is similar in sectional concept to the multi-purpose option. Further adjustments to accommodate other design specifications were made. The 1975 estimates were projected for mid-1977 bidding.

Additional Project Costs at Industry Square - \$11,055,000

If a new multi-purpose stadium were constructed at the Industry Square site in Minneapolis, the State Planning Agency estimates the following additional project costs:

Maintenance equipment	\$ 150,000
Site work including:	
Utility relocation	
Earthwork/grading/paving	
Retaining wall	
Lighting of parking	
Landscaping	
Fencing	2,069,000
Parking ramp for 810 cars	1,420,000
Traffic circulation	Unknown
Design (5%), Legal (1%),	
Construction Management	
(2½%) Fees = 8½%	2,555,000
Contingency (5%)	1,886,000
Interim financing (6½%)	<u>2,575,000</u>
Total Additional Project Costs	\$11,055,000

The estimated additional project costs are based on information provided by the Minneapolis Housing and Redevelopment Authority, a Minneapolis architectural firm, and the Select Joint Sports Facilities Subcommittee members and staff. The problems of estimated additional project costs relate to traffic circulation and pedestrian movement.

It is unclear how many traffic circulation improvements will need to be made in order to make the stadium functional. It appears, however, that greatest concern for traffic circulation improvements comes from the City of Minneapolis

and the adjacent Cedar-Riverside community. Traffic circulation can be controlled by non-capital programs such as closing streets and freeway exit ramps, and directing traffic to desired parking locations as well as capital programs.

The Minneapolis Housing and Redevelopment Authority estimates \$4.13 million is needed for traffic circulation improvements. It describes these improvements as "improvements which are supportive of the stadium, but not required for the construction of the stadium proper." The Minnesota Highway Department states that there would need to be some traffic improvements but has not done any closer analysis. Traffic circulation needs further study before the State Planning Agency can define the "unknown" additional project cost in its estimate. Any figures for traffic circulation used at this stage are tenuous. The movement of pedestrians from parking spaces into the stadium is also an area for which additional project costs are unknown. It appears, however, that pedestrian movement near the stadium will need to be separated from vehicular movements in order to get people in and out of the stadium. Both traffic circulation and pedestrian movement seem to be irresolvable at this point since the specifics of the site and related parking patterns are not known. Air quality might be of greater concern than traffic problems. This area needs closer examination.

Additional project costs--beyond stadium construction proper--at Industry Square amount to a significant portion of the project cost. If the cost of the land is included in the project, the total capital cost for a multi-purpose stadium is approximately \$52 million. (The approximate \$10.6 million

for land costs is assumed to be paid by the private sector.)

The following summarizes estimated capital costs for construction of a new multi-purpose stadium at Industry Square.

Base construction cost \$31,130,000

Estimated additional project costs:⁷⁾

Maintenance equipment	150,000
Site work including: ⁸⁾	
Utility relocation	
Earthwork/grading/paving	
Retaining wall	
Lighting of parking	
Landscaping	
Fencing	2,069,000
Parking ramp for 810 cars	1,420,000
Traffic circulation	Unknown
Design (5%), Legal (1%),	
Construction Management	
(2½%) Fees = 8½%	2,955,000
Contingency (5%)	1,886,000
Interim financing (6½%)	<u>2,575,000</u>

Total Additional Project Costs 11,055,000

Total Capital Cost \$42,185,000

Additional Project Costs at Bloomington - \$7,065,000

If a new multi-purpose stadium were constructed at Bloomington, the State Planning Agency estimates the following additional project costs:

Maintenance equipment	\$ 150,000
EIS	150,000
Utility relocation	50,000
Traffic circulation	Unknown
Design (5%), Legal (1%)	
Construction Management	
(2½%) Fees = 8½%	2,675,000
Contingency (5%)	1,707,000
Interim financing (6½%)	<u>2,331,000</u>
Total Additional Project Costs	\$7,065,000

The additional project costs for a multi-purpose stadium at the Bloomington Metropolitan Stadium site are minimal because the stadium area already is publicly-owned and vacant. Traffic circulation and control may be problem areas. The same discussion for traffic circulation problems at a remodeled Metropolitan Stadium apply in this case as well. Increasing the stadium capacity and the corresponding number of cars does not necessarily require spending money on traffic circulation improvements.

One important difference between traffic circulation at Bloomington and at Industry Square should be noted. The Bloomington site is located along a commercial and retail industrial strip; there are few residents living near the site. Bloomington's traffic circulation problems would not affect residents nearly as much as would those around Industry Square.

One similarity between traffic circulation at Bloomington and Industry Square should also be noted. It is likely that city officials and those working or living near the two sites would use a legislative decision to construct a stadium as leverage for gaining more traffic improvements in their area. Conversations with Bloomington and Minneapolis city officials support this.

The following summarizes capital costs for constructing of a new multi-purpose stadium at the Metropolitan Stadium site in Bloomington:

Construction of a New Multi-Purpose Stadium at Bloomington

Base construction cost \$31,130,000

Estimated additional project costs:

Maintenance equipment	150,000
EIS	150,000
Utility relocation	50,000
Traffic circulation	Unknown
Design (5%), Legal (1%)	
Construction Management	
(2½%) Fees = 8½%	2,675,000
Contingency (5%)	1,708,000
Interim financing (6½%)	<u>2,331,000</u>

Total Additional Project Costs 7,065,000

Total Capital Cost\$38,195,000

Construct a New Football/Soccer Stadium at Metropolitan Stadium in Bloomington

Construction Cost - \$25,970,000

A new football/soccer stadium can be constructed which would be an oval, semi-depressed stadium with 40,000 seats located in 48 rows on the lower level and 25,000 seats in 26 rows on the two upper levels. There are two concourses, the first-level concourse serving the lower-level seating located 36 feet above ground, and the second-level concourse serving the upper two levels located fifteen feet above the first-level concourse. The second level serves the press box, 75 private boxes, and supporting services for the two upper levels. The stadium club opens to the outside and is reached from the first-level concourse.

Of the 65,000 seats, 48,500 (76%) seats would be considered sideline seats and 25,800 (40%) seats are located between the goal lines. The sideline distance is 40 feet. The first row

is four feet above the playing field. The stadium meets all design specifications.

Construction time is estimated at 18 months. The consultant stated that there is no difference in design concepts, construction costs, or construction time either at Industry Square or the Bloomington site. The construction cost estimate for the football/soccer option was estimated in the same manner as the cost for the new multi-purpose stadium.

Additional Project Costs - \$9,163,000

Additional project costs for constructing a new football/soccer stadium at Metropolitan Stadium in Bloomington are the following:

Upgrade Metropolitan Stadium for baseball	\$2,637,000
Maintenance equipment	150,000
Utility relocation	50,000
Parking	Unknown
Traffic circulation	Unknown
EIS	150,000
Design (5%), Legal (1%), Construction Management (2½%) Fees = 8½%	2,461,000
Contingency (5%)	1,570,000
Interim financing (6½%)	<u>2,144,000</u>
Total Additional Project Costs	\$9,163,000

The estimated additional project costs are the same as those for a new multi-purpose stadium in Bloomington. The same discussion for additional project costs for a multi-purpose stadium in Bloomington applies in this case.

Two additional project costs apply: parking and upgrading Metropolitan Stadium for baseball. Upgrading Metropolitan Stadium for baseball was discussed under the Remodeled Metropolitan Stadium option. The discussion applies in this case as well:

the Minnesota Twins would not sign a long-term lease at an upgraded Metropolitan Stadium.

Building a football/soccer stadium would displace approximately 1,000 parking spaces. This might further compound the parking problems. But proper management could alleviate them, and non-capital improvements, including busing from nearby office and industrial-park parking lots, could compensate for loss of parking at the site. Capital improvements are estimated by the Metropolitan Sports Area Commission at \$7.2 and \$8.9 million for leasing or buying land for surface parking or building a parking ramp on the present site. Though parking might be more problematic than at the present site, due to parking spaces displaced by a second stadium, it is doubtful that funds should be included for parking improvements. Busing from nearby lots is a more cost-effective option.

Estimates capital costs for constructing a new football/soccer stadium at the Metropolitan Stadium site in Bloomington are:

Construct a New Football/Soccer Stadium at Bloomington

Base construction cost \$25,970,000

Estimated additional project costs:

Upgrade Metropolitan Stadium for baseball	2,637,000
Maintenance equipment	150,000
Utility relocation	50,000
Parking	Unknown
Traffic circulation	Unknown
EIS	150,000
Design (5%), Legal (1%), Construction Management (2½%), Fees = 8½%	2,461,000
Contingency (5%)	1,571,000
Interim financing (6½%)	<u>2,144,000</u>

Total Additional Project Costs 9,163,000

Total Capital Cost \$35,133,000

Other Cost Estimates

The consultant provided other cost estimates listed in Appendix B.

VI. LEGISLATIVE ACTION

The Select Joint Sports Facilities Subcommittee voted in October, 1975, to limit its consideration of major sports facilities to two proposals: a remodeled Memorial Stadium and a new football stadium at the Metropolitan Stadium site in Bloomington. January 6, 1976, the joint subcommittee introduced a third proposal for consideration, a new multi-purpose stadium in the Industry Square area of Minneapolis. On January 20, a fourth proposal was introduced, a new multi-purpose stadium at the Metropolitan Stadium site in Bloomington.

Before its last meeting February 6, the joint subcommittee took the following action:

- 1) Voted to include an arts proposal with a stadium proposal.
- 2) Voted to exclude any bonding authority for a dome.
- 3) Voted to advance to the respective committees of the Senate and House Proposal III, a plan to construct a new multi-purpose stadium in Industry Square.
- 4) Approved a draft bill, S. F. 2096, H. F. 2281, as the joint subcommittee's report and agreed that the basic concepts contained in Proposal III be introduced to the appropriate committees for further action.

The planning agency's report does not include a comprehensive analysis of Proposal III. However, several points should be raised.

- 1) Apparently, because of a misunderstanding of the contents of the planning agency's analysis, Proposal III contains \$1 million more than necessary for concession fixtures.
- 2) State Planning Agency believes \$150,000 is a more realistic estimate for maintenance equipment than \$105,000 in Proposal III. This is based on a conversation with The Metropolitan Sports Area Commission Stadium manager.
- 3) Proposal III includes \$420,000 for traffic circulation. The cost of traffic circulation improvements depends upon the outcome of a traffic circulation study. It does not seem reasonable to include funds for traffic circulation in the cost of the project before the traffic circulation plan is complete.
- 4) Proposal III gives the Minnesota Twins and Minnesota Vikings a percentage of gross concession sales. The rationale for this is unclear, since the proposal also provides for public supply of all concession space and equipment.
- 5) Operating Costs. The operating cost of \$1.4 million per year might be low. State Planning Agency research in this area through conversations with stadium managers in other areas and a noted consultant on stadium operations indicates that \$1.5 to \$2 million per year is a more realistic figure.

6) Bloomington Land Equity. Proposal III states that 100 of the 147 acres at the Bloomington site would be sold, and the sale of the land minus the outstanding debt on the bonds will yield a land equity revenue. This land equity revenue serves as a backup for any cost overruns during the early years of the project. Land equity is based on an estimated value of \$2.25 per square foot of land at the Bloomington site. Land is assumed to increase in value at five percent per year to \$2.60 per square foot in 1979. If the 100 acres were to be sold in 1979 at \$2.60 per square foot, Proposal III shows that the land sale would generate \$10.9 million in revenue. Subtracting the outstanding debt on the existing bonds from \$10.9 million would yield an equity revenue of \$5.6 million for the stadium authority.

The State Planning Agency contacted four appraisers and private developers in the metropolitan area regarding the process and prospects of the sale of the land at the Bloomington site: Russel Smith & Associates, LaSalle, Ruppert, & Associates, real estate appraisers and consultants, Rauenhorst Corporation, and Dayton-Hudson Properties. All four stated their belief that \$2.60 per square foot average price estimated in Proposal III is too high. Furthermore, they indicated that this land would increase only marginally in value between 1976 and 1979, less than 5% per year.

Their estimates of the land value range from \$.80 to \$1.25 per square foot. They also stated that it would be very difficult to sell all of the 100 acres by 1980. If this information is correct, the equity revenue from the land sale, (assuming an average sale price of \$1 per square foot), would be reduced from \$5.6 million estimated in Proposal III to zero. The sale of the land would not pay the debt on the bonds. Further study of this issue should include an appraisal. A detailed appraisal of the marketability and possible uses of the Bloomington land would cost between \$10,000 and \$20,000.

These points are not a criticism of Proposal III. Rather, they indicate the difficulty of making assumptions of costs and income. This leads the State Planning Agency to infer that the best estimates of total costs and income are tenuous--especially income estimates.

For this reason, an adequate subsidy should be included in any legislation authorizing the construction of a stadium. The following section tests the sensitivity of attendance on income and helps gain a better understanding for the range of subsidies required.

VII. SENSITIVITY ANALYSIS OF:

- Remodeling Metropolitan Stadium,
- Constructing New Multi-Purpose Stadium at Industry Square, and
- Constructing New Multi-Purpose Stadium at Bloomington.

The economic feasibility of a project depends upon total costs, who pays the costs, and how the project is financed. The "risk" involved with most stadium projects centers around the danger of higher capital and operating costs than expected and lower income than expected. One way to get a feeling for the risk involved is to vary the assumptions upon which the project's economic feasibility is based. This tests the sensitivity of the assumptions and helps determine risk. The economic feasibility of stadium options is based upon assumptions of total capital costs and bonding requirements, annual income and operating expenses, and "outside" tax money available to subsidize any cash short-fall.

The following sensitivity analysis varies attendance expectations by 10% and 25% better and worse. It uses all income assumptions contained in the joint subcommittee's proposals for a new multi-purpose stadium at Industry Square and at Bloomington. The same income assumptions used by the joint subcommittee for the Bloomington multi-purpose proposal are used to analyze the Remodeled Metropolitan Stadium option.

The complete analysis is shown in Appendix C.

The following summarizes the results of the analysis.

SURPLUS OR (DEFICIT)

	<u>25%</u> <u>Worse</u>	<u>10%</u> <u>Worse</u>	<u>Proposed</u>	<u>10%</u> <u>Better</u>	<u>25%</u> <u>Better</u>
Remodel Metropolitan	(\$189,000)	\$263,000	\$570,000	\$844,000	\$1,085,000
Multi-Purpose - Bloomington	(\$788,000)	(\$336,000)	(\$ 29,000)	\$245,000	\$ 486,000
Multi-Purpose - Industry Square	(\$901,000)	(\$426,000)	(\$124,000)	\$152,000	\$ 395,000

The analysis shows that neither multi-purpose stadium is economically feasible without including subsidy.

Attendance is a sensitive variable. Decreasing the attendance for a multi-purpose stadium by 25% increases the deficit by a factor of seven. A similar relationship between attendance and deficit is also evident in the Remodeled Metropolitan Stadium option.

VIII. SOURCES OF RESERVE FUNDING

Any stadium project would be financed through the sale of metro-wide general obligation bonds. It is anticipated that income to the stadium authority would be used to retire the debt on the bonds and operate the stadium. Stadium revenue sources include:

- Rent from the teams
- Parking
- Concessions
- Advertising
- Stadium club and restaurant
- Sale of private boxes
- Sale of stadium name

However, in the event that these revenue sources generated insufficient income to pay the debt service on the bonds, a source of reserve funds must be available in order that the project not revert to the property tax.

The preceding sensitivity analysis of attendance shows that for a given year, a 25% decrease in attendance in Industry Square would require additional funding of almost \$1 million. (A 25% decrease in attendance still gives the Minnesota Twins more attendance than they had in 1975: 750,000 vs. 737,000). Attendance is crucial to stadium income. The economic feasibility of a stadium project depends not only upon income but many cost factors. Crucial cost factors include operating and maintenance costs, the capital cost of the stadium, and the debt service on the bonds. If

any of these costs were higher than projected, the public support required would be even greater. A change of one percentage point on interest for \$40 million in bonds changes annual debt service payments by more than \$300,000. Given these uncertainties, any stadium proposal planned to avoid property-tax subsidy must include a non-property tax source for reserve funding.

A minimum of \$1.1 million should be planned as annual reserve funding available annually for the life of the stadium bonds. With 25% less attendance and operating costs only 7% (\$100,000) higher than projected, the annual reserve funding needed would be \$1 million.

Sources of reserve funds examined include a tax on hotel and motel sales in the metropolitan area and an increase in the cigarette excise tax.

A hotel-motel tax, metropolitan wide, would yield the following revenue in 1977:

1% tax	\$ 695,000
2% tax	\$1,391,000
3% tax	\$2,087,000
4% tax	\$2,783,000
5% tax	\$3,479,000

A 1¢ increase on the cigarette excise tax (currently 18¢ per package) would yield approximately \$4.6 million in 1977.

These estimates were derived by the Department of Revenue.

Discussion

A 2% hotel-motel tax would provide \$1.3 million, adequate revenue to support a reasonable stadium deficit. It would not provide adequate revenue for stadium support and, at the same time, for funding arts organizations in Minnesota.

Best estimates available indicate that approximately 70% of hotel-motel tax revenue would come from non-Minnesota residents and approximately 30% from Minnesota residents. Of the 30%, most of the revenue would come from Minnesota residents living outside the metropolitan area.

A 1¢ cigarette excise tax increase statewide generates adequate revenue to cover both a stadium deficit and, at the same time, fund the arts. The revenue can be divided fairly between metropolitan and non-metropolitan arts organizations. The tax increase would equally affect metropolitan and non-metropolitan residents.

Given the history of cigarette taxes being spent on recreational facilities, it is not unreasonable to include arts and sports in the kinds of recreational facilities cigarette taxes have traditionally funded.

Authorizing the sale of stadium bonds with metropolitan-wide general obligation backing should include authority to levy either a 2% hotel-motel tax and/or a 1¢ cigarette tax. In this way the danger of reverting to a property tax to retire stadium bonds can be reduced.

The level of reserve funding necessary could be further ensured if any legislation were to include certain terms and provisions to be met before construction can begin. These include the enumeration of contractual arrangements and guarantees between the teams and the stadium authority and harsh penalties for breaking leases. This would eliminate bargaining between the stadium authority and the teams. In addition any legislation could include provisions

requiring the contractor to certify the total construction price and post performance bonds to cover any costs incurred over and above the certified price. A "self-destruct" clause could be written into the legislation, to be activated if interest rates or construction bids are not acceptable to the entity overseeing construction. The project could be undertaken in phases with legislative oversight provided during important stages of the process.

FOOTNOTES

- 1) Provides funds for improving Metropolitan Stadium for baseball by remodeling. Lowest estimate of remodeling taken from MSAC's report to Select Joint Sports Facilities Subcommittee, dated December 1, 1975. Other options: \$4.3 and \$5.0 million.
- 2) Latest estimate by MSAC's manager.
- 3) 4) Taken from Select Joint Sports Facilities Subcommittee. Presumed to affect Memorial Stadium site. This is a minimum.
- 5) State Planning Agency staff estimate.
- 6) These costs make this option comparable in quality with the other options, but are not absolutely necessary.
- 7) It is assumed that if these options were developed in the Industry Square area of Minneapolis, the private sector would provide all land.
- 8) These estimates are those contained in the proposal of the Select Joint Sports Facilities Subcommittee.

APPENDIX A

STADIUM DESIGN SPECIFICATIONS
(Apply to all stadium options)

Open Stadium	
Field	Football, soccer (baseball where specified).
Seating	65,000 seats -- 10,000 bench seats with backs, 55,000 armchair seats with backs; thereof 10,000 prime line seats with 21" spacing.
Private Boxes	75 private, unfurnished boxes with sinks and other plumbing connections, electrical connections, and heat ducts
Press Box	Modest, not extravagant, maximum of 100 seats, including electrical hook-up for broadcasting.
Scoreboard	Includes construction of scoreboard with provisions for electrical advertising and messages but not for instant replays--a la Dallas.
Sound	Includes sound system.
Lighting	Adequate to broadcast color T.V.
Concession	Construction plus equipment.
Stadium Club	Includes club.
Turf	Cheapest <u>long-term</u> cost (total operating and capital cost) over 30 years.
Ticket Offices	Includes drive-up windows for all three locations; can be located inside stadium.
Locker Room	Includes locker rooms, team offices.
Related Facilities	General space required, lounges, two handball courts for each football-soccer stadium. At Industry Square - football-soccer only option: 4 locker rooms. At Industry Square - football-soccer-baseball option: 5 locker rooms. At Memorial Stadium: 2 locker rooms. At Metropolitan Stadium - remodeled football-baseball option: 2 new locker rooms. At Metropolitan Stadium - new football stadium option: 2 locker rooms.

REMODEL METROPOLITAN STADIUM: SENSITIVITY ANALYSIS OF ATTENDANCE

	<u>25%</u> <u>Worse</u>	<u>10%</u> <u>Worse</u>	<u>Proposa</u> <u>l</u>	<u>10%</u> <u>Better</u>	<u>25%</u> <u>Better</u>
CAPITAL COST	\$30,509,000	\$30,509,000	\$30,509,000	\$30,509,000	\$30,509,000
Debt Service	\$ 2,374,000	\$ 2,374,000	\$ 2,374,000	\$ 2,374,000	\$ 2,374,000
STADIUM REVENUE	(Attendance for Twins, Vikings, Gophers and "other events" varied as stated)*				
Rental	618,000	740,000	822,000	894,000	932,000
Parking	669,000	748,000	802,000	855,000	934,000
Concessions	486,000	583,000	648,000	709,000	775,000
Advertising	150,000	150,000	150,000	150,000	150,000
Stadium Club	200,000	200,000	200,000	200,000	200,000
Sale of Boxes	900,000	900,000	900,000	900,000	900,000
Sale of Name	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>
TOTAL	\$ 3,113,000	\$ 3,411,000	\$ 3,612,000	\$ 3,798,000	\$ 3,981,000
TICKET TAX REVENUE	\$ 922,000	\$ 1,076,000	\$ 1,182,000	\$ 1,270,000	\$ 1,328,400
FUNDING					
Stadium Revenue & Ticket Tax	\$ 4,035,000	\$ 4,487,000	\$ 4,794,000	\$ 5,068,000	\$ 5,309,000
Minus Operating Cost	- 1,400,000	- 1,400,000	- 1,400,000	- 1,400,000	- 1,400,000
Minus New Debt Service	- 2,374,000	- 2,374,000	- 2,374,000	- 2,374,000	- 2,374,000
Minus Old Debt Service At Met	- 450,000	- 450,000	- 450,000	- 450,000	- 450,000
Surplus or (Deficit)	<u>(\$ 189,000)</u>	<u>\$ 263,000</u>	<u>\$ 570,000</u>	<u>\$ 844,000</u>	<u>\$ 1,085,000</u>

*The following are the actual attendance figures used:

Twins	9,375	11,250	12,500	13,750	15,625
Vikings	45,000	54,000	60,000	65,000	65,000
Gophers	--	--	--	--	--
Other	18,750	22,500	25,000	27,500	31,250

MULTI-PURPOSE AT BLOOMINGTON: SENSITIVITY ANALYSIS OF ATTENDANCE

	<u>25% Worse</u>	<u>10% Worse</u>	<u>Proposal</u>	<u>10% Better</u>	<u>25% Better</u>
CAPITAL COST	\$38,195,000	\$38,195,000	\$38,195,000	\$38,195,000	\$38,195,000
Debt Service	\$ 2,973,000	\$ 2,973,000	\$ 2,973,000	\$ 2,973,000	\$ 2,973,000
STADIUM REVENUE	(Attendance for Twins, Vikings, Gophers and "other events" varied as stated)*				
Rental	618,000	740,000	822,000	894,000	932,000
Parking	669,000	748,000	802,000	855,000	934,000
Concessions	486,000	583,000	648,000	709,000	775,000
Advertising	150,000	150,000	150,000	150,000	150,000
Stadium Club	200,000	200,000	200,000	200,000	200,000
Sale of Boxes	900,000	900,000	900,000	900,000	900,000
Sale of Name	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>	<u>90,000</u>
TOTAL	\$ 3,113,000	\$ 3,411,000	\$ 3,612,000	\$ 3,798,000	\$ 3,981,000
TICKET TAX REVENUE	\$ 922,000	\$ 1,076,000	\$ 1,182,000	\$ 1,270,000	\$ 1,328,000
<u>FUNDING</u>					
Stadium Revenue & Ticket Tax	\$ 4,035,000	\$ 4,487,000	\$ 4,794,000	\$ 5,068,000	\$ 5,309,000
Minus Operating Cost	- 1,400,000	- 1,400,000	- 1,400,000	- 1,400,000	- 1,400,000
Minus New Debt Service	- 2,973,000	- 2,973,000	- 2,973,000	- 2,973,000	- 2,973,000
Minus Old Debt Service At Met	- 450,000	- 450,000	- 450,000	- 450,000	- 450,000
Surplus or (Deficit)	<u>(\$ 788,000)</u>	<u>(\$ 336,000)</u>	<u>(\$ 29,000)</u>	<u>\$ 245,000</u>	<u>\$ 486,000</u>

*The following are the actual attendance figures used:

Twins	9,375	11,250	12,500	13,750	15,625
Vikings	45,000	54,000	60,000	65,000	65,000
Gophers					
Other	18,750	22,500	25,000	27,500	31,250

MULTI-PURPOSE AT INDUSTRY SQUARE: SENSITIVITY ANALYSIS OF ATTENDANCE

	<u>25%</u> <u>Worse</u>	<u>10%</u> <u>Worse</u>	<u>Proposal</u>	<u>10%</u> <u>Better</u>	<u>25%</u> <u>Better</u>
CAPITAL COST	\$42,185,000	\$42,185,000	\$42,185,000	\$42,185,000	\$42,185,000
Debt Service	\$ 3,283,000	\$ 3,283,000	\$ 3,283,000	\$ 3,283,000	\$ 3,283,000
STADIUM REVENUE	(Attendance for Twins, Vikings, Gophers and "other events" varied as stated)*				
Rental	634,000	761,000	845,000	930,000	986,000
Parking	611,000	631,000	658,000	658,000	658,000
Concessions	683,000	819,000	911,000	998,000	1,104,000
Advertising	175,000	175,000	175,000	175,000	175,000
Stadium Club	250,000	250,000	250,000	250,000	250,000
Sale of Boxes	750,000	750,000	750,000	750,000	750,000
Sale of Name	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>	<u>100,000</u>
TOTAL	\$ 3,203,000	\$ 3,486,000	\$ 3,689,000	\$ 3,861,000	\$ 4,023,000
TICKET TAX REVENUE	\$ 1,029,000	\$ 1,221,000	\$ 1,320,000	\$ 1,424,000	\$ 1,505,000
<u>FUNDING</u>					
Stadium Revenue & Ticket Tax	\$ 4,232,000	\$ 4,707,000	\$ 5,009,000	\$ 5,285,000	\$ 5,528,000
Minus Operating Cost	- 1,400,000	- 1,400,000	- 1,400,000	- 1,400,000	- 1,400,000
Minus New Debt Service	- 3,283,000	- 3,283,000	- 3,283,000	- 3,283,000	- 3,283,000
Minus Old** Debt Service At Met	- 450,000	- 450,000	- 450,000	- 450,000	- 450,000
Surplus or (Deficit)	<u>(\$ 901,000)</u>	<u>(\$ 426,000)</u>	<u>(\$ 124,000)</u>	<u>\$ 152,000</u>	<u>\$ 395,000</u>

*The following are the actual attendance figures used:

Twins	9,869	11,842	13,158	14,474	16,448
Vikings	45,000	54,000	60,000	65,000	65,000
Gophers	30,000	36,000	40,000	44,000	50,000
Other	18,750	22,500	25,000	27,500	31,250

**Assumes no land equity at the metropolitan site.

APPENDIX B

1. The consultant provided construction cost estimates for a stadium similar to Seattle's King County domed stadium in the Minneapolis/St. Paul area in 1977. The Seattle domed stadium is a football and baseball stadium that contains 65,000 fixed seats and is covered by a thin-shelled concrete dome. Construction began in November, 1972, and is scheduled for completion by June 1, 1976. Assuming a mid-1977 bid and a three-year construction period, the consultant estimates that a similar stadium constructed in the St. Paul/Minneapolis metropolitan area would cost \$84.16 million. This construction cost estimate was calculated by taking the actual initial bid, including cost add-ons during construction, and translating the total actuals from Seattle to the Minneapolis/St. Paul area and from December, 1975, to mid-1977.
2. The consultant estimated that the initial cost to prepare the multi-purpose stadium for future dome or roof would be approximately \$3 million in additional column and footing costs. This estimate includes 72 columns, 140 feet high, to support a roof as well as the back portion of the upper deck. The estimate includes neither a tension ring (used with a solid dome) nor a compression ring (used for an air-inflated dome). It does not provide for enclosing the outside of the stadium to make it essentially air-tight.

Appendix B cont.

3. Initial costs to prepare the remodeled Metropolitan Stadium to support a future dome would be approximately \$4 million.
4. The consultant estimated the total cost for adding a dome to the new multi-purpose stadium ranges between \$8-\$17 million.
5. The consultant estimated the cost of the Geiger-Berger scheme to remodel Memorial Stadium at the University of Minnesota. This results in an estimate of \$33.0 million to construct the concept Geiger estimated at \$27.9 million in 1976. This represents an increase of 18% over Geiger's estimated bid in 1976. With a 1977 bid, the estimate would total \$36.3 million.
6. The consultant estimated the cost of adding additional private boxes to the new multi-purpose or new football/soccer stadiums at \$4,800 per box. Cost of finishing boxes is estimated at \$4,000 per box. The consultant stressed that this was a rough estimate for a modestly finished box.
7. The consultant estimated a more spartan version of remodeling Memorial Stadium which includes 65,000 seats but fewer armchair seats, fewer private boxes, and poorer viewing at \$20,025,000.
8. The consultant estimated a different version of the multi-purpose stadium in which the continuity of the round-shaped stadium is broken by a gap in the upper level of stands encompassing 20% of the circle. The estimate for this variation is \$32.3 million as opposed to the \$31.1 million used in this report. The variation contains 65,000 seats for football and 55,900 seats for baseball.

APPENDIX C

SENSITIVITY ANALYSIS OF:

- Remodeled Metropolitan Stadium
- New Multi-Purpose Stadium at Bloomington
- New Multi-Purpose Stadium at Industry Square