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Master Plan, 1983

Forest Park

Forest Park
Master Plan

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2/83

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1. SUMMARY AND MAJOR RECOMMENDATIONS

Forest Park is one of the most important assets in the St. Louis metropolitan community. It is important as a park, as a home for many cultural and recreational institutions and, above all, as a symbol of the beauty and tradition of St. Louis.

During its more than 100 years of existence, the park has been characterized by continual change in its uses, structures and circulation patterns. Such change has been, in many respects, inevitable and often for the best. Yet, rarely has it occurred as part of an overall pattern or with full appreciation for the long-range implications associated with each specific action. In recent years, as the pace of proposed changes has accelerated, more and more people have come to recognize the importance of an overall master plan for the park.

The Forest Park Master Plan is a broadly based set of recommendations for conserving, guiding and enhancing the region's most important park. The plan is the result of extensive analysis of the historical and existing uses of the park. It reflects a high degree of citizen participation on three levels: traditional public hearings, ongoing review by an advisory task force appointed by the Mayor, and a series of workshops where a large group of people representing many points of view provided a basis for the plan's direction.

The recommendations of the master plan are based on several organizing concepts which have been drawn from the existing form and function of the park itself. The five major recommendations include:

1. Conserve the size, beauty and quality of the park with an emphasis on upgrading existing improvements and facilities that have deteriortated over time, and increasing the general level of park maintenance.

2. Make a series of improvements to reinforce the central core area of the park which contains the most important and popular facilities which surround the larger lakes such as Art Hill and Government Hill, the Art Museum and the Zoo.

3. Reorganize the road and parking system to form a loop road which promotes circulation around the core area but frees the core itself for more pedestrian use.

4. Restrict the location and extent of additional development to three carefully chosen Opportunity Areas outside the core area where only appropriate new facilities with minimum impact on the park should be built. Although major new facilities should not generally be encouraged in the park, they would be permitted, but restricted to three designated opportunity areas. Improvements in the park should be developed so that they do not overload the road system or reduce the amount of the traditional park landscape.

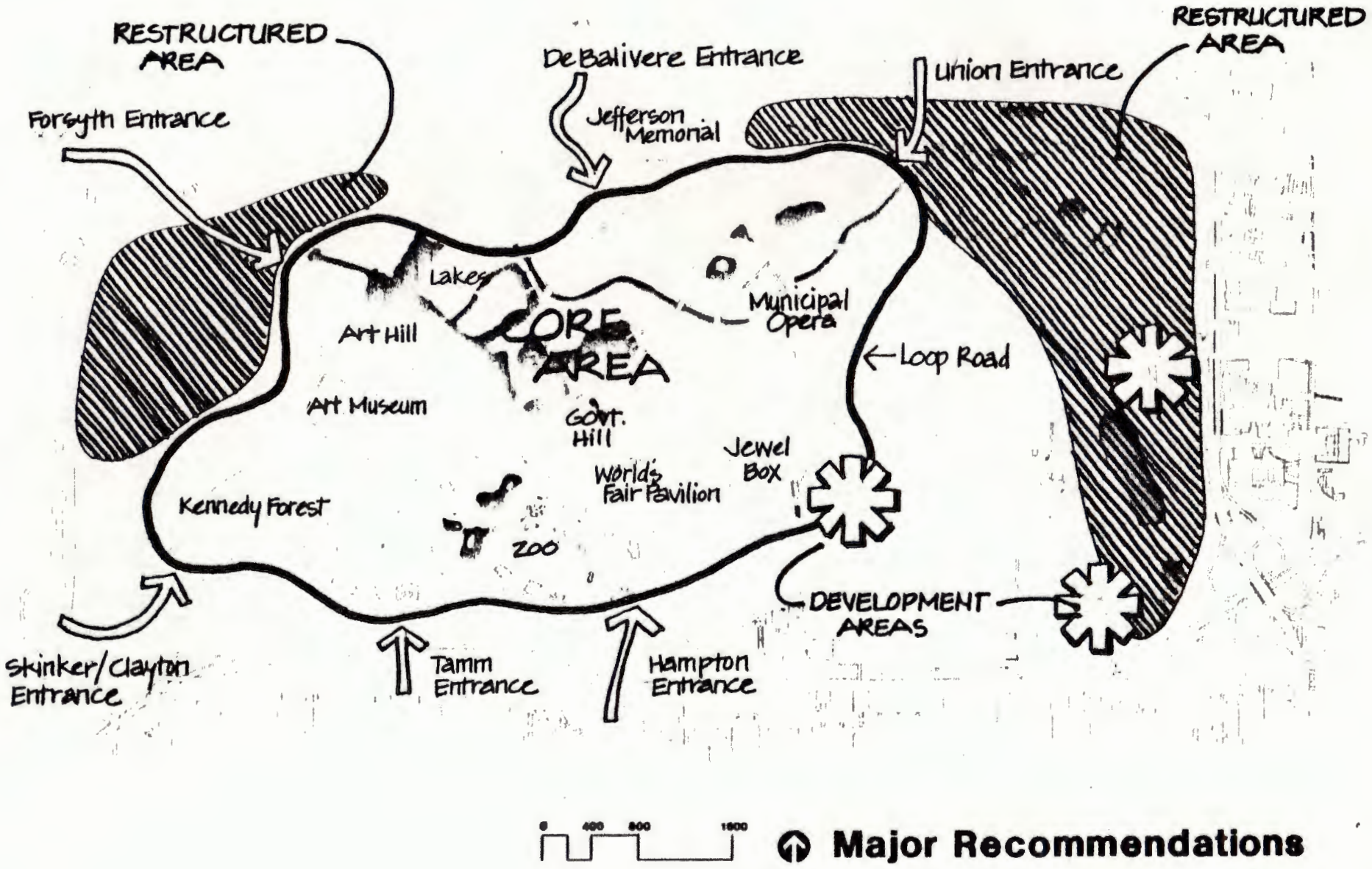
   It is imperative that proposals for new developments within any of the three Improvement Areas rigorously adhere to established guidelines. Specific guidelines have been prepared for each Improvement Area and are described in detail in Chapter Five.

5. Improve and restructure all other areas outside the core to encourage their return to passive recreation. Minor physical changes such as landscaping and pedestrian paths may also be provided in or adjacent to the three Opportunity Areas. The amount of land currently allocated for athletic fields and golf courses should not be increased.

These general recommendations are discussed in detail in the following sections of the Master Plan. A series of physical improvement changes are proposed and are included in these recommendations. These improvements range from enlarging

the lakes to the building of a large and sophisticated children's playground. Also included are a plaza and promenade in front of the Art Museum, a pedestrian mall at the foot of Government Hill, and the improvement of the passive park area around the edges of the Grand Basin, with the eventual return of Art Hill to general park use.

This is an ambitious Plan and every effort should be made to implement it over the next ten years, a period in which there will be great competition for limited funds. Yet, to strive for less would be to disregard both the tremendous contribution which Forest Park now makes and the opportunity to reinvest in the park's future potnetial for increasing its contricution to the qulity of life in the St. Louis region.


RESTRUCTURED AREA
Forsyth Entrance
DeBalivere Entrance
Jefferson Memorial
Union Entrance
RESTRUCTURED AREA
Lakes
Art Hill
CORE AREA
Municipal Opera
Loop Road
Art Museum
Govt. Hill
Jewel Box
World's Fair Pavilion
Kennedy Forest
Zoo
DEVELOPMENT AREAS
Skinker/Clayton Entrance
Tamm Entrance
Hampton Entrance
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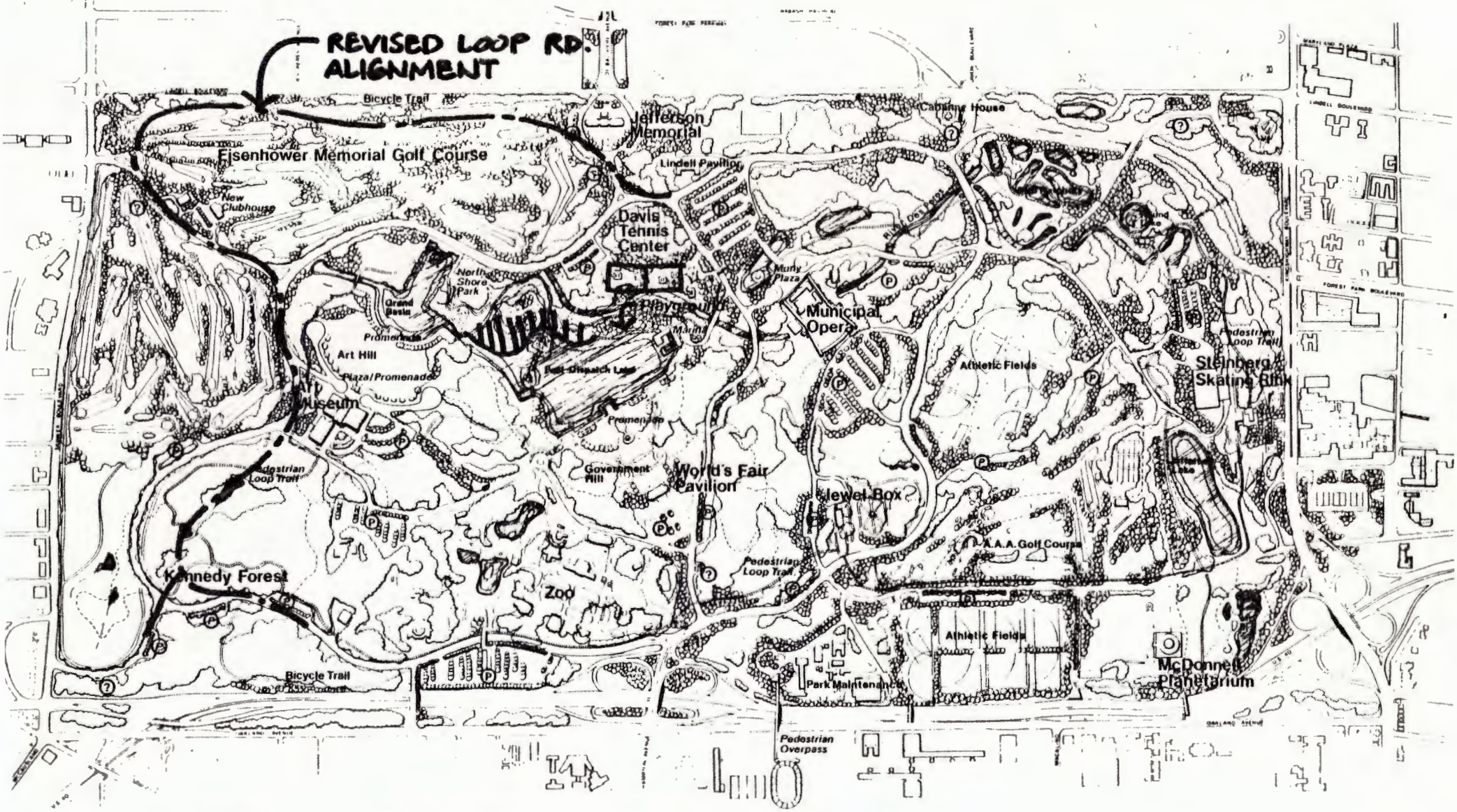
1600
Major Recommendations


REVISED LOOP RD. ALIGNMENT
Bicycle Trail
Jefferson Memorial
Cabinet House
Eisenhower Memorial Golf Course
Lindell Pavilion
New Clubhouse
Davis Tennis Center
North Shore Park
Grand Basin
Promenade
Playground
Marina
Municipal Opera
Art Hill
Plaza/Promenade
Art Museum
Pedestrian Loop Trail
Athletic Fields
Steinberg Skating Rink
Government Hill
World's Fair Pavilion
Jewel Box
A.A.A. Golf Course
Kennedy Forest
Zoo
Athletic Fields
McDonnell Planetarium
Park Maintenance
Pedestrian Overpass
Bicycle Trail
Pedestrian Loop Trail
Other Pedestrian Trails
New Information Areas
New Parking Areas
Existing Parking Areas with Landscaping Improvements
Proposed Tree Plantings
Existing Tree Masses
Note: Italics type denotes new features
0
400
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1600
Master Plan

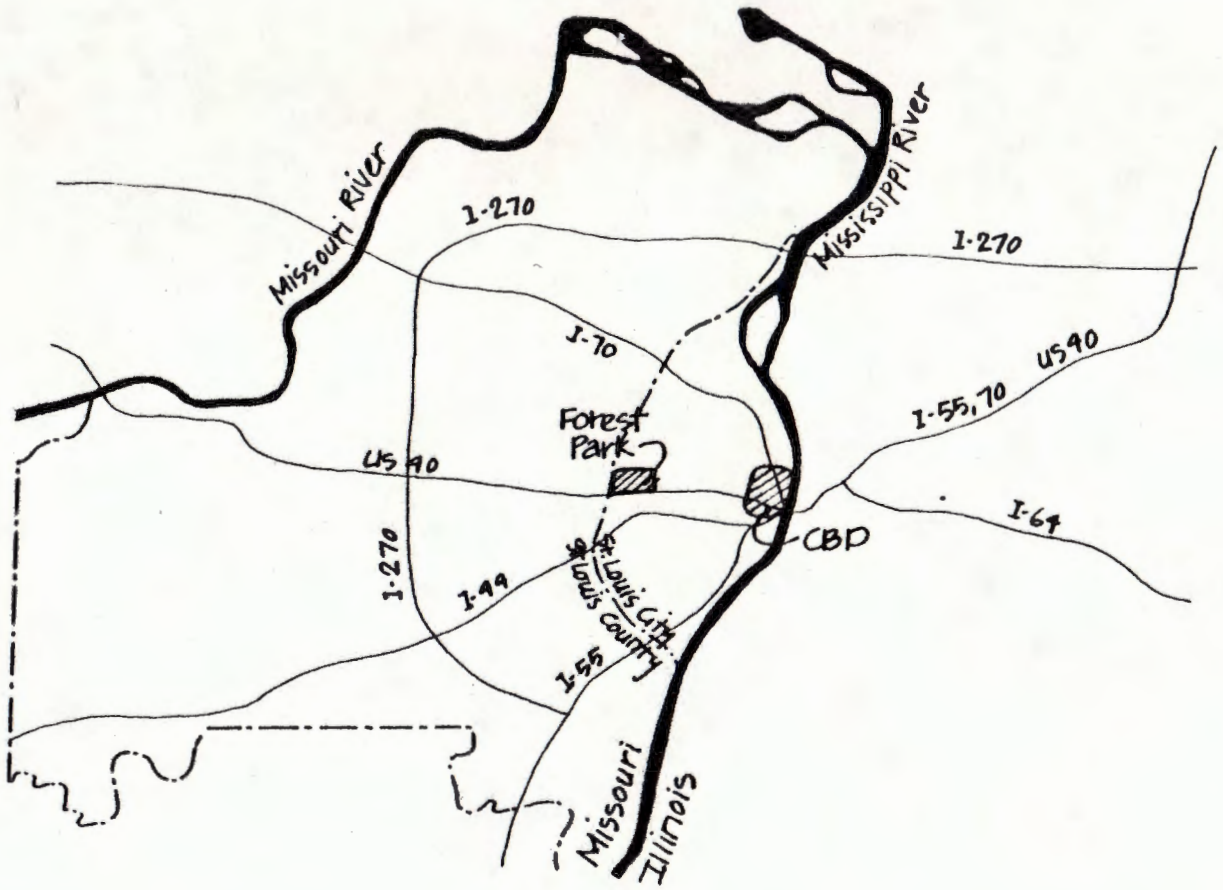
It is clear that St. Louis wants to keep, at its heart, a vibrant and exciting Forest Park. The City wants to preserve in Forest Park that which contributes to a sense of historical continuity and the quality of life; to rehabilitate what is viable; to rebuild and replace that which has outlined its usefulness; and to respond to the needs of the future.

To achieve this, the basic forces which will shape the future of Forest Park have been identified, their interrelationships understood, and creative efforts applied to synthesize the most viable plan of action. In St. Louis, as in other cities, the forces themselves are not unique, but the desired results are.

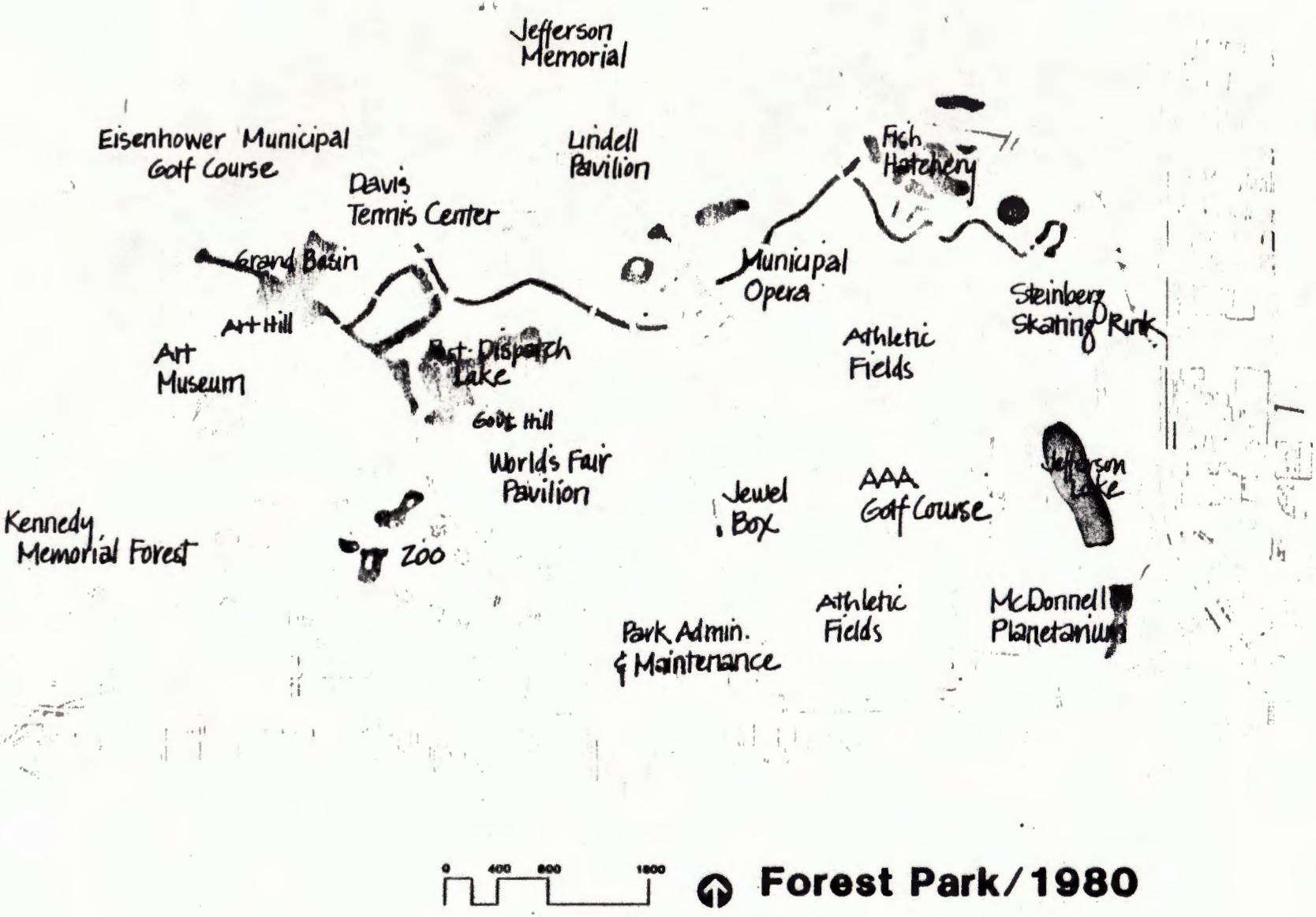
The Forest Park Master Plan culminates a process which spanned many months and involved private citizen and public agency representation.

The Plan is intended to guide improvements in Forest Park for the forseeable future. In this role it has two functions: (1) to define concepts for the future use of the park, and (2) to propose specific changes which can make the park more responsive to the needs of St. Louisans. The Plan attempts to respond to community needs from a long-range perspective. That is, it attempts to distinguish basic, long-term, open space needs from short-term recreational preferences.

The Forest Park Master Plan is composed of seven major sections. Included is this introductory section which provides the background necessary to understand the planning process. The following section is titled "The Role of Forest Park", an affirmative statement regarding the importance of the park, what the park should be, and how it must be conserved for future generations.



Forest Park's Location


Jefferson Memorial
Eisenhower Municipal Golf Course
Davis Tennis Center
Lindell Pavilion
Fish Hatchery
Grand Basin
Municipal Opera
Steinberg Skating Rink
Art Hill
Art Museum
Athletic Fields
Lake
Golf Hill
World's Fair Pavilion
Jewel Box
AAA Golf Course
Kennedy Memorial Forest
Zoo
Athletic Fields
McDonnell Planetarium
Park Admin. & Maintenance
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Forest Park/1980

The concepts which emerge from a definition of the role of the park are used, in subsequent sections, to arrive at specific recommendations which comprise the actual Master Plan.

The Plan itself includes recommendations in sections covering land use, circulation and the landscape. In the final section on implementation, the major recommendations are prioritized by project, assigned budgets, and related to various means of funding the implementation of the Forest Park Master Plan.

In order to better understand the recommendations made in the Plan, it is important to be acquainted with the history of the park and the planning process which led to this Master Plan. Discussions of each follow.

Forest Park has had a varied, interesting and controversial history. Since it was created it has been the focus of public open space, outdoor recreation and institutional development for the region.

The Forest Park Master Plan has drawn much from the history of the park. The Plan should be viewed as an extension of the use and development of the park rather than a departure from the past. Conversely, evolutionary vs. planned change characterizes the history of the park and this Plan also proposes certain changes. However, these changes have been recommended as part of an overall plan with the history of the park in mind and with much consideration of long-term open space needs rather than the preferences or pressure of the moment.

Between the 1874 plan and today, most changes to the park have been made without benefit of an overall plan. The 1904 World's Fair was carefully planned itself, but its severe impact on the natural systems of the western half of the park virtually assured that the original plan would not be implemented. Since that time, there have been many changes to the park. While some, such as the improvement of Highway 40, had adverse impacts and others, such as the erecting of various statues, have had relatively minor impact, all have occurred without the guidance of an overall plan.

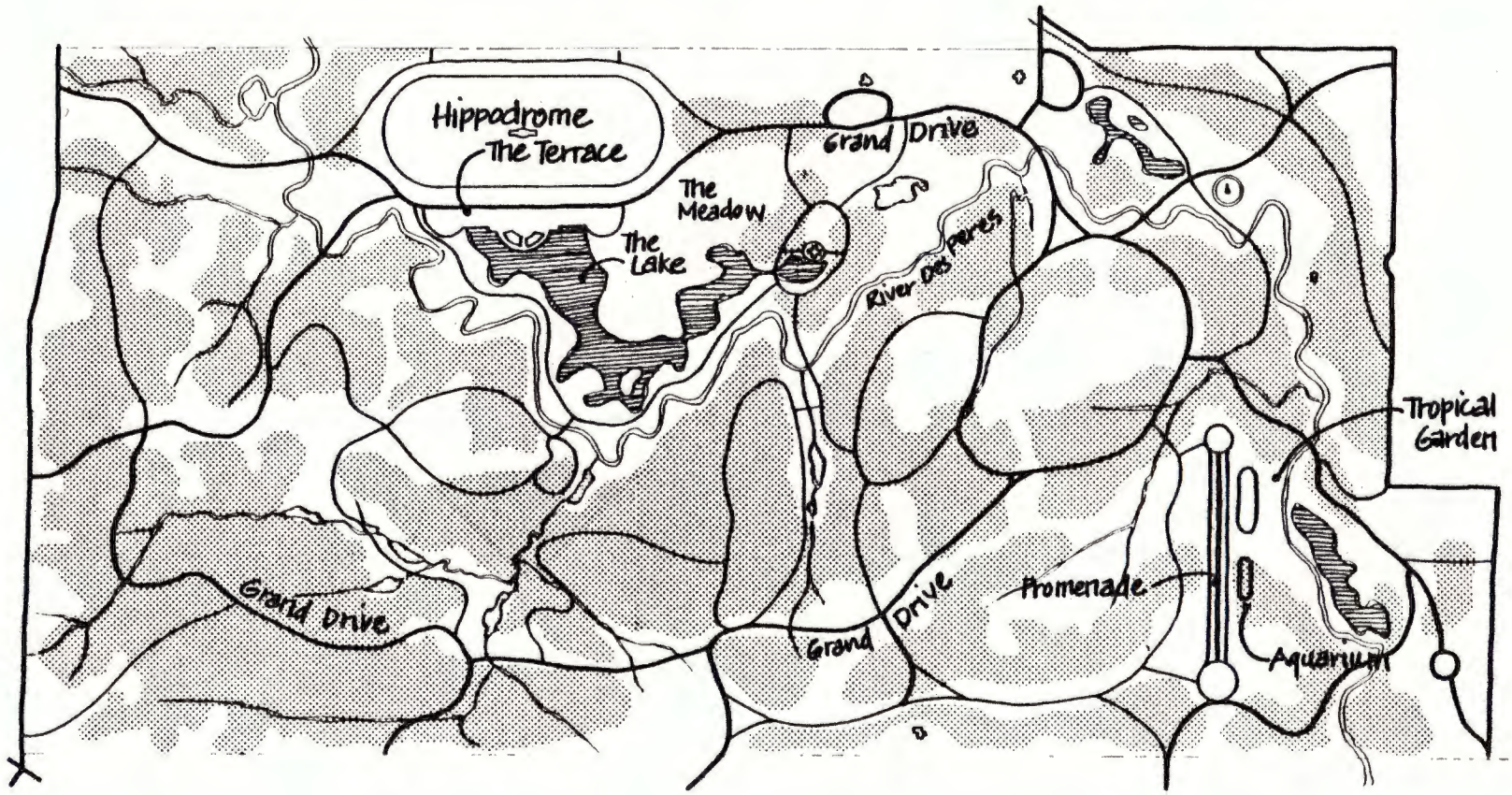
St. Louis is fortunate that after all of the incremental and unplanned changes, the park continues to be of such great value.

Part of the reason for the continued value of Forest Park is its location midway along the central line of development that reaches from the riverfront in downtown St. Louis to Clayton, the governmental and commercial center of St. Louis County. Along this line, Forest Park lies just inside the City

limits. At over 1200 acres, it is one of the largest city parks in the country. Its environments range from the dense wooded areas of Kennedy Forest to the carefully landscaped pastoral scenes set with lagoons in the eastern portion of the park. The many recreational and cultural facilities attract several million visitors each year. This is in sharp contrast to the situation over a hundred years ago when the park was created and public accessibility was limited.

Forest Park began as a dream of a successful real estate developer, Hiram W. Leffingwell, who understood the westward direction of the City's growth and realized that the proposed park would ultimately be surrounded by urbanized area. In 1870, he had a plan prepared for a 2,754 acre park more than a mile west of what was then the extent of urbanized development. In spite of intense opposition from owners of land on the proposed park site, including legal action, and amid much criticism concerning the park's remoteness and size, Leffingwell finally gained enough support in 1874 to successfully pass the legislation necessary in the Missouri legislature to allow the purchase of 1,380 acres of land.

Subsequently, the park site was acquired by condemnation for $799,995 in bond issue monies and was placed under the jurisdiction of a Board of Park Commissioners in 1875. A plan for the park's development was prepared that included the improvements of the well-wooded tract with roads, lakes and bridges. Until the turn of the century, only the eastern portion of the park was developed and its use by the public was aided by street car lines, which reached the park by 1885.

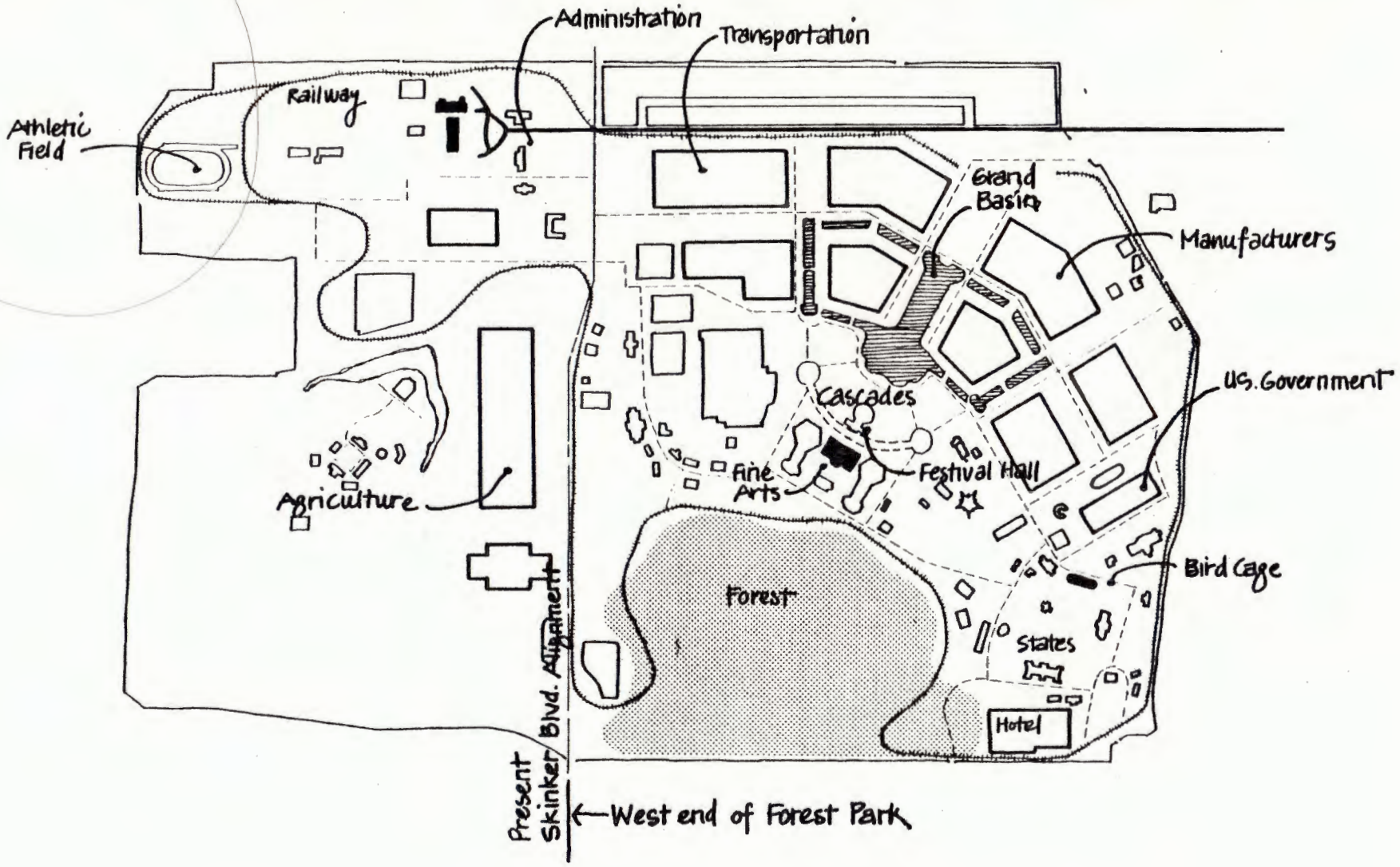


Original Plan/1874

Forest Park gained international recognition as the site of the Louisiana Purchase Exposition also known as the 1904 World's Fair. To encourage athletics in the park, the park commissioner granted permission in 1897 for the "Triple A" club to use a 125 acre tract in the northwestern portion of the park for a golf course, tennis courts and baseball diamonds. In 1904 the Club was relocated to its present seventy acre site near the McDonnell Planetarium. In 1962 Triple A became the object of controversy over its right to occupy public park land and in a resultant compromise, the Club agreed to open its facilities to the public on a fee basis. The hilly, heavily wooded southwestern portion of the park was called the "Wilderness" and was left relativley untouched by the Fair. The most intensively used part of the park was its central section which included the fan-shaped grand plan of the Exposition containing eight of the principal exhibit palaces and the Cascades on what is now Art Hill. This largest of all fairs, before or since, covered an area of 1,272 acres, reaching as far west as the present Big Bend Boulevard.

The World's Fair transformed the western part of the park into a temporary urban environment of large buildings surrounded by lagoons and formal landscaping. Preparation of its site called for grading the amphitheater shape of Art Hill, creation of lakes and lagoons, straightening and placing the winding River Des Peres in a tunnel and the cutting of thousands of trees on the sites of roads and buildings. Under the city ordinance providing for the use of the park by the Fair, the Louisiana Purchase Exposition Company was required to create a park-like setting on the site after the Fair's closing.

Among examples of the Fair's heritage are the Art Museum, the Zoo's bird cage, and the World's Fair Pavilion on Government Hill, built as part of the Park restoration in 1908. The Jefferson Memorial, present home of the Missouri Historical Society, was erected with surplus funds of the World's Fair. The bronze equestrian statue of St. Louis in front of the Art Museum, was a gift to the City from the Exposition Company in 1906.



World's Fair/1904

In 1913, the City selected 77 acres of Forest Park to be set aside for Zoo purposes. By 1916, the state enabling legislation was passed, the plan was approved by the electorate and a property tax assessment was approved to build and maintain the City's Zoo. Over 1,500,000 persons visit the Zoo annually, making it the largest attraction in the park.

The Art Museum was built as the Palace of Fine Art for the World's Fair and originally administered by Washington University. In 1907, the voters of St. Louis approved a tax levy to locally support the new museum, and by 1912 control was passed to the City. Since 1971, the Zoo and the Art Museum have been administered by the Metropolitan Zoological Park and Museum District.

Flights and races have been made by dirigibles, balloons, and airplanes from Forest Park since the 1904 World's Fair. A flying field was opened on the southeast side of the park and many airmail flights were made from it. The cricket field and golf course have been the site of recent balloon rallies and other sports events.

The founding of the Municipal Opera can be indirectly attributed to a 1914 event which took place on Art Hill. In celebration of the sesquicentennial of the founding of St. Louis, the history of the City was reviewed in the Pageant and Masque of St. Louis. Approximately 7,500 persons were in the cast of this spectacular four evening event located on a vast stage constructed out over the Grand Lagoon at the base of Art Hill. As many as 100,000 persons attended the event per night.

The desire for a permanent outdoor opera site eventually led to the construction of a stepped concrete auditorium floor and stage in Forest Park. On June 5, 1917, the Municipal Opera opened before an enthusiastic audience. During the ensuing war years, patriotic rallies and fashion pageants were held in the new theater. A regular series of weekly summer productions was initiated

in 1920. Millions of spectators have viewed the varied performances and the "Muny Opera" has become an entertainment highlight for summers in St. Louis.

In the years since the World's Fair, Forest Park has been continually developed including the construction of three City facilities. The Jewel Box was completed in 1936 as an outgrowth of the park's greenhouses. More recently, Steinberg Memorial Skating Rink was built in 1957 and the McDonnell Planetarium in 1963. The park has been reduced to 1,293 acres form the original 1,374, primarily due to acquisition for highways.

Some of the earliest types of games played in Forest Park were cricket, croquet and lawn tennis. The present nine and eighteen hole municipal golf courses were opened in 1912. Later, tennis courts were constructed at two locations in the park. During the 1910's, substantial areas in the eastern portion of the park were converted into athletic fields for baseball, softball, soccer, and football.

In recent years several controversial changes have been proposed for the park. Some, such as the Barnes Hospital parking garage, were implemented and others, such as the parking garage for the Checkerdome, have not been realized. These changes and proposals for change which eventually led to the preparation of this Plan, should be examined in context.

The original 1874 plan for Forest Park was implemented primarily in the eastern half of the park during the ensuing twenty-five years. This plan produced a passive rural setting laced with pleasant carriage roads. The setting contained some more active and formal uses. The 1904 World's Fair totally changed the western half of the park, with the exception of the Kennedy Forest. The environment which was returned to park use was much less natural in character. Over the years, this area has been further changed by the addition of most of the major facilities in the park.

In the early 1950's, Forest Park began to experience a series of inroads, noted above, which had the effect of reducing its land area and changing its environment. In the late 1960's, newspaper and editorial coverage of proposals to use park land both mirrored and contributed to public concern about the park.

In 1975, a major controversy about a proposal to build privately oriented parking in the park focused public attention on the need to define what should and should not take place in Forest Park. Further events, including the construction of an underground parking garage in the park adjacent to Barnes Hospital and the proposal by Children's Hospital to build a high-rise addition over Kingshighway adjacent to the east end of the park, brought the issue to a high level of public awareness.

Through the combined efforts of several members of the St. Louis Chapter of the American Institute of Architects and the Community Development Agency, a team of experts, called a R/UDAT (Regional/Urban Design Assistance Team), was brought to St. Louis to prepare a brief but concentrated analysis of the park. The charge given to the R/UDAT was:

> "Parks in general, and Forest Park in particular, tend to be viewed as static land uses. In this case, nothing could be farther from the truth. In fact, Forest Park has been changed substantially over the 100 years of its existence by the same pressures, both public and private, which affect the use of any piece of urban real estate. These pressures are active at this moment and will continue in the future to attempt to modify the park.
>
> The modifications are not necessarily bad. As part of a changing society, Forest Park must respond to some of these pressures in order to satisfy its users. On the other hand, Forest Park is a long-term public investment and a regional resource which contains an incredible variety and amount of institutional uses. Changes should therefore not be taken lightly.
>
> This R/UDAT is somewhat unusual. There is no single crisis which has made it necessary and Forest Park as a whole is not in any immediate danger. In fact, in the minds of most St. Louisans, Forest Park and its institutions are taken for granted. You are really here to create a constituency for the Park as a resource and to give some direction to its future use."

The R/UDAT Study occurred in the fall of 1976. The conclusions of the R/UDAT were accepted with varying degrees of enthusiasm depending upon many points of view. One important recommendation of the R/UDAT, which was adopted by the

Community Development Agency, was the need to prepare an analysis of park use and a Master Plan for the future of the park.

The User Demand Study by the St. Louis Research Group, Inc., was completed in 1978. This study, and an open space inventory with particular focus on the Kennedy Forest area, by the Missouri Botanical Garden, formed a base of information from which this Master Plan was prepared.

In the interim, the former Mayor of St. Louis appointed a group of twenty people to the Forest Park Master Plan Advisory Task Force. This group, composed of citizens and public agency representatives, was charged with reviewing all previous work done on the park and determining the next steps in the park's future. The unplanned and somewhat uncontrolled development of the park was the primary issue which necessitated a Master Plan. Traffic in the park had also become a major problem. The park's road system was causing extensive user inconvenience. In addition, city planners were considering a number of proposals to improve traffic in the Central Corridor, some of which could significantly impact the park. Security was also a problem for users, although this turned out to be more of a perception than a reality.

To address these problems, the Task Force determined that a consultant should be hired to prepare the Forest Park Master Plan. In March 1979, a Study Team headed by Team Four, Inc., and including CHNMB Associates, The Fleming Corporation, and Jack Leisch & Associates was selected to prepare the Master Plan.

2.C MASTER PLANNING PROCESS

The process of preparing the Forest Park Master Plan consisted of several exercises: understanding the existing situation; identifying the actual opportunities and drawbacks for change; illustrating and evaluating alternative planning approaches for the park; and, developing a consensus about the desired future for the park. This consensus was based on a careful definition of the unique role of Forest Park. The final step was the preparation of the actual Master Plan to guide the park's future and a strategy for implementing the Plan.

The Study Team undertook a three phased planning process for preparing the Forest Park Master Plan:

I. Analysis - This initial phase of the work included a comparative study of other large urban parks and a review of data on Forest Park. During this phase, a community participation plan was prepared to gather ideas and criticism from individual citizens and special interest groups.

II. Decision Making - The second phase dealt specifically with Forest Park's role in St. Louis and its future. During this phase, alternative planning approaches were investigated and a policy for the park's future was outlined.

III. Master Planning - This effort consisted of identifying the planning solutions for the park and evaluating them based on the decisions made during Phase II. This led to the formulation of a Draft Master Plan and the identification of means for its implementation.

Community involvement has been an important factor in the process of preparing the Forest Park Master Plan. The purpose of community participation was to assure that a spectrum of opinions and interests were gathered for consideration in the planning. Broadly defined, community participation included the relationship between the Study Team, the City, special interest groups and the general

public. Only by gathering input from all of these sources during the planning process could any major plan be understood, supported by the public and assured of successful implementation.

The Community Development Agency and the Forest Park Master Plan Advisory Task Force have acted as client and steering committee respectively. They have reviewed all tasks and recommendations as accomplished, and are vehicles by which the Master Plan is to be communicated to the public.

In addition, two public workshops were conducted, with sixty to eighty people attending each meeting, so that ideas could be gathered at the outset of the process as well as during the time that conclusions were being drawn by the Study Team. The workshop process was one of the Study Team and the participants becoming jointly aware of the existing situation and mutually arriving at a concensus as to the direction of the planning effort.

The workshop format was a process which emphasized interaction, rather than presentation to the public. Public participation in the workshops provided subjective data, constructive criticism of the Study Team's proposals and aided in arriving at a concensus about formulating the Plan.

During the preparation of the plan, two other studies of importance were produced for the City government: the Urban Lakes Study and the Urban Parks and Recreation Recovery Plan (UPAR). The conclusions of each have been incorporated into this plan.

The substantial amount of time which it has taken to prepare and present the plan to the public reflects the complexity of the process and its attempt to deal with the public sensitivity to any changes proposed in Forest Park.

The Public Workshop

3.0 THE ROLE OF FOREST PARK

Much of the debate about Forest Park has been based on differing perceptions of the role which the park should play. Therefore, it is important to define that role so that further conclusions about facilities, land uses, traffic patterns and programs can be clearly understood.

The formulation of a statement about the role of Forest Park was a point of major importance in the Master Plan study. The Study Team worked with the Task Force in this effort and drew heavily upon the information obtained through the citizen particiaption workshops.

To begin with, Forest Park has been the crown jewel of St. Louis' park system since its purchase in 1875. Throughout those 105 years, it has experienced a substantial amount of evolutionary and unplanned physical changes. More changes will undoubtedly be experienced in the future. But what kind of change is good for the park?

The fact that the park may be somehow altered in the future is not as important as the process for determining precisely what change will be most appropriate.

This plan is the beginning of the process for evaluating change. Suggested changes should be reviewed in the context of their relationship to the master plan and the anticipated impact they will have on the park. The process for change includes a review of all proposed modifications to the park by the Mayor's Office, the Director of Parks, Recreation and Forestry, and the Community Development Agency. The specific process for change is outlined in the "Implementation" section of this plan.

But what about changes that will occur as a result of the implementation of this plan? What kind of change is good for the park and the community?

These questions actually relate to changes which will enhance the overall effectiveness of the park; for these are the changes to be encouraged. In order to make choices, the role of the park must be defined. Forest Park's role is complex, and there are several factors which contribute to that role:

- the park's uniqueness,
- the park's function as a regional resource, and, most importantly,
- the beauty and scenic qualities of the park.

The park's beauty and scenic value will be the basis for the park's enjoyment, regardless of future changes in types and levels of park activities and park users.

The erosion of some of the park's beauty, caused by a combination of lack of attention and allowing unplanned development within the park, has led to a critical situation. Unless this trend is reversed, all of the functions within the park will suffer severely, since they will no longer exist within the context of beauty and serenity for which they were originally located in Forest Park. A primary objective of further changes in the park should be to directly and methodically enhance the beauty and scenic value of the park so that, in turn, the park's value to all St. Louisans is increased.

Forest Park is, and should continue to be, an attraction to the people of the entire St. Louis area. It should be valued on the same high level as the Gateway Arch, the Riverfront complex and the rural open space resources in the Meramec River Valley. The park's functions and role are completely different from these attractions, yet it complements them by providing the base for urban public recreation in St. Louis.

As both a regional park and a City park, Forest Park draws people from the entire St. Louis area and beyond. It is appropriate that the level of the park's use should be increased as much as possible to serve this diverse group.

The park now provides and should continue to provide for many of the recreation, open space, and leisure needs of the region. The park's importance in the region lies partially in the uniqueness of each of its elements: the large size of its land area; the sheer number and size of its improvements such as playing fields, lawn areas and lakes; and the unique regional facilities located within it.

Forest Park is as unique in the City park system as it is in the region. The park should maintain its unique status, and attempts to make it just another park in the system should be resisted. Special attention is needed and deserved to ensure that the park will continue to be the best and most important urban open space in St. Louis, as well as the most scenic setting in the region for institutions, special events, and for general use.

Aerial Photograph of Forest Park

4. ORGANIZING CONCEPTS

Underlying the Forest Park Master Plan is a series of five organizing concepts. Some of these concepts are drawn from the existing form and function of the park itself, such as the road system. Other concepts respond to the aspirations described in the previous section of this report, such as the park's role as a unique, regional resource. These concepts do not deal with specific proposals for preservation or improvement. Rather they act as a framework of ideas and ideals to which the parts of the plan can be attached.

The five organizing concepts which are discussed in detail in this chapter are:

- Reinforcement and Improvement of the Core Area,
- Creation of a Loop Road System,
- Restructuring and Improvement of the Passive Areas,
- Restricting and Defining Future Development, and
- Accepting Limited Responsibility for External Problems.

The future of an area as important as Forest Park includes opportunities for improvement far beyond what can be achieved in the near future. These concepts, therefore, can extend beyond the actual recommendations of the Master Plan whose improvements are intended to cover the next ten to fifteen years. In this way, all of the improvements fit into strong concepts, and even if the steps which are taken are quite small, the park constantly increases its ability to serve St. Louis.

4.A REINFORCEMENT AND IMPROVEMENT OF THE CORE AREA

A series of improvements is recommended to reinforce the central core area of the park which contains the most important and popular facilities such as Art Hill, Government Hill, the Art Museum and the Zoo, which surround the larger lakes.

The physical relationships between uses, especially in the core area, are important in determining the ability of the park to satisfy the needs of its users. While certain uses in the park exist independently (primarily the active recreation facilities) and are part of the park's attraction, they are not as crucial as those which are interdependent and which form the core area of major park attractions.

These interdependent uses make the park greater than the sum of its parts. In order to increase the enjoyment of the park, these uses must be made more mutually reinforcing. Since most of them exist in the west-central section of the park, this section has been defined as the core area. Improvements should be considered which reinforce the core and shift incompatible uses to other areas.

The objective should be to create a core area which encourages the use of multiple facilities and activities. It should be a place where the environment between facilities is as important as the facilities themselves.

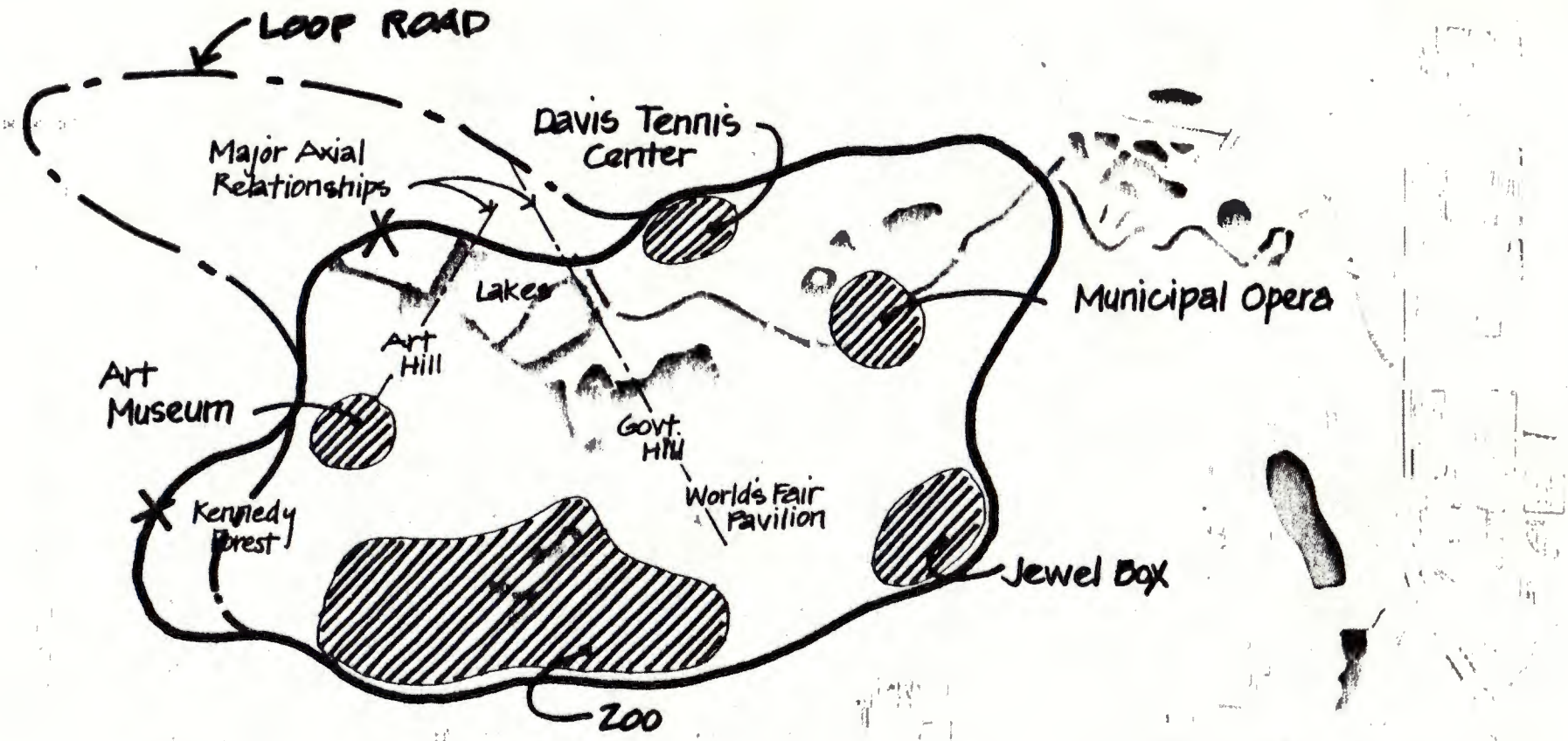
The core area should be a contemporary version of the classic turn-of-the-century park, an auto-free world of promenades and walkways surrounding the lake system. Close attention should be paid to the design of views from one area to another and to the visual relationships which are products of the World's Fair era. Of special importance are the visual axis between the Art Museum and the Grand Basin and the axis from the World's Fair Pavilion down and across the fountain on Government Hill.

4.B CREATION OF A LOOP ROAD SYSTEM

The road and parking system should be reorganized to form a loop road which promotes circulation around the core area but frees the core itself for more pedestrian use.

Traffic in or through this core should be discouraged by the use of a loop road around it. The core itself should be reserved for safe, pleasant pedestrian use. The loop can also directly serve the various active structured recreation facilities outside the core area.

Reclaiming park land from roadways and inappropriate forms of development should also be a high priority in the future. By this process, a substantial net gain in the overall beauty and scenic value can be achieved as well as a better balance of uses.



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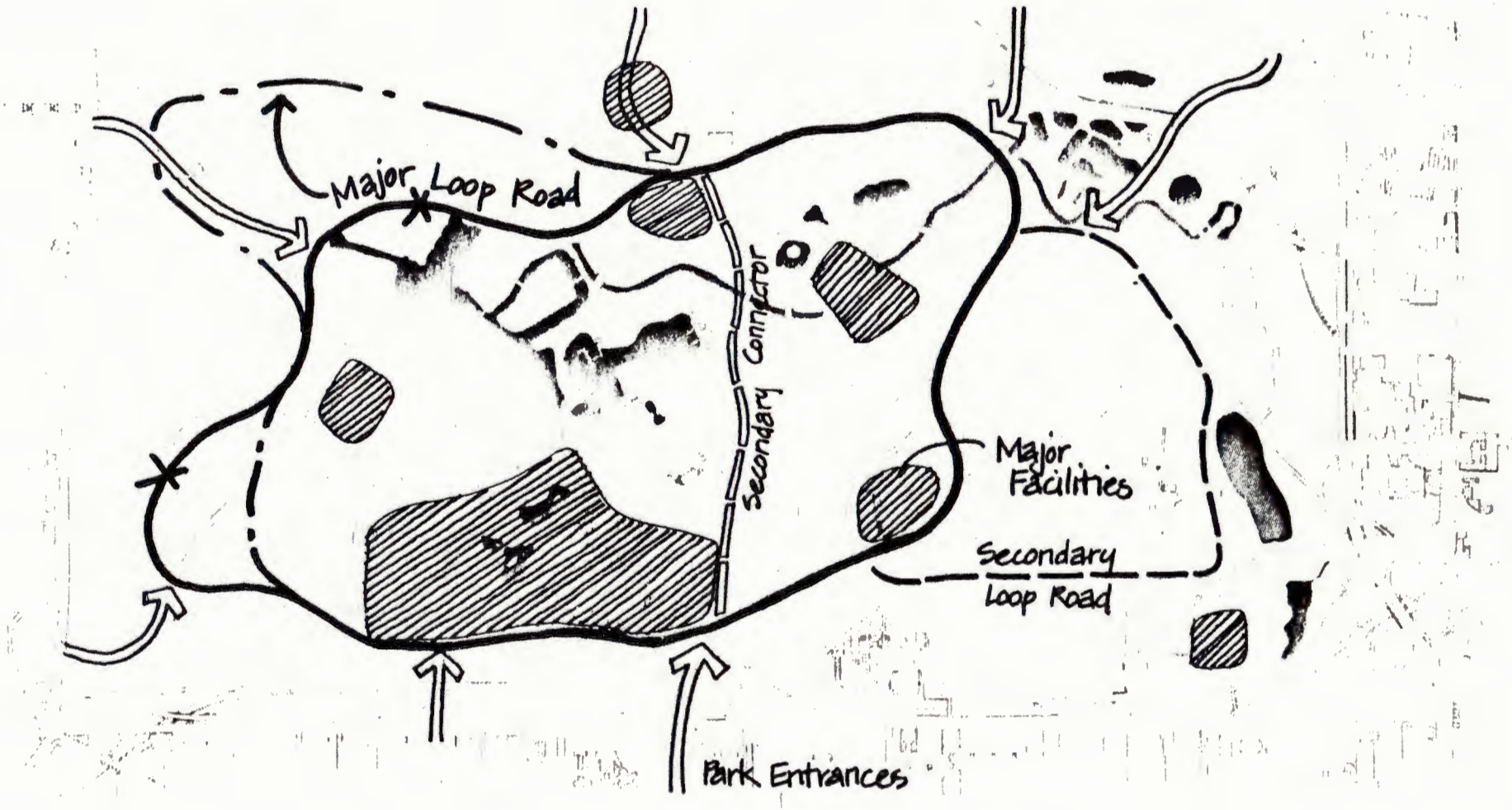
Core Area



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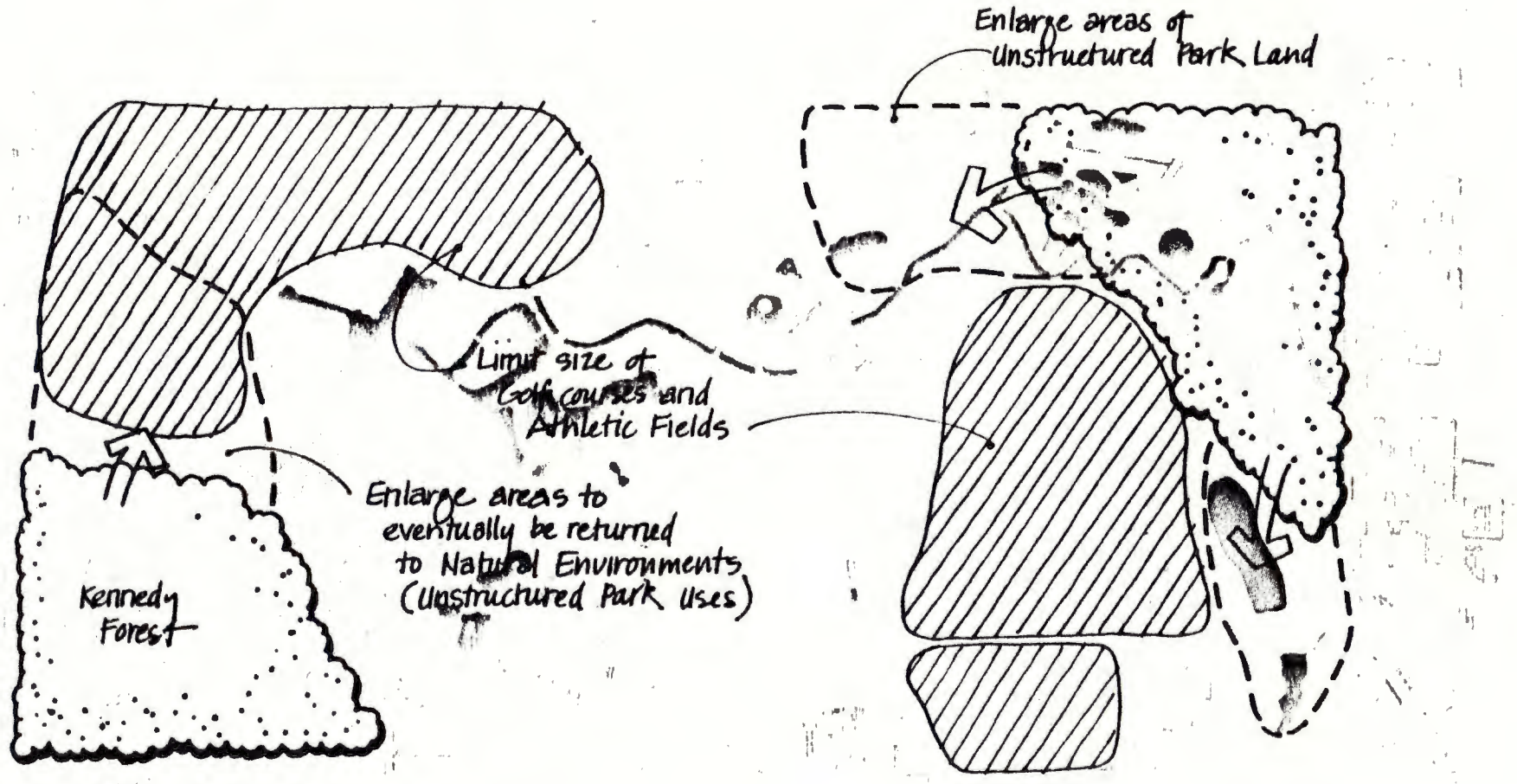
Loop Road System

4.C RESTRUCTURING AND IMPROVEMENT OF THE PASSIVE AREAS

Areas outside the core should be restructured and improved to encourage their return to traditional passive recreation. Athletic fields and golf courses should be contained in size since they presently take up a large share of the park.

At the present time, the majority of usable park land outside the core area is devoted to highly structured recreation such as the organized sports of golf, softball and tennis and a few City institutions. Much of the park land which in theory is devoted to unstructured, more passive, recreation such as picnicking, bicycle riding, walking or enjoying nature does not function well for two reasons. First, these areas are limited in usable size by the vast number of roads which bisect the area. Second, improvements such as glades, meadows, walkways, benches and drinking fountains which would encourage this type of use are lacking or are in poor condition. A rebalancing of these areas of the park can be accomplished by shifting the use of some land from structured to unstructured recreation use, by making needed improvements to the land and facilities already devoted to unstructured recreation, and by converting land which has been unusable due to the overabundance of through streets to unstructured park land.



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Changes Outside the Core

The location and extent of any future development outside the core area should be restricted so that only appropriate new or expanded facilities with minimum impact on the park will be built. These should be designed so that they do not overload the park's road system or reduce the amount of traditional park landscape in either a functional or visual way.

Among the reasons for excluding uses from the core are high traffic impact, unavailability of land, or the existence of development which the proposed facility could complement outside the core area. Outside the core area, opportunities exist to develop certain independent uses which would benefit the park but which cannot be accommodated in the core.

Existing uses outside the core area should, where appropriate, be reinforced or expanded as opposed to introducing new uses. Particularly important opportunities lie in areas such as Kennedy Forest and the wide band of land along the northeast and east sides of the park. The Steinberg Skating Rink, the McDonnell Planetarium and the Jewel Box are located within this area.

The inclusion of further development of major uses should be predicated upon several criteria. The location and magnitude of development should be compatible with the Master Plan's Opportunity Areas section of this report. Any negative impacts such as removal of open space should be compensated for according to the described in that section. The development guidelines described in the Opportunity Areas section of this report should be followed. These criteria are designed to produce a net gain in the value of the park's open space. Finally, the use shall be directly related to the existing facility within the opportunity area.

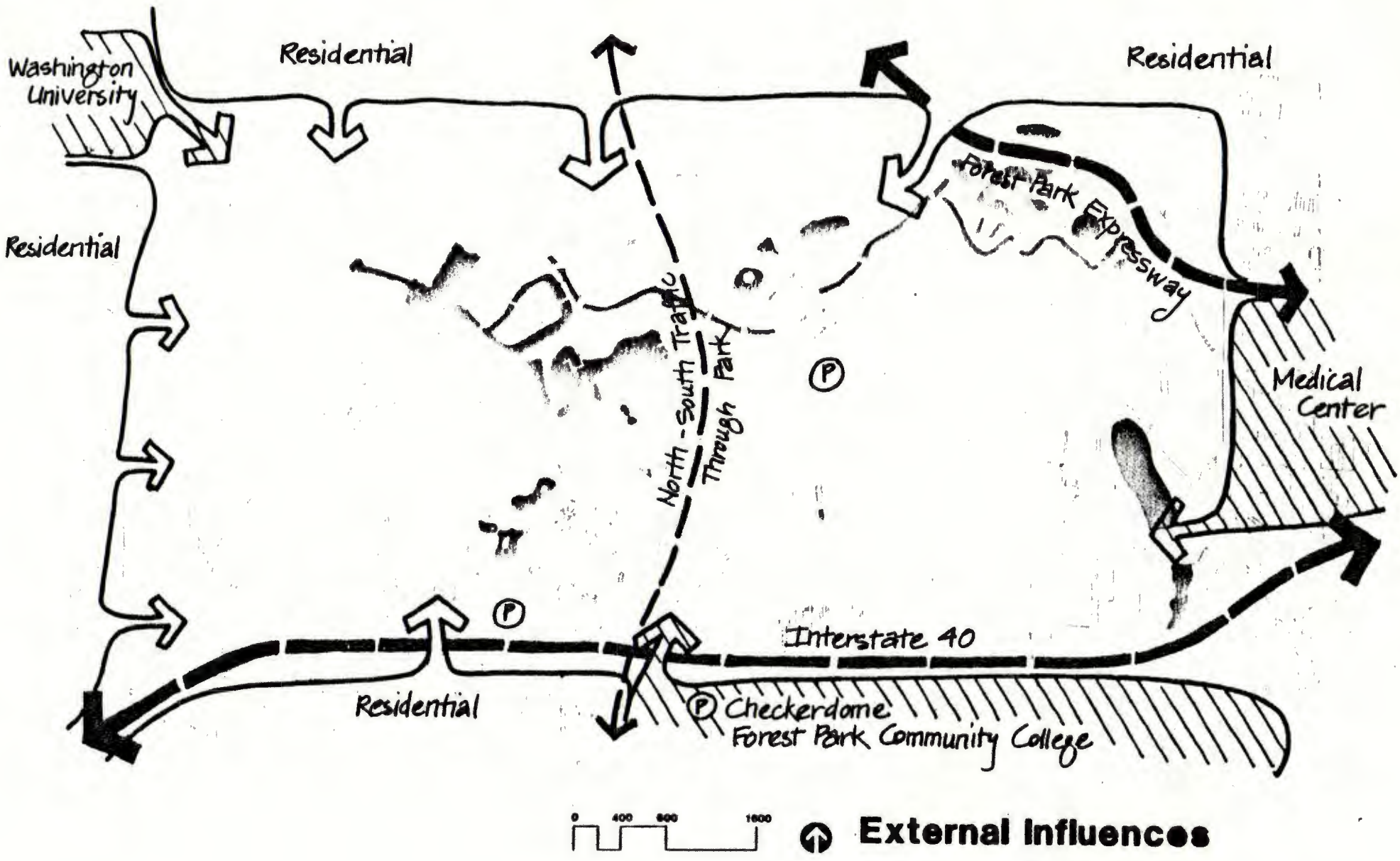
4.E ACCEPTING LIMITED RESPONSIBILITY FOR EXTERNAL PROBLEMS

The history of the park clearly illustrates that external influences have been responsible for reducing the size of the park and causing problems within the park itself. The two most obvious examples are the highways which border the park (U.S. 40 and the Forest Park Expressway) and the Barnes Hospital parking garage. Essential to preserving the park, therefore, are significant efforts to block such further changes and use of the Master Plan to define in detail the location and extent of responsibility for solving external problems which will be acceptable for the park.

Needs external to the park, whether for facilities or special events, should be included only when and if they can be compatible with park functions and environments. In addition, real estate development adjacent to the park should be regulated to minimize its impact on the park.

As an example, the resolution of traffic and parking issues in the park should be based primarily on the park's internal needs, rather than on the needs of the City street system. This does not necessarily mean, however, that no through traffic should be allowed in the park.

The five concepts for the Forest Park Master Plan are discussed in detail in the following sections of this report. In each case, recommendations have been made and specific projects and budgets identified for modifying the park within these concepts.


Washington University
Residential
Residential
Residential
Residential
Forest Park Expressway
North - South Traffic Through Park
Medical Center
Interstate 40
Residential
Checkerdome
Forest Park Community College
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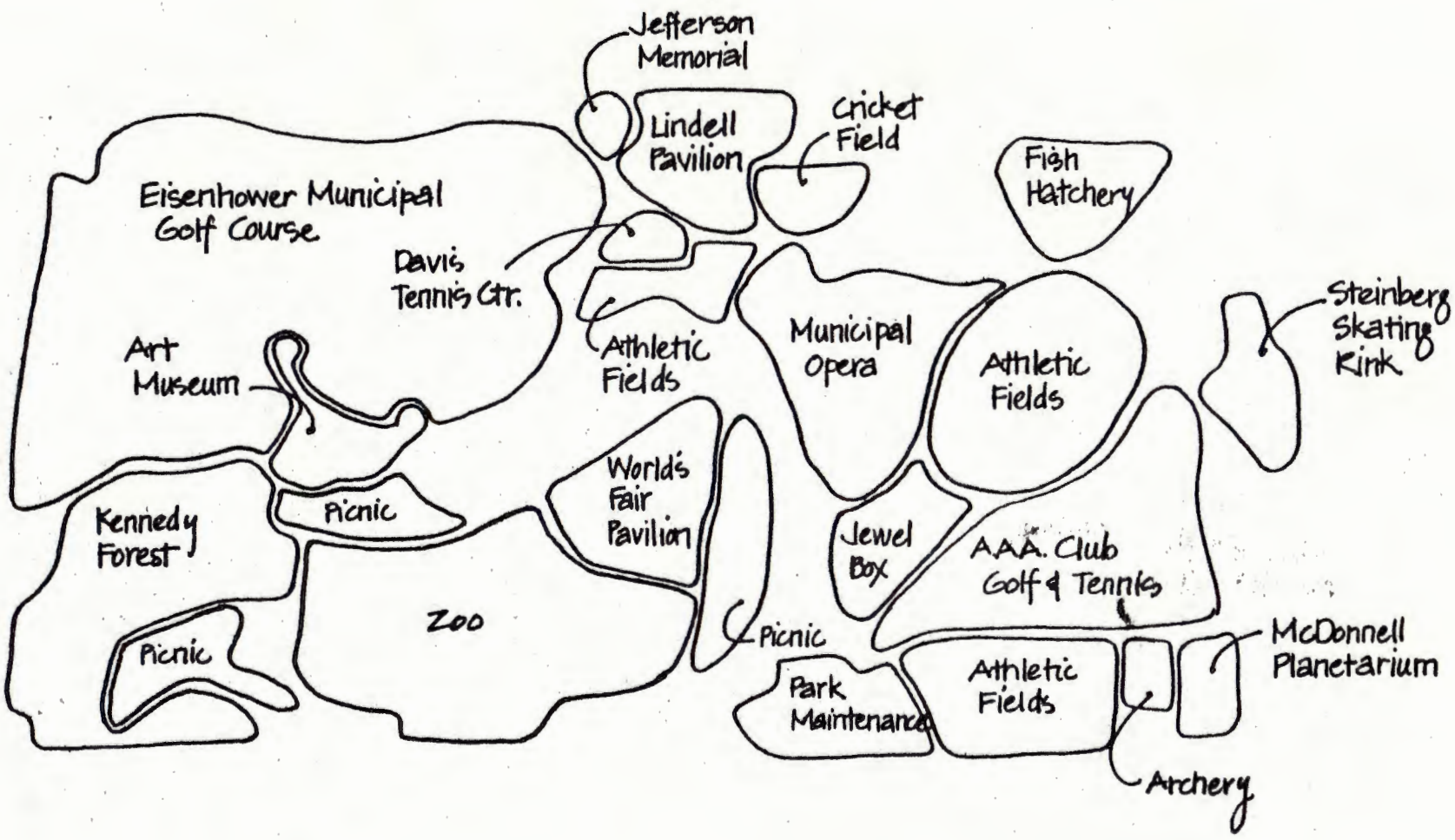
External Influences

5. LAND USE

The description of the Plan and the series of actions for Forest Park which can now be pursued is the purpose of the remainder of this report. This first section on Land Use is followed by sections on Circulation, Landscape and Implementation. An ambitious Plan and a complex series of actions are proposed and yet, this is not a particularly radical Plan and the actions are not particularly severe or spectacular.

The Plan and the actions do not attempt to create a new park. They propose to conserve, reorganize, update, and reinforce a park which already exists and needs only to be carefully and thoughtfully modified in order to be substantially improved.



Existing Uses

5.A FUNCTIONAL AREAS OF THE PARK

Forest Park is a complex system of uses, environments, and support facilities. It is possible, however, to divide the park into five main functional areas based on existing conditions. These areas are shown on the accompanying map. They are as follows: the core area, two active sports areas and two areas of unstructured activities. The division of the park into functional areas is for analytical and planning purposes. It is not intended to preclude the inevitable and appropriate overlapping of compatible uses which occurs in any major public open space.

Core Area

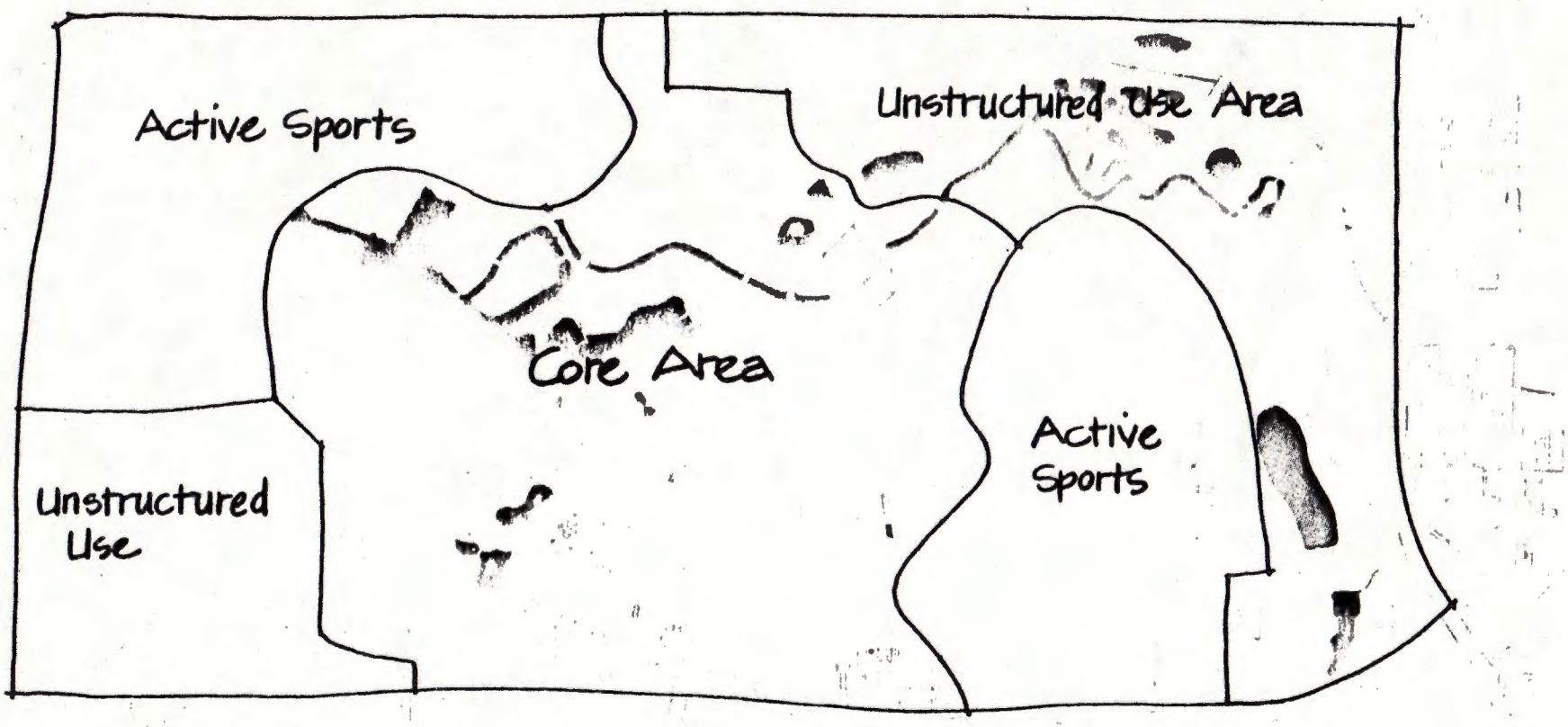
The core area is the area of highest use located in the center of the park. It includes the main lakes and most of the park's major institutions such as the Zoo, Art Museum, Jefferson Memorial and Municipal Opera. It also contains the most identifiable and highly used park landscapes: Art Hill and Government Hill. The area is crisscrossed by many roads used to access the facilities in the area and to move traffic across the park.

Active Sports

These two areas of the park are primarily devoted to golf, but also include major groups of playing fields for softball and football. These relatively flat areas are located on either side of the core area, to the northwest and the east. The playing fields are one of the most important use and traffic generators outside of the core area.

Unstructured Activities

The southwest corner of the park and the northeast and east sides of the park are environments which are less defined in terms of use than the rest of Forest Park. The only natural wooded area within the city park system, Kennedy Forest, is in the southwest corner.



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Functional Areas

The northeast and east sides of the park are composed of a variety of functional elements and developed areas within an overall passive environment which might be termed pastoral since it is composed of lawn areas and a variety of types of trees.

Relating this functional division back to the previously discussed organizing concepts, it should be noted that places exist where these basic divisions should eventually be modified. The modifications are oriented toward an increase in the areas for unstructured activities rather than active sports, and return to a more natural landscape in the northeast and eastern areas of the park.

In terms of the Master Plan itself, this division of the park into functional areas is important to reinforce as a general planning principle and as a basis for making changes to be made in the park. The basic division should be reinforced and should be more well-defined by edge conditions and by the types of activities encouraged in each area.

The core area contains the most important and most active uses in the park. While the intensification of this area is appropriate, this should not be viewed as the need to add many more institutional uses and buildings to the area. Rather, a few new uses should be added to widen the range of users who can be served, such as the elderly and the young.

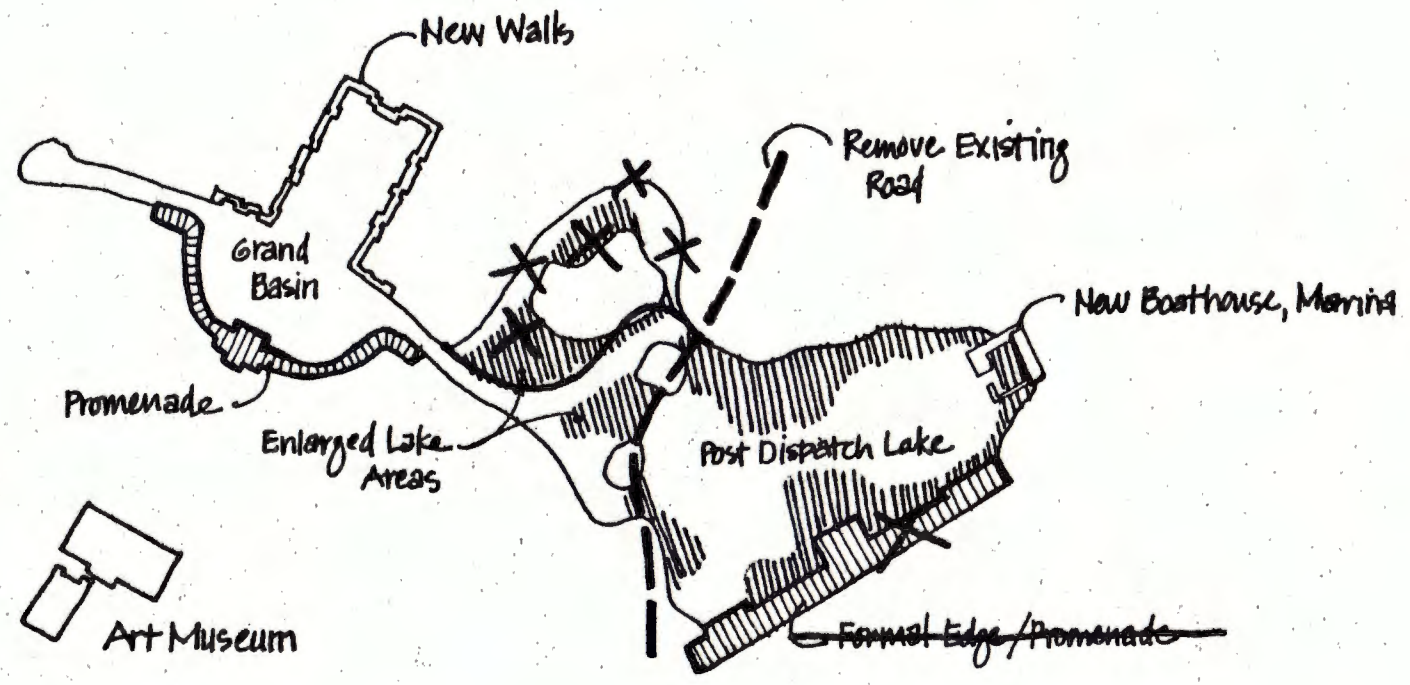
The most important planning and design goals in this area are to improve the environment between major uses and to improve the secondary facilities in the area, rather than to concentrate on the major institutions.

Lake System

The key component among the secondary facilities in the core area is the interconnected lake system composed of Post-Dispatch Lake and the Grand Basin, a remnant of the World's Fair development. Presently, both of these lakes need deepening and bank stabilization. The connection between the lakes is tenuous, narrow, and passes under a major roadway (Washington Drive). The connection is crossed by the third fairway of the 18 hole Municipal Golf Course and fairway 17 crosses the northern portion of the Grand Basin. Both situations cause inconvenience to golfers and serious safety problems for boat users.

The combination of auto traffic activity and noise across the lakes; golf fairways with their disruption and danger to lake users and pedestrians; and the condition of the lakes themselves severely limits the use and enjoyment of this area.

It is proposed that a major enlargement of the lakes be accomplished by removing some of the land between Post-Dispatch Lake's northwest side and the western loop of the channel which now creates a large island east of the Grand Basin. This enlargement and the concurrent deepening of the entire lake area will provide for a substantial increase in water quality and usable surface area.



Lake System Changes

Visual quality will be increased by the view of a relatively large expanse of water and general environmental improvement due to the removal of the traffic activity and noise from Washington Drive.

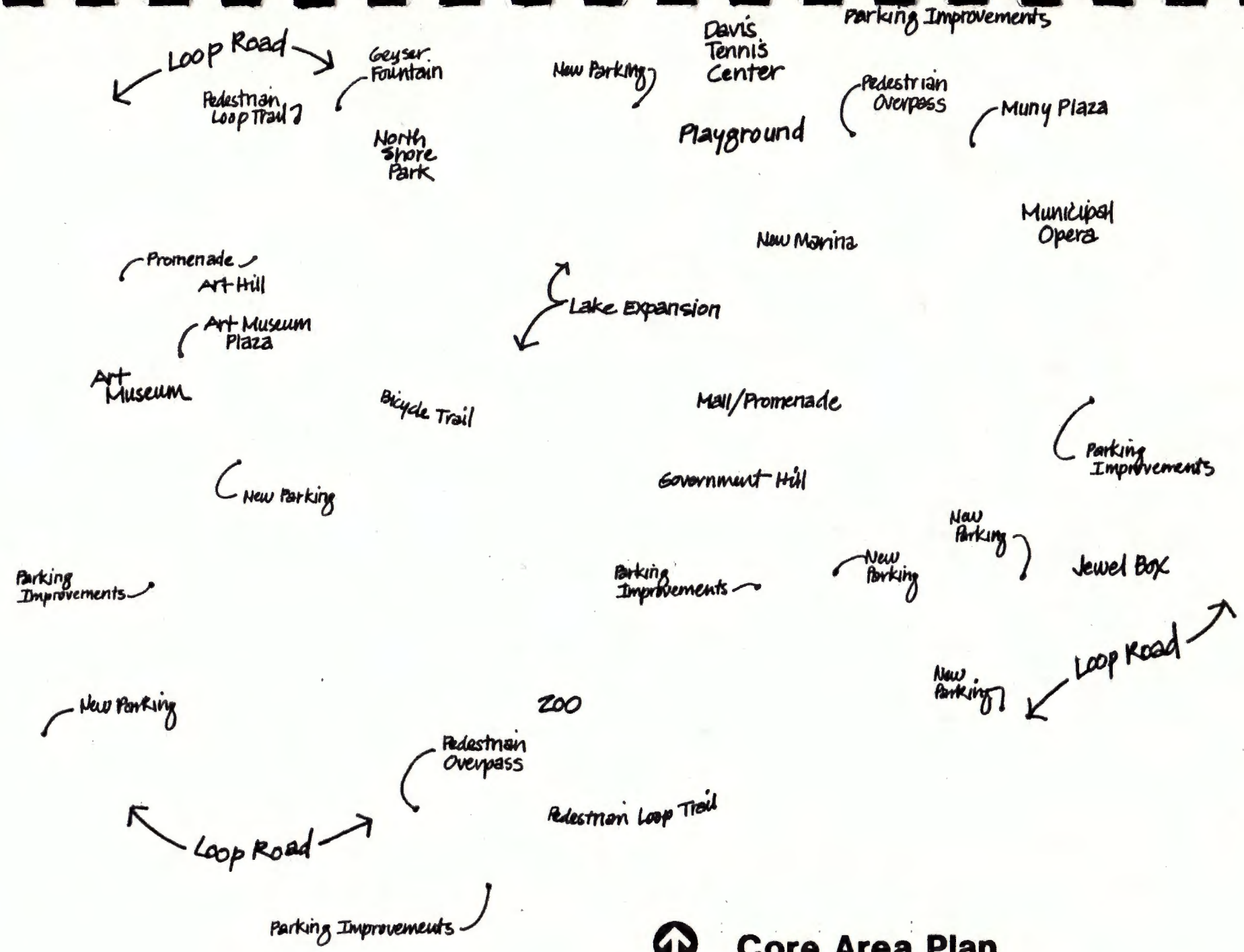
The result of these changes should be increased use and enjoyment of the lakes for fishing and rental boating. Larger and more varieties of fish would be able to live in the deepened lakes and much more boating could be accommodated. In addition, the use of the lakes for special events such as regattas for small sailboats should be greatly enhanced. These special events can greatly contribute to the interest, color, and vitality of the core area.

A variety of lake edge improvements should also be made. These relate to the development of the adjacent land areas and are discussed in the following sections: Art Hill and the North Shore Park. In general, however, pedestrian walkways should be created around the edges of the major lakes.

Art Hill

The Art Museum, the Statue of Apotheosis of St. Louis (1906), the landform of Art Hill, and the view across the symmetrical Grand Basin form one of the finest and most spectacular public environments in the region. This environment can be enjoyed visually from either end of the axis, but because the fourth fairway of the 18 hole Municipal Golf Course cuts across Art Hill, the area can not be used for the kind of unstructured recreation for which it is so superbly suited. Only during snow conditions does Art Hill become intensively used for unstructured recreation in the form of sledding.

During good weather, Art Hill is the scene of a substantial recreation conflict between golfers and others who wish to use the area more informally. This conflict is both inconvenient to golfers and dangerous to non-golfers. The same condition exists around the edges of the Grand Basin where fairway 17


Loop Road
Geyser Fountain
Pedestrian Loop Trail
North Shore Park
New Parking
Davis Tennis Center
Parking Improvements
Pedestrian Overpass
Playground
Muny Plaza
Municipal Opera
New Marina
Promenade
Art Hill
Art Museum Plaza
Art Museum
Lake Expansion
Bicycle Trail
Mall/Promenade
Government Hill
Parking Improvements
New Parking
Parking Improvements
New Parking
Parking Improvements
New Parking
Jewel Box
Loop Road
New Parking
Zoo
Pedestrian Overpass
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crosses the area to the north. This, and the other three fairways in the area south of Lagoon Drive, effectively preclude the traditional urban park activities which are in great demand today. These activities include strolling through an environment of beautiful trees and well-kept lawns, experiencing the lake edges and activities along these edges, spending time just sitting on a park bench in a shaded grove of trees on a warm day or simply walking across a spectacular landscape such as Art Hill.

In addition to these forms of passive park use, Art Hill has great potential for providing active yet unstructured recreational pursuits such as kite flying, informal ball throwing and running games with small children. No other area of Forest Park is so open, accessible, and spectacular as Art Hill between the Art Museum to the edge of the Grand Basin.

Unstructured use should be encouraged on Art Hill. The improvements which will assist in this effort begin with a promenade along the Crescent at the top of the hill. This would be a wide walkway with pedestrian amenities such as benches, drinking fountains and special lighting. Parking along the Crescent should be eliminated on the north side. The road crossing in front of the Art Museum should be replaced with a pedestrian plaza stretching from the Museum steps to the Statue of St. Louis. Art Museum parking and service access should be relocated to the southern side of the building and should be accessed partly by a new portion of the loop road which is discussed in the Circulation section of this report.

The face of Art Hill forms a unique amphitheater which was in the past the scene of the Cascades, the focus of the World's Fair and the Pageant of the Masque performances in 1914. This potential should be realized by the construction of a permanent stage and demountable acoustical shell at the base of the hill. The site's potential to attract major performances should not be underestimated.

The walls around the Grand Basin should be repaired or rebuilt as necessary and another promenade constructed along with steps leading down to the water's edge. The electrical poles and the few trees which violate the symmetry of this area should be removed. Special decorative lighting along this edge would complement the lighting along the Crescent at the top to form a fantastic evening view from the loop road at the north end of the Grand Basin looking toward the Art Museum.

Both the Crescent promenade and the promenade at the edge of the Grand Basin should be connected to the pedestrian walks leading back toward the north Zoo entry and the foot of Government Hill.

North Shore Park

The land along the north shore of the enlarged lakes should be developed to become a passive pedestrian park with much smaller scale environments and views that contrast with and complement Art Hill. This area should resemble the landscaping of parts of New York's Central Park where views and vistas are carefully controlled and pathways wind among small land formations.

The improvements necessary to achieve this include pedestrian walkways and other amenities. Some artificial small-scale landform changes would be made to define spaces and areas of differing shapes and sizes and to allow for the walkways to move up and down as well as around these forms. Plant materials would be introduced to further define these spaces and to add color and variety to the views.

This would be the only park of this character in the St. Louis region and yet similar parks can be found in most other large metropolitan areas throughout the country. It offers an experience in many ways similar to walking through the grounds and gardens of a 19th century private estate with some resemblance to 18th century English landscape gardening.

This type of park landscape is derived from Fredrick Law Olmsted's park designs of the mid-19th century American parks movement. This facility would be especially attractive to those, such as the elderly, who desire a passive and scenic environment in which to enjoy the outdoors. The North Shore Park can be created within the context of most of the existing mature trees.

The Mall

Government Hill, to the southeast of Post-Dispatch Lake, is the second most spectacular landform in the park. With the World's Fair Pavilion at the top and the fountain near the bottom, it draws many users to walk along its pathways and across its lawn areas. At the present time, it is cut off from Post-Dispatch Lake by a segment of Government Drive.

This Plan proposes that Government Drive be closed to vehicular traffic and turned into a broad pedestrian mall which would terminate at the entrance to the Zoo on the south.

The World's Fair Pavilion has great potential for a restaurant and should be developed for that purpose, preferably through a relatively long-term concession agreement. The adjacent areas of Government Hill could be used for outdoor dining. This restaurant would have spectacular evening views and could relate to the use of the Municipal Opera. Additional parking should be developed to the southeast of the World's Fair Pavilion for both the restaurant and the general use of the park. The Zoo entrances near this parking should remain closed so that this parking does not become overloaded with Zoo visitors.

and the general use of the park. The Zoo entrances near this parking should remain closed so that this parking does not become overloaded with Zoo visitors.

Children's Playground

Between the northwest edge of Post-Dispatch Lake and the waterway which is known as River Des Peres lagoon lies an area which is recommended for the construction of a major play environment for children of all ages. This is not intended to be similar to a neighborhood facility but to fulfill an important need in the St. Louis region for a special kind of playground. The need for this facility is especially acute in light of the fact that there are no major attractions in Forest Park of special interest to children with the exception of the Zoo.

The playground should be a destination activity to which parents bring their children and can provide both a magnitude and a quality of play environment unavailable anywhere in the Midwest. Special facilities should be provided for various age groups and for special interests and types of children. The facilities in general should be accessible to disabled children but there should also be an area especially designed with their recreation needs in mind.

While what is known as an "adventure playground" is not recommended, certain aspects of that type of facility can be accommodated. Included would be environments which children can shape and leave their mark on or can organize to provide the infrastructure for games or fantasies of their own making.

Simple examples of these ideas would include a huge mound of sand which would be played in throughout the week and reshaped into a hill periodically to form a new beginning for further play. Also, large but relatively light objects could be placed on tracks or otherwise be made mobile so that children could organize their own areas for play.

A large, partly translucent tension structure should cover a part of the playground so that its usefulness could be extended into rainy or extremely hot and sunny weather. Water should be a feature both visually in the form of the River Des Peres lagoon which could be made part of this environment and in the form of a fountain jet producing a spray of water on pavement and creating areas for wading and play during hot weather. A large maze with low walls should challenge children. It should be able to be reorganized periodically for continued interest.

Throughout the playground there should be places for the adults who bring children to the area to relax. The normal conveniences of restrooms and drinking fountains should be provided as well as a snack bar or perhaps provisions for hot dog and balloon vendors.

Kennedy Forest

Kennedy Forest's acreage is presently underutilized for three reasons. First, the area is divided by roads and therefore, loses its impact as a wilderness area. Second, the forest itself lacks management for a specific purpose and lacks the improvements necessary to make it function. Third, there is a perception that the area is unsafe which is caused by the area's isolation and obvious lack of security.

To resolve these problems, this Plan proposes that Government Drive be removed from the area so that the largest possible contiguous forest area can be created while still allowing for the completion of the loop road's circuit of the park. The loop road's alignment would merge with Wells Drive via a new intersection at the southwest corner of the park.

The Kennedy Forest is proposed for use as a facility for the enjoyment and study of nature, somewhat in the way it is used now around the existing nature trail. However, to accomplish this in a way commensurate with the quality of

the other facilities in the park, some improvements will be required. Management of the forest environment will provide a more diverse representation of the natural systems of the St. Louis area and will result in a better wildlife habitat. Specifically, the stream bed which now parallels Government Drive should be blocked at several points to create permanent ponds which will support both aquatic and terrestrial wildlife. The generally brushy character of the forest understory should be managed to promote the growth of more typical understory trees, shrubs and wildlife food patches. The lawn area between the golf course and the beginning of Kennedy Forest along Skinker Boulevard should be returned to a natural, meadow-like environment. These changes should be made in cooperation with the Missouri Department of Conservation's urban naturalists who can be of assistance in planning for this environment.

A series of interpretive trails should be introduced into this environment. Some should follow the existing alignment while others could deviate from it to bring people into contact with the newly developed features of the area. The trail system should, for the most part, be paved and accessible to the handicapped. At some time in the future, it would be appropriate to connect this trail walkway system to the Zoo, especially if some animals native to this area of the country were eventually displayed nearby.

In order to add a sense of security it is recommended that a nature center be developed within the Forest. Examples of Missouri flora and fauna and nature wildlife could be displayed. Steps should be taken to explore the fasibility of maintenance and operation of the nature center by the St. Louis Zoo. This concept of locating a mature center within a wooded urban environment may be appealing to the Missouri Conservation Commission which has the resources to support this activity.

Muny Plaza

The Municipal Opera's surroundings represent an opportunity for some very positive environmental improvements. Directly in front of the Muny is a paved road which extends virtually to the front entry. Across this road are two ponds, one of which contains the recently rehabilitated Nathan Frank Bandstand built in 1926. It is proposed that parts of this road be removed and in its place be constructed two cul-de-sacs to be used as auto and bus drop-off points. Directly in front of the Muny, a broad pedestrian plaza would be built, stretching to the ponds and beyond to an expanded and well-landscaped parking area to the north. The plaza would add substantially to the experience of going to the Muny. With the reconstruction of the bandstand, it could provide for another dimension of theatrical and entertainment activity. The plaza would be well, but softly, lit and would provide seating for the use of the bandstand. The rehabilitation of the two ponds would be an important part of ths development.

The parking lot expansion would be also important in order to allow for the removal of several roads to the north and northeast of the Muny. These roads are presently used as parking for the Muny but have no other circulation functions. The potential of this area lies in making it more useful for passive unstructured recreation by removing the paving, disruption and noise related to the roads. The only improvements necessary are those related to the main pedestrian way which would cross the area. This section of the park is technically outside the core area but is discussed here because of its relationship to the Muny Opera.

Related to the parking lot expansion is its potential for serving the proposed playground, the athletic fields to its south, the Lindell Pavillion, and the Davis Tennis Center to the west. To take advantage of this, the entrance to the Tennis Center should be relocated to its east side.

General circulation to Muny parking would be focused on the enlarged parking area discussed above and the upper parking lot, which would continue to be a major parking resource. The only improvement needed here is landscaping within the lot which is at present much too large an expanse of asphalt. This landscaping should not preclude the use of the area for special events requiring some large paved areas.

Jefferson Memorial

The parking area discussed above should also function for the Jefferson Memorial's special events and for its bus parking. A new, lighted pedestrian walkway should be constructed between this parking area and the Memorial. The Memorial should also have its own parking areas constructed parallel to the circle which surrounds it. The small parking area in front of the Jefferson Memorial should be removed. This area should be considered for a visual improvement which would add color and activity to an otherwise drab scene. Any expansion of the Jefferson Memorial should take place below grade in order to avoid any major visual impact on the area.

Pedestrian System

The core area needs to be drawn together with a system of pedestrian walkways which connect the various activities and institituions with one another while providing for the use of the park environments in between. This pedestrian system should provide the small-scale amenities which are really necessary parts of any urban environment such as benches, drinking fountains, rest areas, shade where needed, and points of interest for small children. In addition, the entire area should contain interpretive signs and illustrations of the way the environment looked during the Worlds Fair.

Vehicular Circulation

In the core area, every attempt should be made to remove the noise and distraction of automobiles while maintaining access to the activities within the core. The loop road and a series of cul-de-sacs along with one diagonal and one north-south connection through the core provide this access. The parking lost by the removal of roads should be replaced by the construction of small, well-landscaped parking areas selectively placed along the remaining roads as well as the reuse of some of the previous roads for parking areas.

5.C ACTIVE SPORTS AREAS

Active, structured recreation in Forest Park includes three golf courses and two large groups of playing fields. Both types of facilities are relatively well used but take up a large area of land relative to the actual number of users, particularly in the case of golf.

With the exception of the potentially dangerous recreation conflict between golf and the less structured uses in the area of Art Hill and the Grand Basin, no major changes are suggested for these uses. The balance between these uses and the others in the park seems reasonable but under no conditions should the area allocated to active sports be increased.

Some improvement is suggested in the Field House (Lindell Pavillion) area since this is a hub of active recreation use for the golf courses, the cricket field to the east, the tennis center and the rugby fields to the south. Improvements should be in the form of a renovated restaurant in the Field House and the installation of two practice putting greens for golfers. Certain site improvements such as parking reorganization, walkway repair and the provision of new benches, etc. should also be made in this area.

Forest Park already contains a disproportionate share of these facilities in relation to other locations in the City. The playing field uses do not require a park-like setting and the landscape in Forest Park would be unwisely used if any more of it was converted to playing fields. Finally, in the case of golf, national recreational preference surveys and inventories of available recreation space in the region indicate that golf is increasing in popularity at a rate slower then that of other major leisure time activities and is well represented in the St. Louis region in terms of available public facilities.

While a case can be made for Forest Park's golf courses being the only ones within the City of St. Louis, it remains questionable that such a large percentage of Forest Park, 20 percent, should be devoted to such a use. In this light, while

no net reduction of golf is proposed for the near future, the recreation conflicts conflicts on Art Hill and around the Grand Basin should be resolved by some restriction in golf activity level and quality in those particular areas rather than having golf limit the passive recreation potential of the park.

Municipal Golf Courses

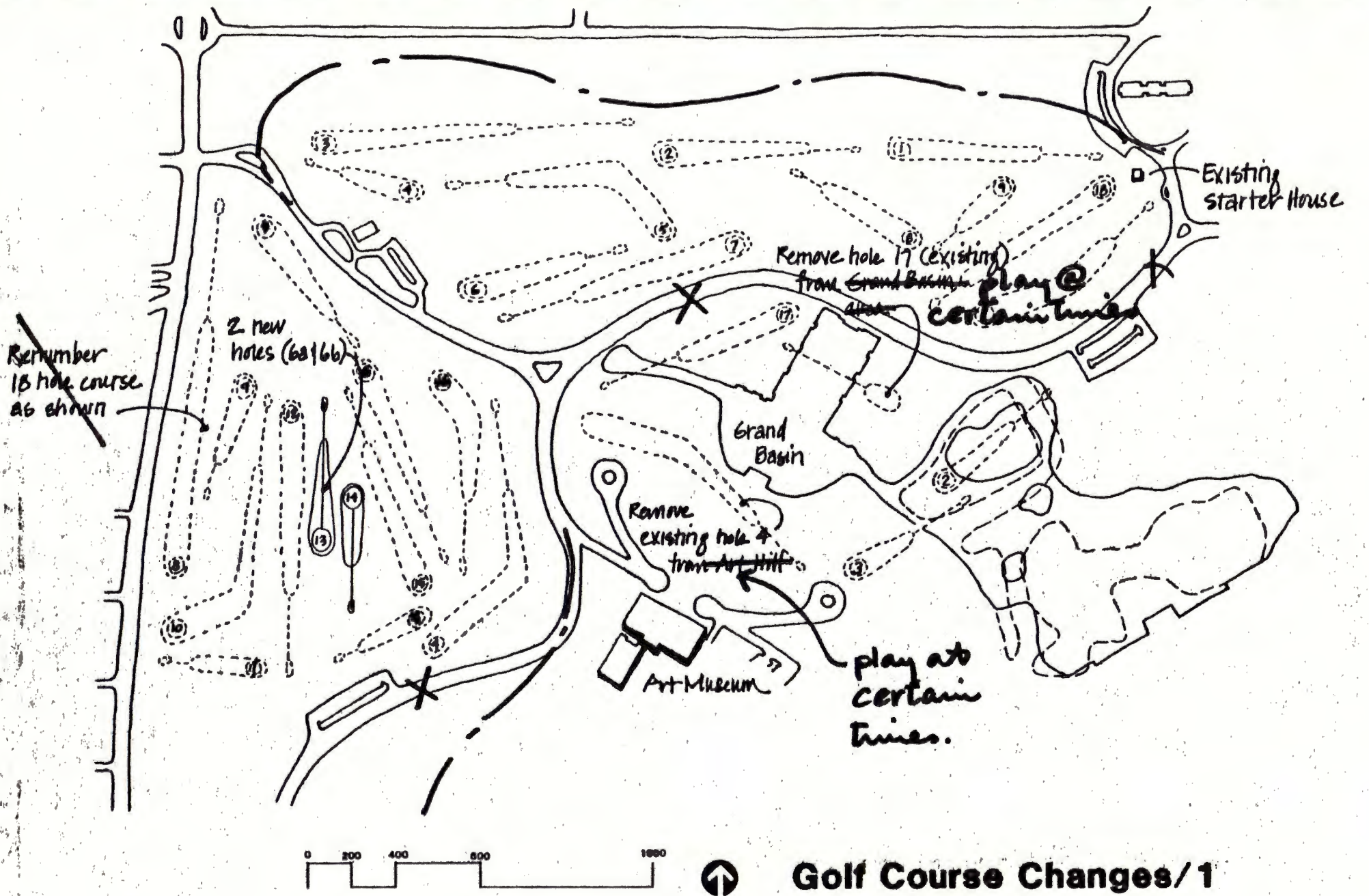
In order to free Art Hill and the Grand Basin area from golf during the peak use times for unstructured recreation, the following sequence of changes is proposed:

1. In the short-term, restrict golf play on the 18 hole Municipal course so that no play occurs on holes 4 and 17 after 1:00 p.m. on Saturday and Sunday and national holidays during the period from April 15th to October 15th. This will provide for the unstructured recreation use of Art Hill and the Grand Basin edges during the peak period demand for unstructured park use. An exception to this restriction could occur if a major golf tournament were held on the course during these times.

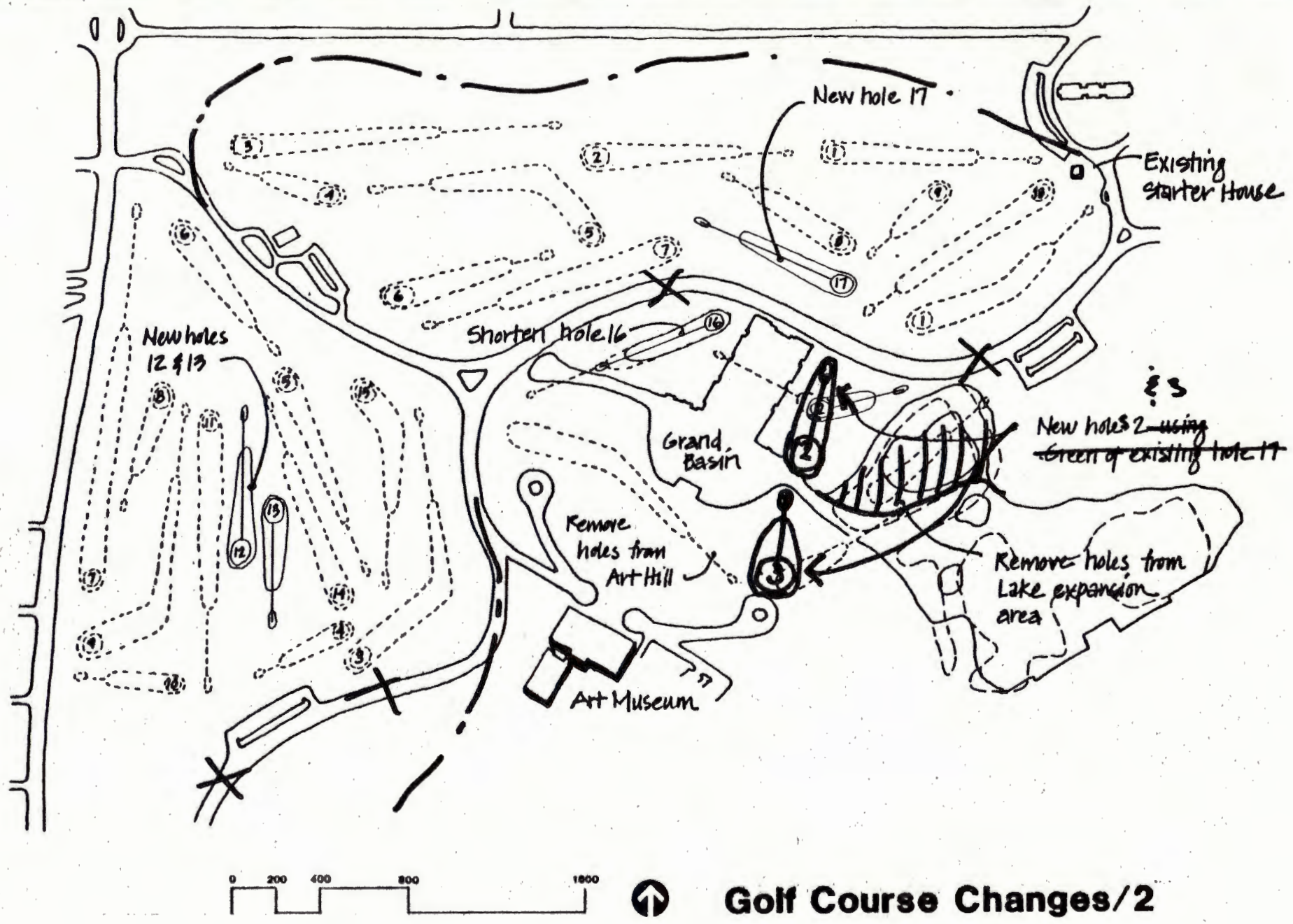
   Pedestrian improvements should be made to these areas which would augment their use for traditional park functions.

   Create two new alternate golf holes, 6A and 6B on the 18 hole course which would be played during the time when holes 4 and 17 were closed. The holes would be located at the top of the plateau north of the tee for fairway 6. One of the holes could be almost 300 yards, the other 150 yards.

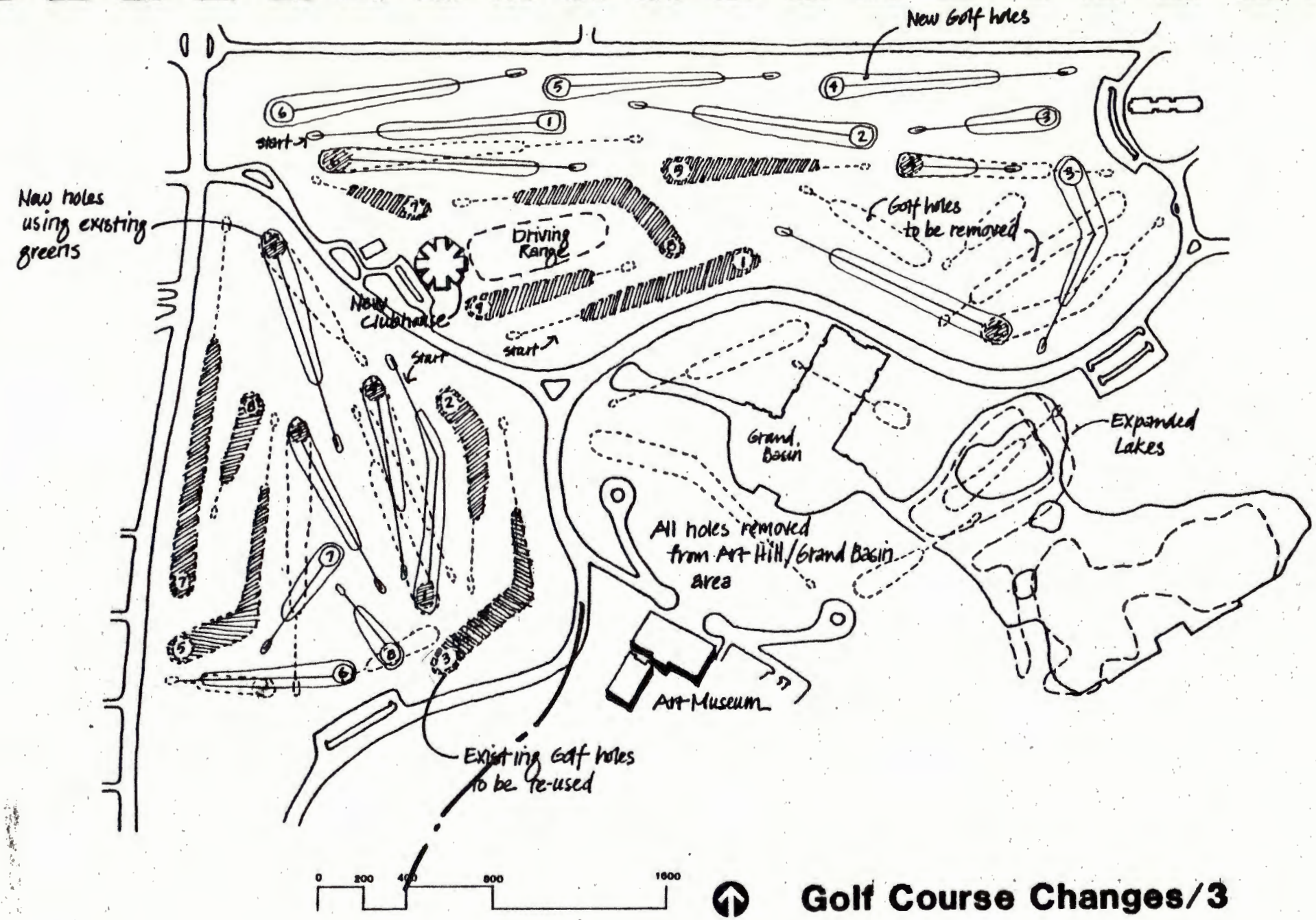
2. In the long-term, relocate three of the remaining three holes in the Grand Basin Area so that additional unstructured use can result and so that lake enlargement can be accomplished. This includes:
   - Create a new hole 17 directly across Lagoon Drive from the northern edge of the Grand Basin. Use the available space in the area of the present 9 hole course. It would be played in the usual sequence and would be parallel to the location of the existing hole 17. Replace the short but interesting drive across the Grand Basin with a water hazard in the low area which presently exists in the new hole 17 alignment.



Golf Course Changes/1



Golf Course Changes/2



Golf Course Changes/3

- Realign holes 2 and 3 so that the lakes can be enlarged and the drive across the water which endangers boaters is removed. A new hole 2 would be created in the area directly east of the Grand Basin from a tee near Lagoon Drive to a green just north of the water. Hole 3 would use the present green but the tee would be relocated to the south of the water. This approach allows for the continued use of hole 4, across Art Hill, with the exception of during peak park use times.

The above suggestions and the eventual restructuring of both the 9 and 18 hole courses should be analyzed by a golf course architect. However, any major reorganization of the courses should be done only after extensive analysis. Consideration should be given to relocating the club house from the Lindell Pavilion to the site of the golf maintenance building near Skinker Boulevard. The eventual state of the golf courses in Forest Park should be determined as new patterns of use and new improvements are made. Restructuring of the courses and the relocation of the club house could make it possible to move more of the holes from the Art Hill and Grand Basin area. If this is not possible, then the probable increase in unstructured use of that area could eventually be the basis for further time limitations of the use of these golf holes. From this point it would be possible to set up three sets of 9 holes which would result in substantially increased use of the 18 hole course.

Central Field and Aviation Field

These two areas contain thirty-nine playing fields for softball, baseball, football, rugby and soccer. Improvements to these areas should include the introduction of some trees between groups of the playing fields to break up the extensive visual impact of these areas and to make them more compatible with the rest of the park. Some walkways and benches for spectators are also needed, as is additional off-street parking in certain areas shown on the Master Plan.

Aviation Field should have extensive planting put in place along the U.S. Highway 40 edge so that the playing fields appear more park-like.

Some playing fields also exist just south of the Dwight Davis Tennis Center. These should be slightly reduced in number so that the playground to the south and some new parking could be added. The emphasis at these fields should be shifted to rugby and soccer with some spectator stands provided. These fields should be maintained for special games. The cricket field, also in the general area of the tennis center, should be maintained as should the golf driving range to the north.

Should the archery range need to be relocated, it should be placed at the presently underutilized scout area in the southwest section of the park. Both uses could probably use this area at different times. A more positive backstop should be created than now exists since the existing condition represents a potential danger to other users of the park just north of the archery range.

Triple A Club

This facility includes a 9 hole golf course, club house and tennis courts. It operates as a private club open to the public for membership. In the future, this area should be converted to a more well-rounded athletic facility including a sophisticated exercise course similar to the Parcourse concept but more extensive. More active recreation facilities should be built such as platform tennis, racquetball and squash courts. These should be open to the public on a non-membership fee basis since the park is a public facility. The construction of some additional buildings on this site would be acceptable provided they were within approximately 200 feet of the existing facilities and were of a low profile. Detailed program and design guidelines should be developed for this area before the Triple A permit is again subject to negotiation and renewal. Additional improvements in this area should not be accomplished at the expense of the existing nine hole golf course.

These areas of the park are composed primarily of natural or pastoral park environments without substantial improvements beyond the landscape itself. Within the area are a variety of functions and facilities such as Round Lake and its fountain, Steinberg Rink, the Planetarium and the Fish Hatchery. The Kennedy Forest forms one of the two major unstructured use areas. Because some of it is contained in the core area, it was covered in that discussion as was the area north of the Muny Opera from the Tennis Center to the point where Union Boulevard enters the park.

The majority of the unstructured use area is on the east end of the park. It should have certain improvements added to it so that it becomes more attractive for casual, traditional, passive park use. These improvements should be in the form of pedestrian walkways and amenities. In particular, the major walkway system proposed to cross the park diagonally should be implemented in this area and connections should be made to the corner at Lindell and Kingshighway and to the Washington University Medical Center complex.

Medical Center Plaza

At the Medical Center, an important pedestrian connection should be developed using a broad underpass below Kingshighway opening into the park toward a pedestrian plaza. Above, the location could become a major bus transportation point and entry to the entire Medical Center complex. This is especially important due to the heavy traffic volume on Kingshighway and the need to move pedestrians across it.

Beyond the plaza, there should be a variety of improvements such as a fountain, a gazebo and seating areas for use by the public in general but located to serve the extensive Medical Center population. The improvements should extend

5.E NEEDS OF EXISTING FACILITIES

Many of the major institutions in the park intend to expand either their physical facilities or their programs. These proposed expansions could take place within what has been identified as the present area of influence of each facility. Because of the importance of preserving as much open space as possible, no increase in these areas is recommended in the Master Plan. Exceptions relate primarily to parking. Program expansion will have the effect of increasing use, which is generally positive, and increasing parking requirements. Some increase in facility use and parking can be accommodated without increasing parking areas by the coordination of events and by multiple use of existing parking.

Zoo

The Zoo has no plans to expand beyond its boundaries in the park. Its objective at the present time is to renovate and improve existing facilities within the Zoo itself. One of the recent improvements has been the south entrance located in the vicinity of the elephant house. This entrance way has become an important identity element of the Zoo because it receives the majority of the Zoo's visitors from the 1000 car parking lot to the south. Traffic and pedestrian control measures should be included in this area. Eventually, the most appropriate solution might be a pedestrian overpass from the lot to the Zoo entry. The large parking area to the south of the entrance should be heavily landscaped to reduce the appearance of a sea of asphalt and to help to cool the lot during the summer months.

The eventual expansion and improvement of the Zoo's north parking lot is a desirable project as envisioned by the Zoo. This existing 400 car capacity lot is at times overloaded by Zoo visitors, combined with Art Museum users. Decked parking in this location could be an asset to both the Zoo and the Art

Museum in the future and should be allowed at the point where need can be demonstrated. The design of the decks will be especially important. They should be stepped back from the north and heavily landscaped so that they appear to fit into the hillside.

Art Museum

The most critical short term need of the Art Museum is approximately one hundred additional parking spaces. Some parking as shown in the Master Plan can be created within its area of influence. Demand, coupled with topographic problems and other natural features, could eventually lead to the need to construct decked parking on the Zoo lot for use by both institutions.

The Art Museum would benefit from plaza improvements at its front to the north, including landscaping, special paving, lighting, benches, and the elimination of parking directly in front of the building. If the Museum ever needed more physical expansion, it should occur in a wing similar to the new structure but on the east side.

Jefferson Memorial Museum

A need for more parking (approximately 50 spaces) is a major problem at the Jefferson Memorial. This parking can be created in the general area of the Museum with minimal visual impact. The Missouri Historical Society, which is housed in the Memorial, is evaluating the need for additional display space. A fountain is currently being considered for location on the north side of the building.

Muny Opera

The Municipal Theater Association which operates the Muny Opera foresees no basic expansion or major improvements to its facilities in the near future. A physical problem, which is under investigation, is the flooding of a drainage culvert that runs behind the main stage.

The proposed reduction in on-street parking availability in the area of the Muny will be compensated for in the same amount by enlarging the existing parking area to the northwest.

Jewel Box

The Jewel Box is a City facility. It has the potential for both physical and program expansion including indoor facilities, such as an auditorium, and outdoor planting areas. Parking area for approximately 80 cars is proposed to compensate for the removal of on-street parking in the area.

5.F OPPORTUNITY AREAS

Three areas in the park represent opportunities for expanding an existing facility or introducing a new facility. These areas are located adjacent to the McDonnell Planetarium, the Steinberg Ice Rink, and the Jewel Box. Each has certain common characteristics.

1. They are presently partially occupied by a facility operated by the City. Each of the existing facilities is either underutilized, is a financial burden, or has much more potential to satisfy the needs of the citizens of St. Louis than is now being realized.
2. They will have good road access via the proposed loop road or the secondary loop.
3. There is substantial existing underutilized parking nearby, or adjacent land on which parking or a facility could be constructed without severe visual or functional impact to the park.

Development of these areas can be justified because the removal of roadways proposed within master plan can create more available park land, thereby allowing for a net increase in the amount of open land in the park. This creates an opportune condition to expand existing, underutilized facilities and improve the park environment at the same time.

At this time, no major uses have applied for entry into Forest Park. The three opportunity areas are therefore treated in a general way in the Master Plan. Guidelines have been prepared for each area so that development opportunities can be evaluated as they appear in the future.

In each case, guidelines relate to the following issues:

- Type of use and relationship to existing development,
- Quantity of construction, parking and vehicular access demand,
- Visual impact of the development, and
- Timing of development.

General Conditions for Development within Opportunity Areas

When speaking generally about all three opportunity areas, further development could contribute positively to Forest Park if the following four conditions are met:

1. The traffic for the development is handled adequately by the park's road system.

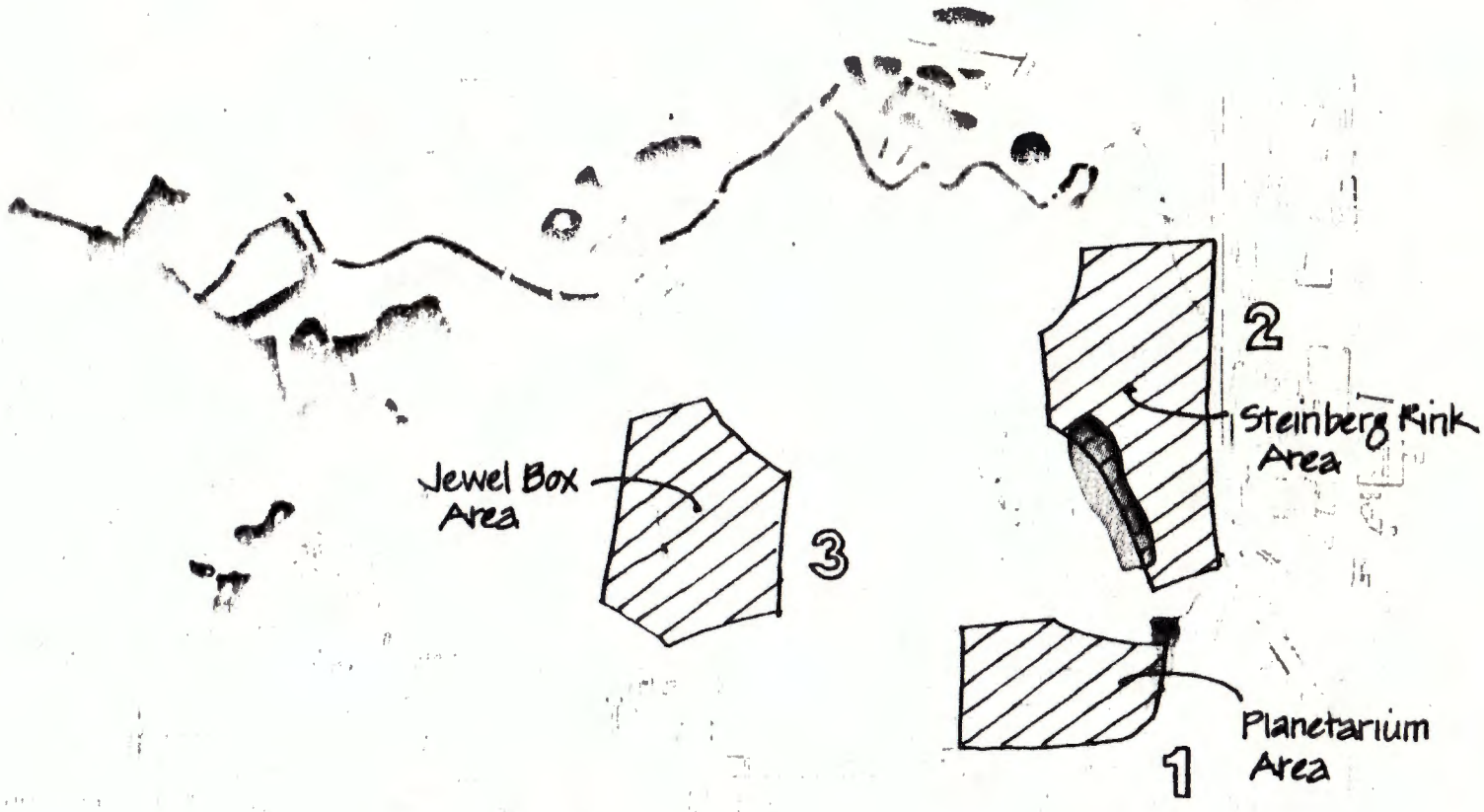
2. The exact bounds of the development area are permanently defined and the quantitative limits of development are set by an approved master development plan.

3. The development would effectively convert a given number of acres of land from paved, developed, or unuseable land to passive park use. The net gain in park land should be twice the amount of open space that the development takes for its own use. This would be accomplished by removal of roads as shown in the Master Plan or by the provision of substantial planned improvements which would make an area more usable for passive recreation. This return of open space could occur in other areas of the park unrelated to the development area. The development would, in addition, accept responsibility for maintenance of the development area and its surroundings.

4. Design and development guidelines are accepted as noted in the discussions of specific opportunities are at the end of this section.

In the case of any request for the use of a development area, a well-documented plan for the development area should be submitted in a form similar to that of federal environmental impact assessment which covers the following:

- Purpose and need for the development in Forest Park;
- Alternative approaches to the development such as other locations, less development, or no development;
- Affected environment and the consequences for the park and park users;



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Development Areas

construction. Any roof areas should be either landscaped as pedestrian plazas or covered with grass.

The parking for this development area should be hidden completely from surrounding views. This could be accomplished by a below grade garage, or a surface facility sunken below the existing grade and landscaped to the extent that planting areas occupy one-third of the surface.

Opportunity Area #2 (Steinberg Rink Area)

The future use of this development area should reinforce and be compatible with Steinberg Rink. It should be a recreation facility, not an institution. As part of the development plan for the area, Steinberg Rink should be covered with an attractive translucent sun, snow and rain protection surface.

The size of the development should be based on the ability of the park road system to handle an additional 70 vehicles during the peak hour of the weekend day traffic assignment from this facility, and for all of the parking to take place on the existing parking lot minus 10% of the spaces which should be given over to landscaping for the area.

The amount of building construction on this site should be limited to 100,000 square feet using the same guidelines for visual impact as noted for Area #1. The exception to this would be a building with an exterior which would become an integral part of the recreation use of the site, such as a building which the user could walk over and through to enjoy whatever recreation activity was being promoted.

Opportunity Area #3 (Jewel Box Area)

The use of this area should be related to the Jewel Box facility. The Jewel Box has unrealized potential for additional conservatory construction and exterior garden development. A key issue with this area will be the traffic

capacity of the road system. This development area should be limited to contributing an additional 50 vehicles during the peak hour of the weekend day traffic assignment to the park road system. This would, in turn, be based on a 70 car parking lot.

No additional parking should be constructed in this development area. Rather, connections should be made with the Muny's upper parking area. Modifications should be made to this parking area to add landscaping of approximately 5% of the lot area.

6. CIRCULATION

The means by which people move about in the park are extremely important. Circulation elements have the capacity to provide a structure for the park. Park users may consider the present circulation system as merely a means of getting to a desired location, or as the main reason for visiting the park, perhaps for a quiet walk or even a slow drive through pleasant surroundings.

to Steinberg Rink, the roof of which was built as an observation platform, and on to Jefferson Lake. The section of Hospital Drive which now runs between the rink and the lake should be removed. Steinberg Rink itself has further development potential which will be discussed later on in this report.

Jefferson and Bowl Lakes

Both of these lakes need extensive repair work. Jefferson Lake is the only one in Forest Park with a paved edge. This should be maintained since it makes the lake more usable for certain activities than those lakes with natural edges. Bowl Lake should have most of the aquatic vegetation removed and should be deepened. It should be regarded as an amenity to be tied to further development at the Planetarium site. The lake should be screened from the U.S. 40 west entry ramp traffic by extensive planting. The Cascades, at the northeast corner of the lake should be renovated. A small parking area and seating area could be constructed to take advantage of this very pleasant environment.

Fish Hatchery

The hatchery is an interesting environment of small holding ponds where fish are stored prior to putting them into the lakes where fishing is allowed. As the lake improvements are made and water quality rises, this function may be less important since larger fish of more varieties will be able to live longer in the deepened lakes. It might then be possible to consider joining some of the fish ponds and turning the area into a more pleasant passive park area.

The guidelines provide a clear direction for any entity which contemplates development within the park. It is anticipated, however, that more detailed regulations would be developed for adoption as a City ordinance at the time when a specific development is reviewed by the City.

Criteria for Development

The three development areas represent the only parts of the park outside the core area where major development should take place. As such, the selection of specific developments becomes exceptionally important to the future of the park.

There are three general selection criteria which are as important and which must be considered prior to development plan approval.

1. Uniqueness and Importance - The development or facility should conform to the quality, importance and uniqueness of the facilities already in the park. It should be something which is not likely to be duplicated or surpassed in the St. Louis region.

2. Reinforcement for the Park - The development should have a correct and reinforcing position in the park. It should be more than compatible; it should be a logical extension of park activities.

3. Long-Term Future - The development should have a guaranteed long-term future. This should cover both the funding of operations and the market for the facility in the region. Any development which depends on short-term trends or preferences should be rejected.

The development areas do not need to be filled in the near future. The park can wait until good opportunities emerge. Yet, the criteria provided in the Master Plan makes it possible to evaluate opportunities as they arise.

- Affected environment and the consequences for the park and park users;
- Relationship between the proposed development and the long-term use of the park;
- Irreversible changes to the environment;
- Appropriate mitigation measures.

Opportunity Area #1 (Planetarium Area)

The use developed in this area should be related to the function and programs of the Planetarium, a facility which is not of sufficient magnitude and scope to be self-sufficient. Recreation use would not be appropriate, nor would uses which are based on the need for a completely passive park environment.

The amount of construction is not a direct issue in this area but the generation of traffic is important. The proposed park road system will, at the level of use shown in the traffic assignments in the Circulation section of this report, allow for the addition of 150 vehicles per hour during the weekend PM peak hour periods. This in turn would be based on a new parking lot capacity of 200 cars. The critical point at which this traffic will be focused is between the Hampton Avenue access point and the Jewel Box during the weekend day PM peak hour.

Parking is primarily a visual impact issue with one exception. The proposed development should be sized relative to its ability to provide sufficient parking for its projected users without relying on any untested mass transit systems such as a park tram. A tram will not function well for family oriented trips to attractions at which less than a whole day will be spent.

The visual impact of construction on the site must be minimal as seen from the surrounding park areas and U.S. 40. Total visual impact should not amount to more than a ten (10) percent change in any major view to the site. The changes would range from natural materials (trees and grass) to the materials of building

6.A OBJECTIVES OF THE SYSTEMS

The Forest Park movement system accommodates travel to, through, and within the park. It consists of roads, bus routes, bikeways, pedestrian paths and parking facilities. The present system has evolved since the park's inception in response to the needs of recreational activities and the surrounding urban area.

Streets and highways serving Forest Park and the road system within the park are the prime means of access to the various recreational opportunities afforded there. While excellent public transportation service is available in the vicinity of the park, the vast majority of users have demonstrated a preference for use of private vehicles for recreational trips. This is a common phenomenon, however, since many park activities are family or group oriented. Moreover, even with present environmental and energy concerns, use of a private auto to take the family to the park is generally acknowledged to be reasonable use of the car.

The park road system is also used by commuters and others as a connection between major streets and traffic generators outside of the park. Some motorists would choose a route through the park as the most expeditious travel path from one point to another (such as between Hampton Avenue and either Union Boulevard or DeBaliviere Avenue) while others might opt to use park roads for the enjoyment of driving through the pastoral surroundings.

The park is a large break in the grid of arterial City streets. Its shape accentuates this problem in the north-south direction. Because the surrounding street system, particularly Kingshighway and Skinker Boulevard, is already severely taxed in peak periods, it is important that the park road system continue to serve as a through route for some motorists--at least during

peak periods on weekdays when surrounding streets are most heavily used. This dual function requirement poses some challenging, but not insurmountable problems in formulating a Master Plan for traffic and circulation.

Movement within the park consists of recreational activities such as biking or walking as well as a large number of persons moving between their parking location and one or more of the park's activity areas or attractions. In this respect, parking facilities are an important and integral element of the total circulation system since they are the terminals or destinations of visitors who arrived at the park by car and the starting and ending points of walking trips to and from recreational areas.

It is also important to recognize that driving through the park is as much a recreational experience as physically partaking in the many activities offered. A drive through the park may be the primary means of enjoying the facility for some people. The traffic plan, therefore, should attempt to balance the objective of providing a pastoral, vehicle-free environment with that of affording visual access to the more scenic areas.

The needs of various types of movement to, through, and within the park suggest the following objectives for planning a movement system for Forest Park.

1. Improve accessibility to the park. An adequate number of portals for vehicular access (ten) are available, but just a few account for most trips to, from and through the park. The resulting problems are more a function of the roadway configuration within the park than the physical capacity of the portals to accommodate travel demand. Better balance in use of park portals would assist in relieving congestion during peak periods and on peak days.

2. Maintain reasonably direct routes across the park, at least during peak periods on weekdays. Diversion of north-south auto travel across Forest Park to Kingshighway or Skinker Boulevard would severely congest these already heavily-used thoroughfares.

3. Clearly designate major traffic routes in the park. Far more roadways exist in the park than are required to move traffic. Consequently, motorists are confronted with a number of optional routes, rather than a clean-cut, least-disruptive travel path.

4. Reduce roadway intrusion of natural and recreational areas. The present system of park roads meanders through the facility, penetrating many desirable natural and recreational areas. Some segments of the existing park road system which do not serve an essential traffic access function could be eliminated.

5. Provide an adequate number of conveniently located parking facilities. Parking capacity should be adequate to accommodate all users on a normally busy day. Special provision--such as remote parking--may still be required for special events. Planned locations of parking facilities should also recognize that many park functions are group or family oriented, requiring parking in relatively close proximity to the activity area.

6. To the extent possible, separate vehicle and pedestrian-cycle travel paths at critical points. This is required in the interests of both safety and comfort for pedestrians, cyclists, and motorists.

6.B AUTOMOBILE MOVEMENT AND PARKING

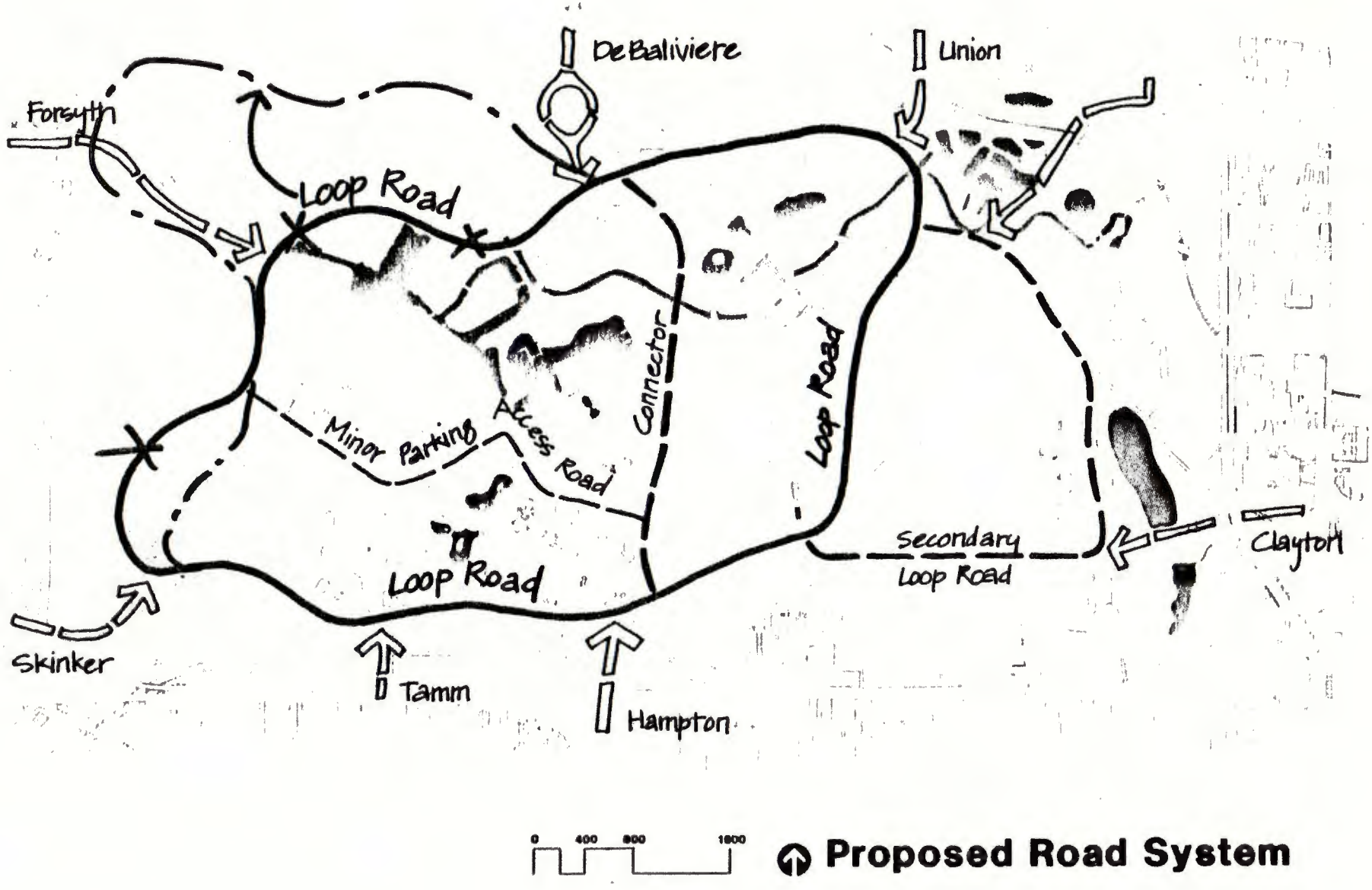
The existing Forest Park road system has evolved over the years in response to development of recreational opportunities. It is characterized by numerous meandering roads with many "Y" junctions. The unfamiliar driver is often confused when attempting to select a route to or from park attractions. In addition, many lightly used roads either penetrate or divide areas which could potentially be put to better recreational use.

The existing road system should be consolidated into a major distribution loop, combined with a secondary loop, a secondary connection and one minor road. The proposed system would provide access to existing and planned parking facilities and would afford convenient routes across the park for through travel.

The loop road would have direct connections to each of six portals--Hampton, Union, DeBaliviere, Forsyth, Government (Skinker) and Tamm. Present access routes via Hospital Drive and Des Peres Avenue would no longer be available.

Drivers going to and from Clayton and the West Pine area would use portions of the secondary loop in the easternmost sector of the park. The secondary loop would also provide access to a number of recreational areas including the Steinberg Rink and the Planetarium.

In addition to the loop roads, the Plan proposes secondary connection across the park generally between Hampton and DeBaliviere Avenues and a minor parking access road between the Zoo and Art Museum. Some experimentation will be required to understand whether these roads will fulfill a positive traffic function during high use weekend conditions.


DeBaliviere
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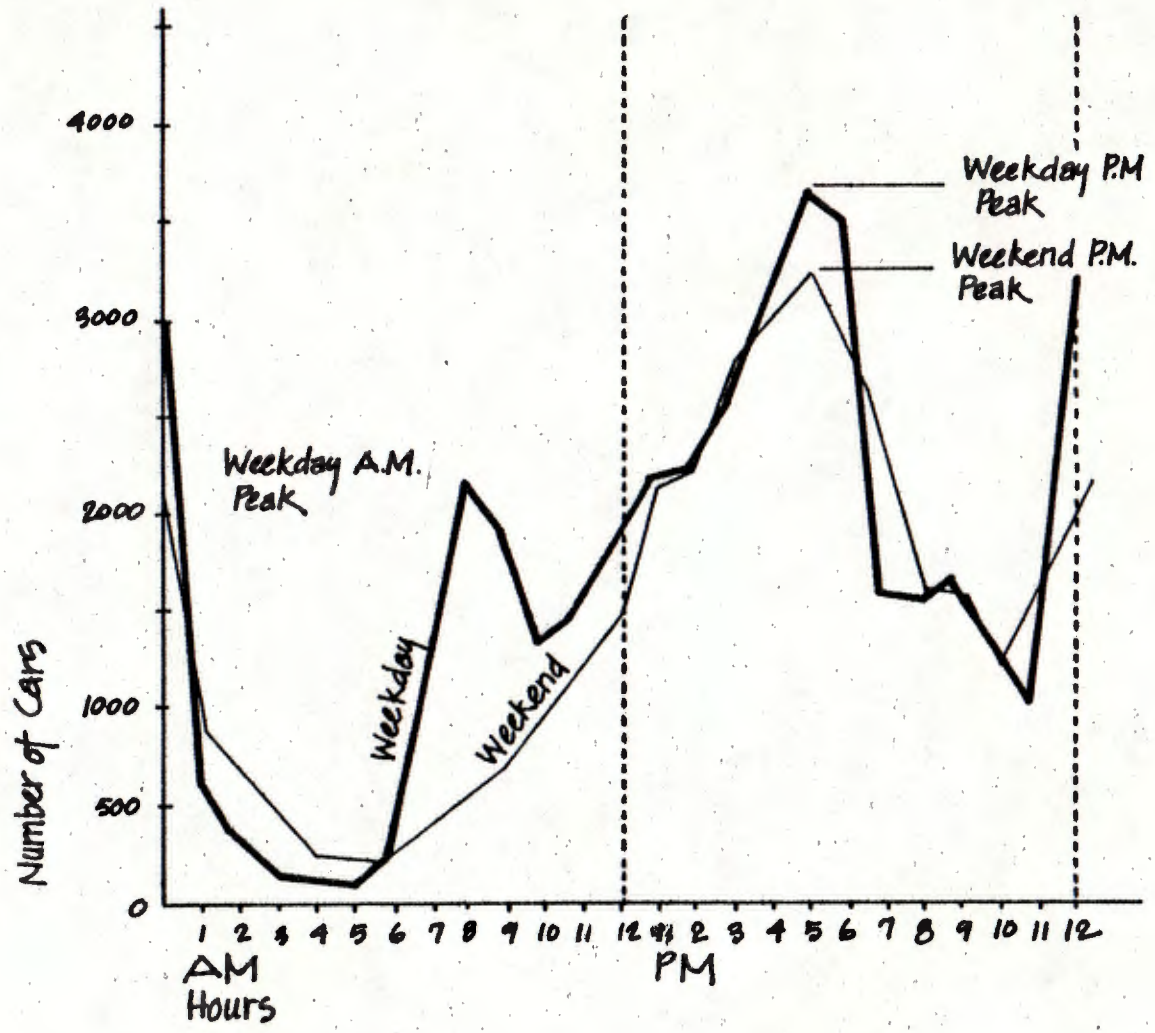
Proposed Road System



Traffic Volume

Boulevard, are carrying as many as 55,000 and 30,000 vehicles per day, respectively. Both facilities are congested in the morning and evening peak hours.

During the morning peak hour on a weekday, about 2,800 motorists enter Forest Park and 2,000 depart. The volume of traffic leaving the Park would be primarily through travel since very few persons would have been partaking in park activities before the morning peak hour. The difference between entering and departing traffic is believed to derive mainly from park employees coming to work and hospital employees parking at the Muny Opera lot.

If park roads were not available for through travel, as many as 2,000 vehicles would be added to the traffic stream on adjacent streets in the morning peak hour. Of particular significance, approximately 75 percent of these trips, or 1,500, would be oriented in a north-south direction. This volume of traffic, if diverted to Kingshighway or Skinker Boulevard, would add demand equivalent to about two traffic lanes--a requirement which could not be met on the City streets.

Heaviest through traffic movements using the park road system in the morning peak hour are estimated as follows:

Between	Vehicles per Hour (vph)
Hampton-DeBaliviere	400
Hampton-Union	400
Hampton-Forsyth	160
Hampton-Clayton	160
Hampton-Des Peres	150
Forsyth-Clayton/Hospital	100

All other portal-to-portal traffic movements would be less than 100 vehicles per hour.

The volume of weekday through traffic would be higher in the evening peak hour due to the overlap of shopping, business and other trips with work-related travel. Definitive data were not available to indicate the precise split between through and user traffic in the PM peak hour, but a reasonable estimate would be that approximately 2,500 of the 3,500 vehicles leaving the park, or about 70 percent, would be through travel and the remainder (30 percent) would be park users.

Roadway Capacity

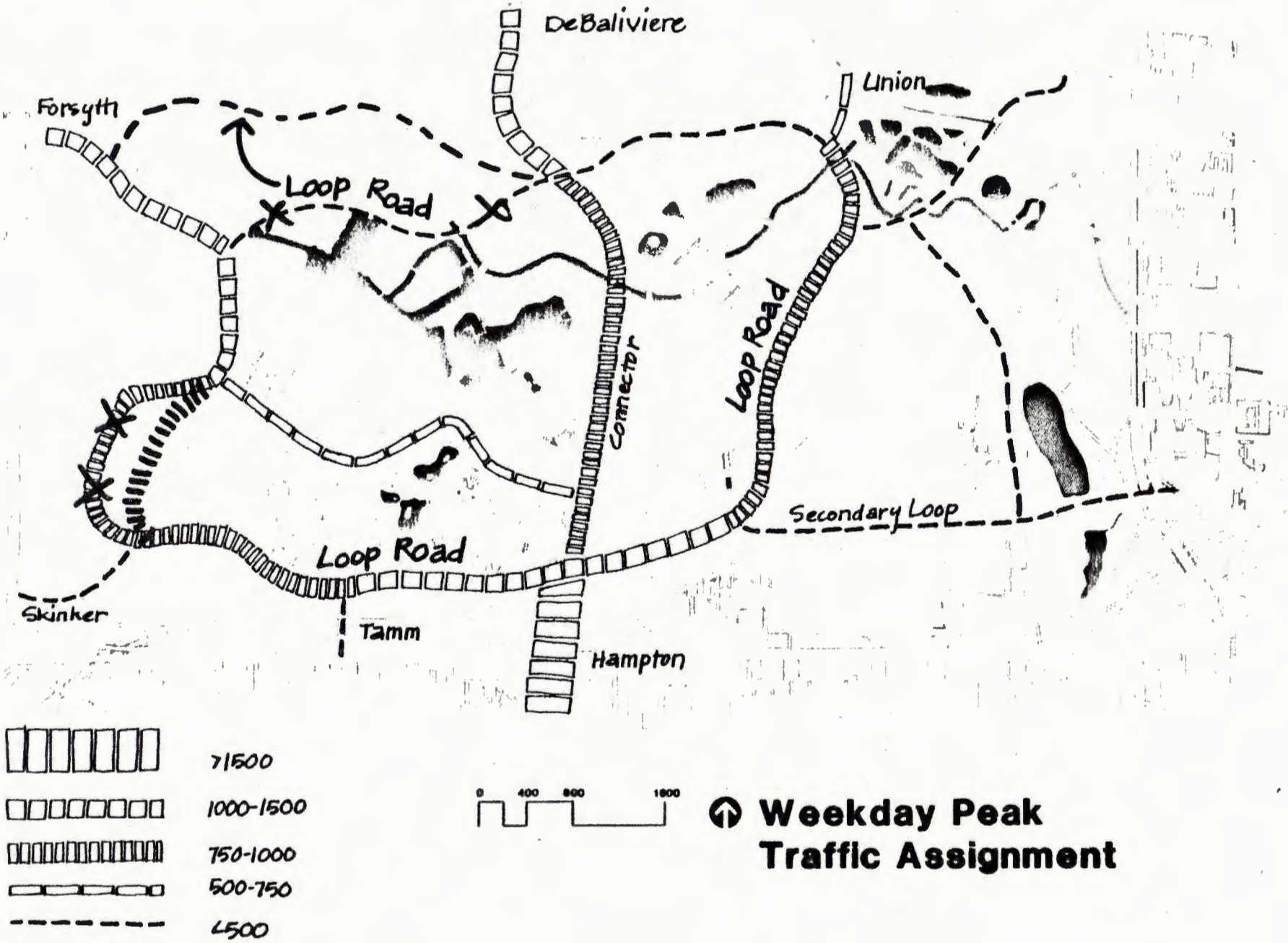
Park roads should have adequate capacity to afford a comfortable and congestion-free trip through or within the park. Clear-cut standards have not been established for special service facilities such as park roads, but experience with suburban and rural roads can be used as a guide.

A two-lane park roadway might be expected to carry 1,000 cars per hour in both directions--or about 600 cars per hour in the peak direction--at an acceptable level of service. Capacity of a network of roads, such as the one existing and proposed in Forest Park would usually be constrained by the ability of at-grade intersections to accommodate opposing traffic movements. Additional through and/or turning lanes would probably be required at some intersections to maintain this rate of traffic flow throughout the network.

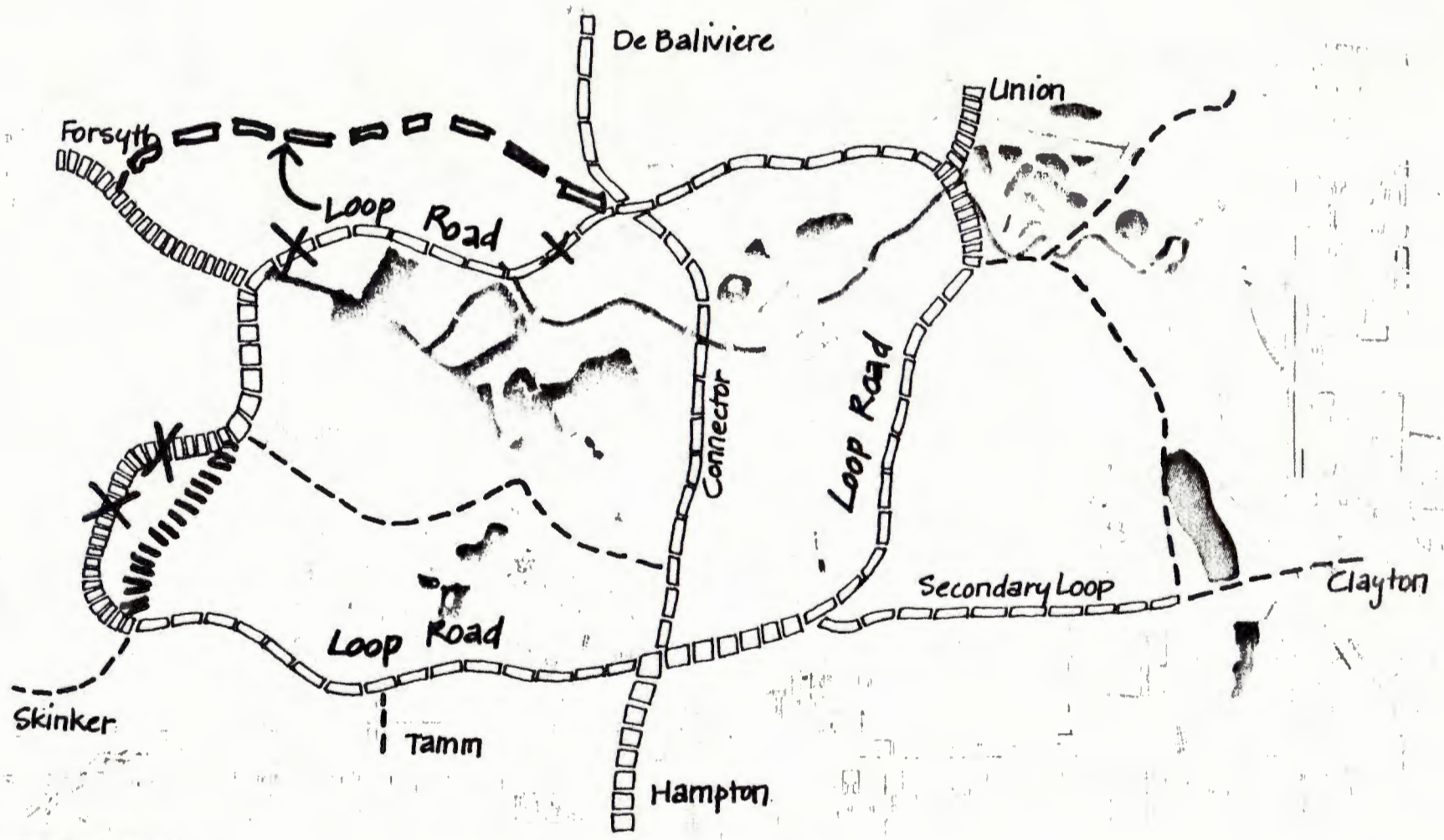
Traffic Assignment

Estimates were made of the number of vehicles that would use various segments of the proposed park road system during peak periods on a weekday and a weekend day (Saturday, Sunday or holiday).

AM Peak-Weekday--The weekday morning peak period would be characterized by a predominance of through traffic. The outbound traffic during this period has been assumed to consist mainly of commuters. Inbound traffic would be about 40 percent higher, due presumably to some users entering the area as well as park and hospital employees arriving for work.



Weekday Peak Traffic Assignment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Weekend Peak
Traffic Assignment

Except on two short segments of the main loop road--one just east of Hampton Avenue and another south of Forsyth--estimated traffic volumes would be less than the maximum of 600 vehicles per hour in one direction.

Analyses were also made of the effects of closing the secondary connector between Hampton and DeBaliviere on weekends and holidays. Most of the travel expected to use this connection would be diverted to the east leg of the main loop road, increasing one-way hourly demand from about 700 to 900 cars per hour. Peak hour traffic volumes of this magnitude would significantly exceed the desirable maximum for a two-lane facility.

Travel Growth

Travel increases on the Forest Park roadway system were considered in terms of both through trips and user demand.

Through Travel. The Forest Park road system serves an important function in accommodating a relatively modest volume of through traffic. If traffic now using the Forest Park road system was diverted to nearby streets such as Kingshighway or Skinker Boulevard, however, major traffic problems could be expected.

Growth of through travel in Forest Park might result for either of two reasons: increased congestion on nearby arterial streets or generally increased demand for travel through this corridor of the St. Louis metropolitan area.

A review of traffic counts made during the period from 1971 through 1978 indicates that the total volume of traffic carried by streets in the vicinity of Forest Park has held relatively steady and, in some cases, has decreased slightly. There is no discernable trend of traffic growth during this seven-year period.

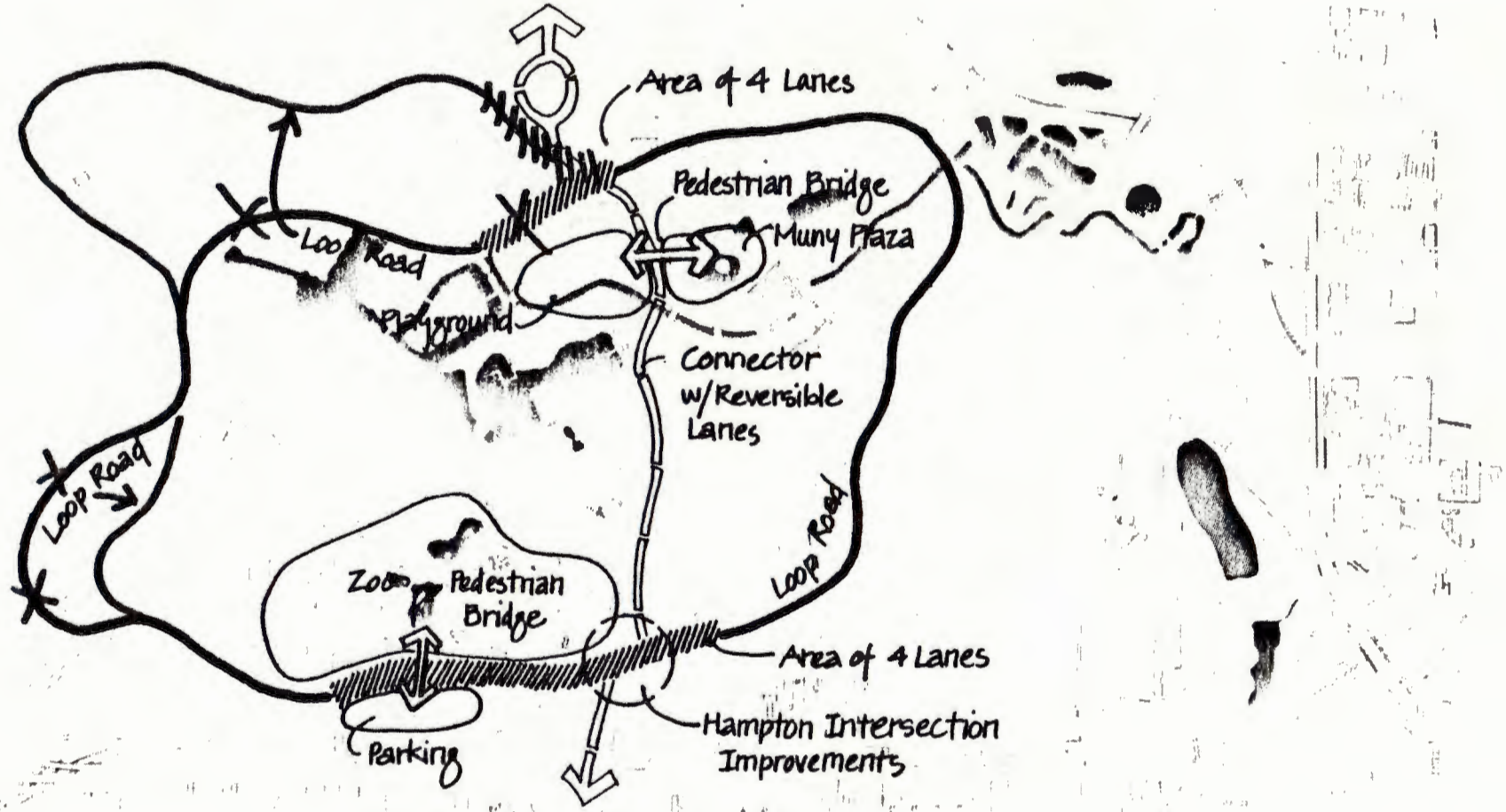
The travel forecasting model developed for the St. Louis metropolitan area correlates population (by income level and residential density) with trip productions. Population, employment (by type) or combinations of both are correlated with trip attractions. A general indication of change in travel demand can be gained, therefore, from anticipated changes in population and employment.

Analyses of projected population and employment growth to 1995 in a broad area encompassing Forest Park indicate that increases in employment would generally be offset by decreases in population. Trip generation should remain nearly constant. Unless there is unforeseen development or a change in trip making patterns, regional growth should not result in significantly increased traffic demand through Forest Park.

User Demand. Traffic growth generated by increased park attendance would be expected to be derived primarily from the presence of new activities such as in the Steinberg Rink, Planetarium and Jewel Box areas. Most of the increase would occur on roads in the eastern portion of the park. Traffic analyses based on general assumptions regarding new or expanded facilities indicate peak hour volume increases of from 50 to 150 cars per hour in the heaviest direction of travel on the secondary loop road and the east leg of the main loop road.

The loop road concept requires elaboration in three areas in order to serve both park-related and through traffic needs.

First, two areas of potential pedestrian-automobile conflicts will need to be specially treated. The first conflict occurs at the south entrance to the Zoo where a pedestrian overpass should be constructed due to the high volume of both pedestrian and vehicles in the area. The other is between the enlarged parking area north of the Muny and the new playground to the southwest.



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Special Road System Conditions

Here, pedestrian crossing should be restricted to a single point to ensure safety as well as smooth vehicle flow.

Second, the loop road system has been sized for present traffic flow during the weekday PM peak commuting time. This system is two lanes wide in all areas except near the Hampton and DeBaliviere portals. As such, it should function well even in its heavily loaded north-south directions. Only increased growth in the areas outside the park to the north and south would change this situation in the future. Preliminary growth projections from the East West Gateway Coordinating Council indicate that this increase is not likely. In addition, rising fuel prices and an improving bus system in St. Louis reduce the probability that commuting traffic pressure will increase in the park in a north-south direction.

Should this increase occur, however, the park could accommodate a certain amount of additional traffic within the need to maintain a reasonable park environment. The accommodation should involve no more than the addition of a single reversible lane to the connection between Hampton and DeBaliviere. This lane can be accommodated within an overall paving width of forty (40) feet. This width would otherwise accommodate two traffic lanes and two parking lanes. Any new portions of the Hampton-DeBaliviere connection should be built to this width but the reversible lane should only be put into operation as growth in traffic warrants.

The criterion for the use of the reversible lane should be an increase in PM peak hour traffic volumes on both Kingshighway and Skinker Boulevard of more than twenty (20) percent averaged over a one year period. Any subsequent decrease of the same magnitude should be followed by the immediate closing of this reversible lane.

The reversible lane should operate for two hours during each peak period (AM and PM) during weekdays only. Under no circumstance should this additional lane become a permanent and continually functioning part of the Forest Park road system. This lane would become operational by restricting parking along one side of the road during the weekday commuter traffic peaks.

Third, since many roads are being removed from the park, the proposed parking supply Must be increased by two methods. In the interim, parking will be allowed on several portions of the loop road itself. In the final configuration, more small parking areas will be needed than have been shown on the Plan to date.

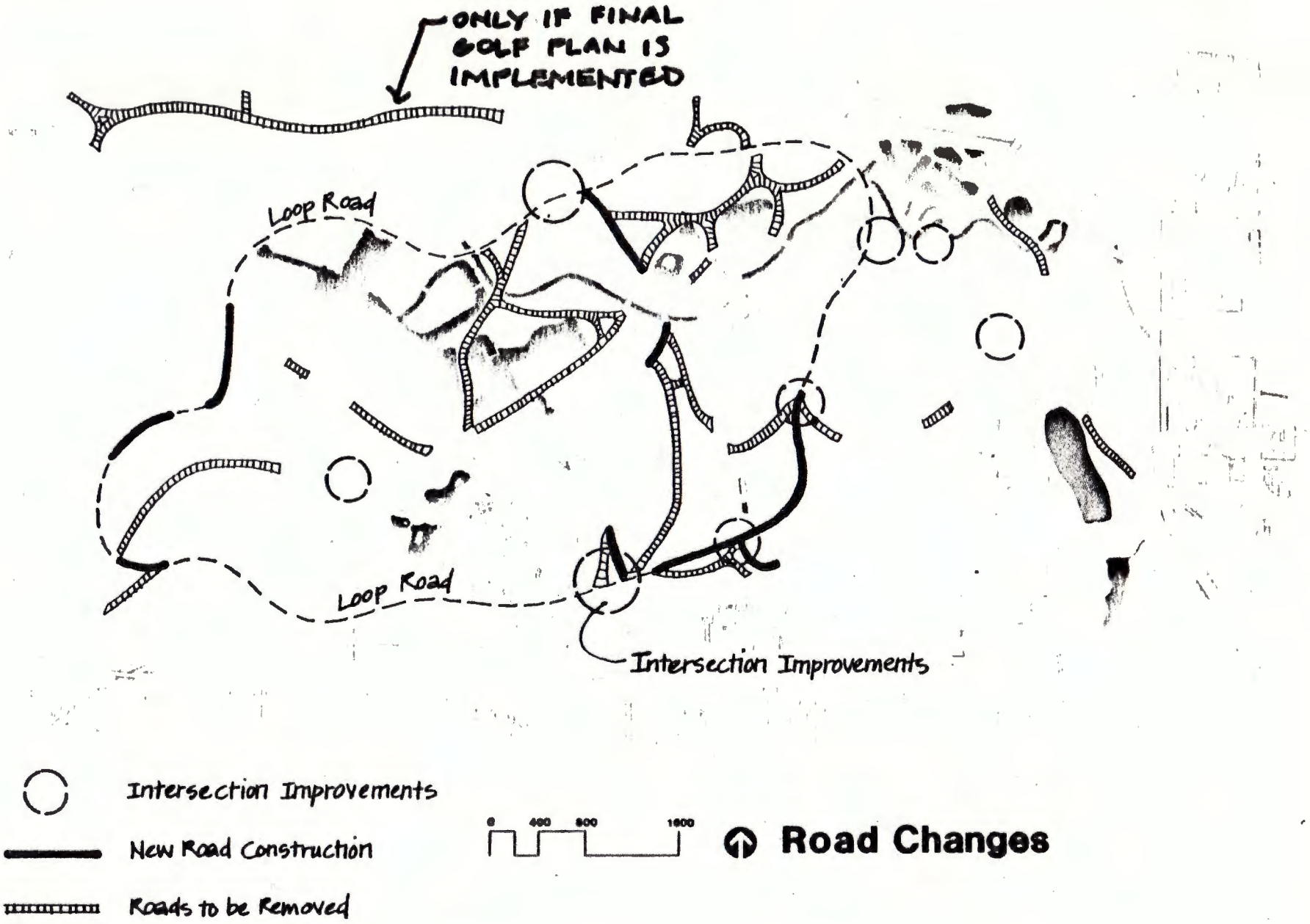
Fourth, the loop road should be accomplished by staged improvements necessary to make the concept operate. The loop road should be allowed to operate while the proposed road closings are made on a scheduled basis. The system should be monitored over a year's time. Only at that point should crucial road closings be made permanent and, in some cases, the pavement removed.

Road Removal

The implementation of the loop road concept allows for a significant amount of removal of unnecessary and redundant roads. The park now contains 18 miles of roads. Of that, 5 miles are recommended for eventual removal. Other roads have been shown on the Master Plan as converted into parking areas to provide for some of the spaces lost in road removal where on-street parking was in effect.

Parking

There are presently approximately 5,600 parking spaces in Forest Park--3,950 in off-street lots and 1,650 in legal curb parking areas. The proposed park roadway plan would have a significant effect on parking supply insofar as it would eliminate a number of roads where motorists now park at the curb and because parking would not be permitted on the main loop roads. The resulting loss of 1,105 curb parking spaces would be offset by creation of new off-street parking areas conveniently located with respect to park activities. Small,


ONLY IF FINAL GOLF PLAN IS IMPLEMENTED
Loop Road
Loop Road
Intersection Improvements
Intersection Improvements
New Road Construction
Roads to be Removed
0
400
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1600
Road Changes

off-street parking areas would also be provided within short walking distance from assigned picnic areas. The total of new parking spaces in the park would be 5,745.

Proposals for new or expanded parking facilities are alluded to in the preceding section of the report. The following is a brief appraisal of conditions at each of the major activity areas.

Zoo — Supply of approximately 1,600 parking spaces would be adequate for normal peak season demand. Some overflow could be accommodated at the enlarged World's Fair Pavilion lot.

Art Museum — Parking capacity would be expanded by 110 spaces and should be adequate for ususal demand. Overflow could be accommodated in the north Zoo parking lot, but this should be an infrequent occurrence.

Planetarium — The existing parking lot west of the Planetarium would remain inadequate to accommodate peak-day users. Some curb parking spaces on the secondary loop road would be used by overflow parkers.

Steinberg Rink — Parking supply would remain at the present level and would be adequate.

Muny Opera — Parking supply in the immediate vicinity of the Muny Opera would be approximately 1,480 spaces, compared with 1,590 at present. At times of opera events, additional parking capacity could be obtained through use of other nearby parking lots or provision of curb parking on the loop road.

Jefferson Memorial — Parking capacity has been doubled. There should be adequate capacity in parking lots adjacent to the Memorial to accommodate the maximum level of demand.

Jewel Box	Parking capacity at the Jewel Box remains approximately the same as at present and should be adequate for the present level of demand.
Davis Tennis Center	A new parking lot west of the Tennis Center would nearly double the number of spaces available for users of this facility. The substantial number (400) of spaces developed in the lot to the east will be able to supplement parking for the Tennis Center, the children's playground and the Lindell Pavilion area when the Muny Opera is not in use.
Golf Courses	Parking facilities for the AAA and Eisenhower golf courses would remain nearly the same as at present. There should not be a problem in accommodating golfers.
Athletic Fields (north and south groups)	Parking supply near the northeast playfields would be increased. There would still be a problem, however, in accommodating peak day users in the immediate vicinity of the southeast playfields. Curb spaces on the secondary loop (Clayton Road) would be required to augment off-street supply.
Picnic Areas (central and southwest areas)	Off-street parking facilities for park picnic areas would be increased through provision of several "pocket" parking lots adjacent to the major and secondary loop roads.
Park Administration	A small parking area would be provided adjacent to the Department of Parks, Recreation and Forestry offices and maintenance area. This would provide better parking for employees and visitors.

EXISTING AND PROPOSED PARKING

Area	Number of Parking Spaces					
	Existing			Proposed		
	Off-Street	Curb	Total	Off-Street	Curb	Total
Zoo	1,400	200	1,600	1,400	160	1,560
Art Museum	200	100	300	370	40	410
Planetarium	90	80	170	90	80	170
World's Fair Pavilion	100	100	200	150	30	180
Steinberg Rink	240	50	290	240	50	290
Muni Opera	1,350	240	1,590	1,360	120	1,480
Jefferson Memorial	50	30	80	160	-	160
Jewel Box	40	70	110	110	-	110
Davis Tennis Center	50	90	140	110	50	160
Golf Courses						
Triple A	30	20	50	30	20	50
Municipal	30	20	50	50	-	50
Athletic Fields						
South	130	180	310	170	115	285
North	70	130	200	230	30	260
Picnic Areas						
Southwest	60	170	230	230	-	230
Central	90	140	230	280	30	310
Boat Dock	20	30	50	20	20	40
TOTAL	3,950	1,650	5,600	5,000	745	5,745

Forest Park should take advantage of as much mass transit as possible in order to reduce the general impact of automobiles on the park. The three means which can potentially be of assistance are the existing Bi-State intra-city bus system for transporting people to the park, a tram system which could move people within the park, and the citywide light rail system, presently under study, which could better link the park to the rest of the region.

Bus

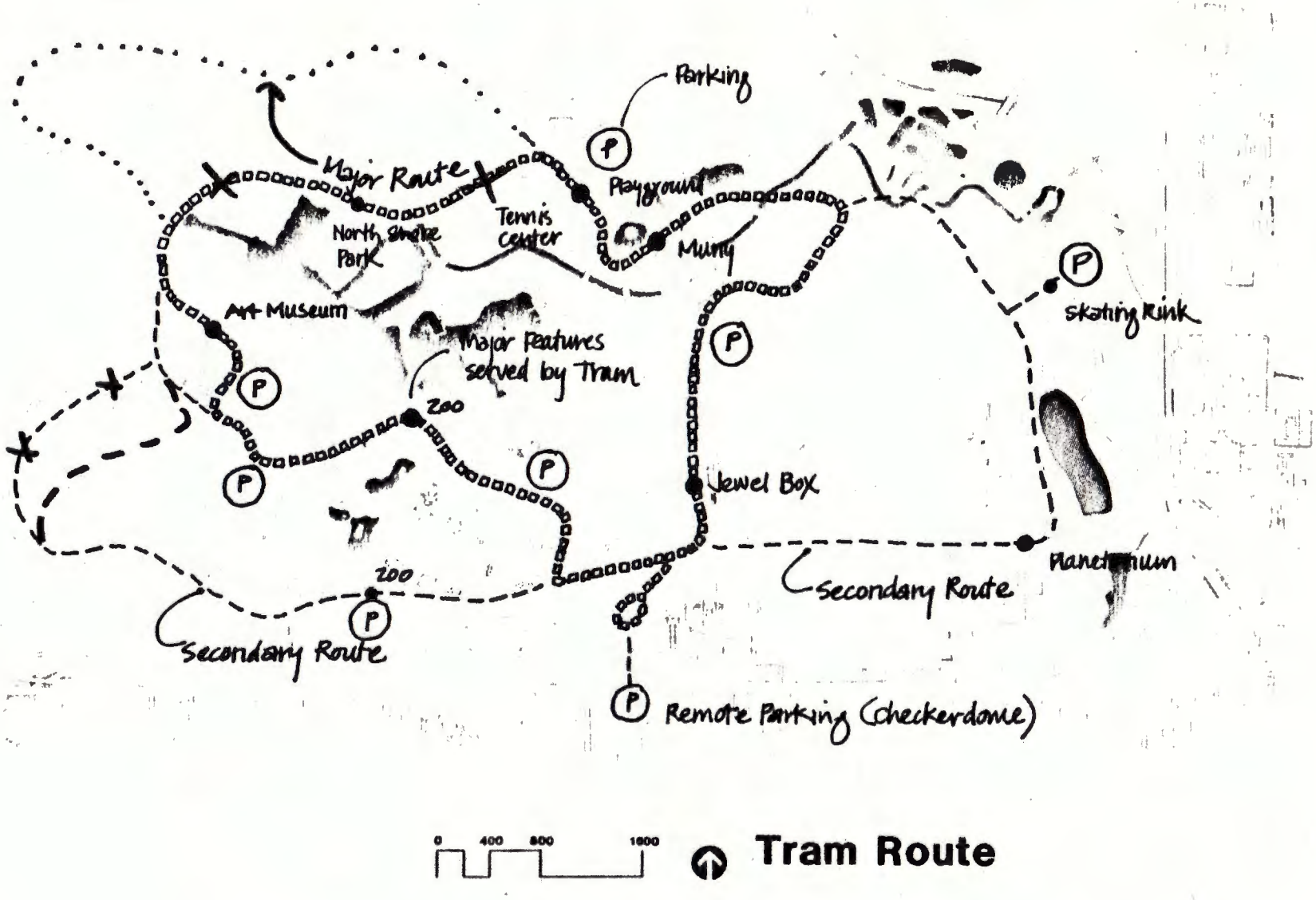
At the present time there are only a few bus lines which pass through the park. They do not serve the major facilities well since the buses are generally routed in the most direct way through the park rather than routed to pass by the facilities - an approach which would be difficult given the configuration of the present road system.

The proposed loop road system will make it possible for buses to bring people closer to several of the major facilities, including the Art Museum and Jewel Box. It is recommended that Bi-State take this need into consideration in future re-routing of buses.

Transportation System

There have been several attempts to implement an inside-the-park tram system in Forest Park. Each has failed to generate a meaningful number of riders. The concept, however, may again be valid because of the proposed restructuring of the park road system and the increased desire for users to park in some of the existing out-of-the-way and underused parking lots and move about through the park on a system of small vehicles.

It is recommended that a transportation system be implemented in a two phase process and suggested that Bi-State Development may be the appropriate agency to operate


Parking
Major Route
Playground
North Shelter Park
Tennis Center
Muny
Art Museum
Skating Rink
Major Features served by Tram
Zoo
Jewel Box
Planetarium
Zoo
Secondary Route
Secondary Route
Remote Parking (checkerdome)
0
400
800
1600
Tram Route

the system. The tram or small vehicle system should be free or nominally priced and should limit itself to serving the core area and the major parking lots such as the Muny and the Zoo lots.

The first phase of the system's implementation would involve using the automobile road system. The second could involve a separate path for the tram vehicles to use in order to bypass points of vehicular congestion on extremely high use weekends.

The tram system may eventually be a major factor in park circulation. At its inception, however, it should be seen as a supplementary system which must withstand a testing period before great dependence is placed upon it.

Light Rail

East West Gateway Coordinating Council has analyzed the feasibility of constructing a light rail system which would link the east and west edges of the most densely populated portion of the region. The system is, implemented, proposed to use the Wabash Railroad alignment which passes through the northeast portion of the park.

If the level of visual and noise screening which presently exists around these tracks is maintained or duplicated, the loss of the small amount of park land to the light rail system would more than be offset by the increase in access which it would provide. This increased access potential is based on the assumption of a station location at either DeBaliviere, Union or Kingshighway from which park users could be linked to the internal tram system discussed above.

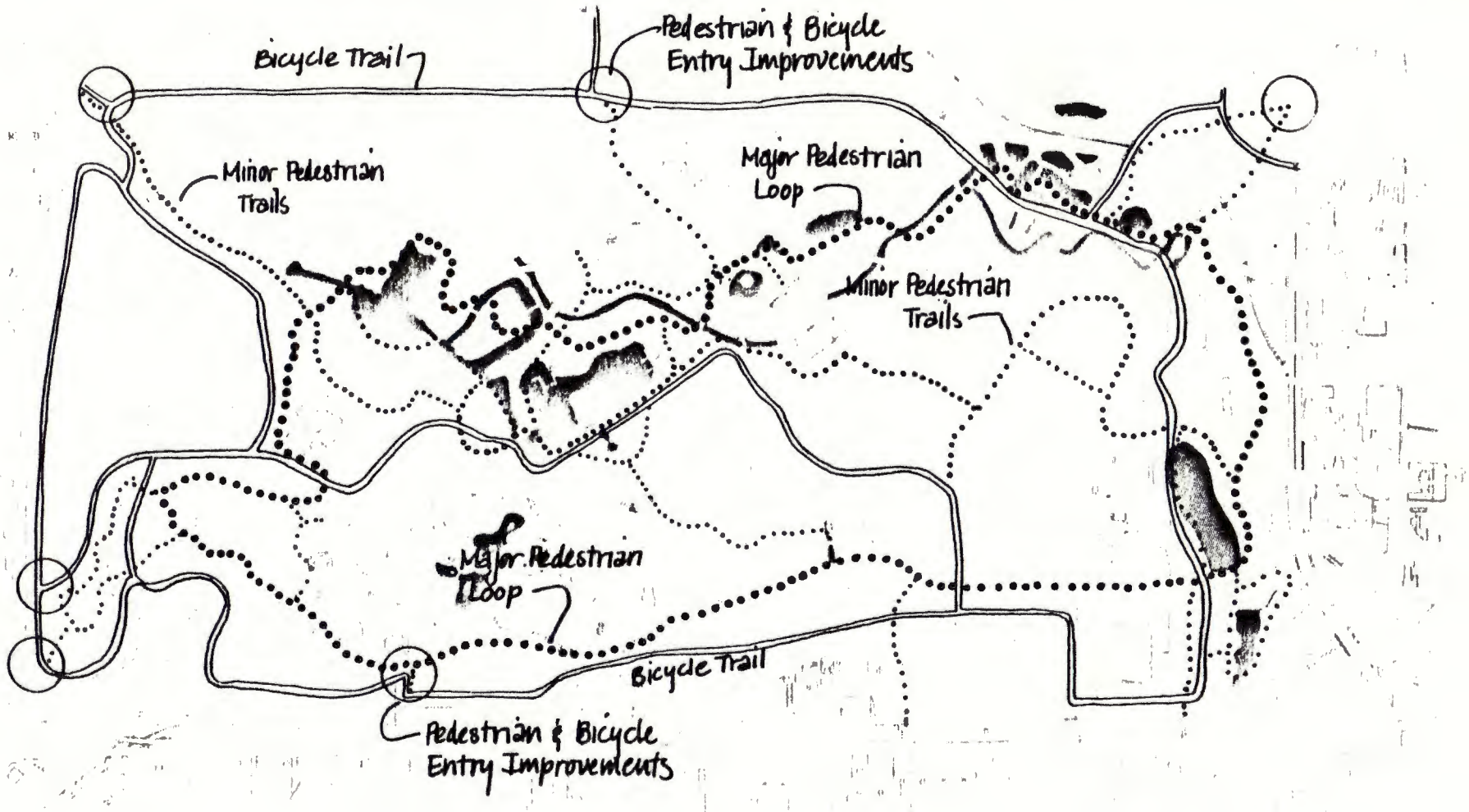
Forest Park was never designed as a walking park. Its roads and drives were seen as the means by which people would move around. Over the years, pedestrian improvements have been added incrementally without any overall objective in mind.

Two important pedestrian systems are recommended. The first is a network of walkways in the core area itself. It would provide the means of enjoying the park and using more than a single facility during each visit to the park. The network of walkways should include the minor improvements such as drinking fountains, benches, access to restrooms, small play areas and signs which are essential to the use and enjoyment of any park. The network should encourage remote parking by providing access to the large Muny Opera lots which are presently underused during weekend peak park use times.

The second pedestrian system is a link which would run diagonally through the park from the northeast to the southwest corners. It would parallel the chain of small lakes and the River Des Peres lagoon, pass through the core area and continue through Kennedy Forest. This two mile system would substantially expand the time and distance of a recreation experience in the park. It is important that both systems be fully accessible to disabled individuals. The relatively flat topography in the northern part of the park would be especially suitable for use by disabled individuals.

One of the most successful and well-used recent improvements to the park is the bicycle path which circles the park near its edges. A secondary connection through the core area has also been successful although there is a certain amount of conflict with pedestrians in this area. It is recommended that two changes be made to the bicycle path system.

First, the conflict in the core area should be reduced by realigning the path through a less congested part of the core. Second, conflicts with other types



Pedestrian and Bicycle Systems

Present Travel Demand

Traffic counts made by the City of St. Louis were analyzed to determine the volume of traffic using park roads and variations in traffic by season, day of the week, and hour. As expected, the volume of traffic entering and leaving Forest Park was found to be greatest during the summer months. On an average summer weekday in 1978-1979, about 35,000 vehicle trips were made to and through the park. Saturday and Sunday traffic volume was approximately 10 percent less than on weekdays.

The weekday travel pattern is characterized by a morning peak occurring from about 7 to 9 AM and a substantially higher evening peak from 4 to 6 PM. Traffic leaving the park on a weekend day (Saturday or Sunday) builds up steadily after about 8 AM to a peak which was found to occur between 4 and 5 PM. Peaks in both weekday and weekend traffic also occur around midnight each day. This phenomenon is probably primarily a product of shift changes at the medical centers to the east including the present use of the Muny Theater upper parking lot for remote parking.

Greater than normal traffic volumes would be expected on days when there are special events in the park, but it would be impractical to plan roads and parking facilities to accommodate these unusual demands. Instead, the appropriate level of demand for purposes of developing a Master Plan would be that expected to occur on a normal busy day. Special events in the park will require individual consideration depending on the nature of the event.

Through Traffic

Accommodation of motorists using the Forest Park road system as a through route--that is, those who drive through the park without stopping there--is particularly important in view of peak period traffic conditions on adjacent streets. Traffic counts by the City of St. Louis indicate that the two major north-south arterials in this section of the City, Kingshighway and Skinker

Traffic volume on the loop road in the heaviest direction of travel would be in the range of from 200 to 700 vehicles per day. The greatest volume in a single direction throughout most of the park road system would not exceed 500 vehicles per hour. All but one short segment of the proposed loop road--from east of Hampton Avenue to the junction with Clayton Avenue--would operate satisfactorily during the weekday AM peak with one lane of traffic in each direction.

PM Peak-Weekday - Total park traffic in the evening peak hour would be about 35 percent higher than in the morning peak hour. The following table shows a comparison between the estimated number of inbound and outbound vehicle trips by park users and motorists driving though the park in each peak hour:

ESTIMATED WEEKDAY TRAFFIC VOLUME

	AM Peak Hour			PM Peak Hour		
Direction	User	Through	Total	User	Through	Total
Inbound	830	1,960	2,790	230	2,550	2,780
Outbound	-	1,960	1,960	950	2,550	3,500
TOTAL	830	3,920	4,750	1,180	5,100	6,280

The heaviest projected traffic volume on the park road system would be 830 vehicles per hour on the short segment east of Hampton Avenue to the junction with Clayton Avenue. The estimated hourly traffic volume would also exceed the desirable maximum for a two-lane facility throughout the southwest portion of the loop road between Hampton Avenue and Forsyth. All other segments of the system would carry traffic volumes of less than 600 cars per hour in one direction--most in the range of from 200 to 500 vehicles per hour.

Peak Hour-Weekend - The weekend peak hour traffic estimates represent anticipated conditions on a busy Saturday, Sunday or Holiday. Of approximately 5,000 combined inbound and outbound trips during the peak hour (usually from 4 to 5 PM), 2,700 (54 percent) would be made by park users and 2,300 (46 percent) by motorists driving through the park.

of recreation on the remainder of the path should be remedied by creating parallel paths. A new path possibly composed of a material more resilient than asphalt should be built, especially for jogging and running, to alleviate the conflicts between runners and bike riders. Roller skaters are another element in the user conflict on the bicycle path system and should be considered when planning a new parallel path.

The entire internal bicycle path system should be reinforced by making connections to the surrounding areas. This can be in the form of portions of the entry roads being set aside for bicycle travel only.

7. THE LANDSCAPE

The basis for the enjoyment of any park is its landscape including the form of the land itself and the plant materials. In Forest Park, no major changes in the landform are contemplated. The park contains thousands of mature trees, which are a major attribute. However, there are certain modifications, primarily to the configuration of plant materials, which are appropriate.

The landscape in each of the major areas of the park should be treated differently to allow the landscape to complement the uses within the area. In order to accomplish this, four types of landscapes have been identified and defined so that they can provide a guide for the future improvement of the park's environments.

The major landscape types and the areas of the park to which they should be applied are:

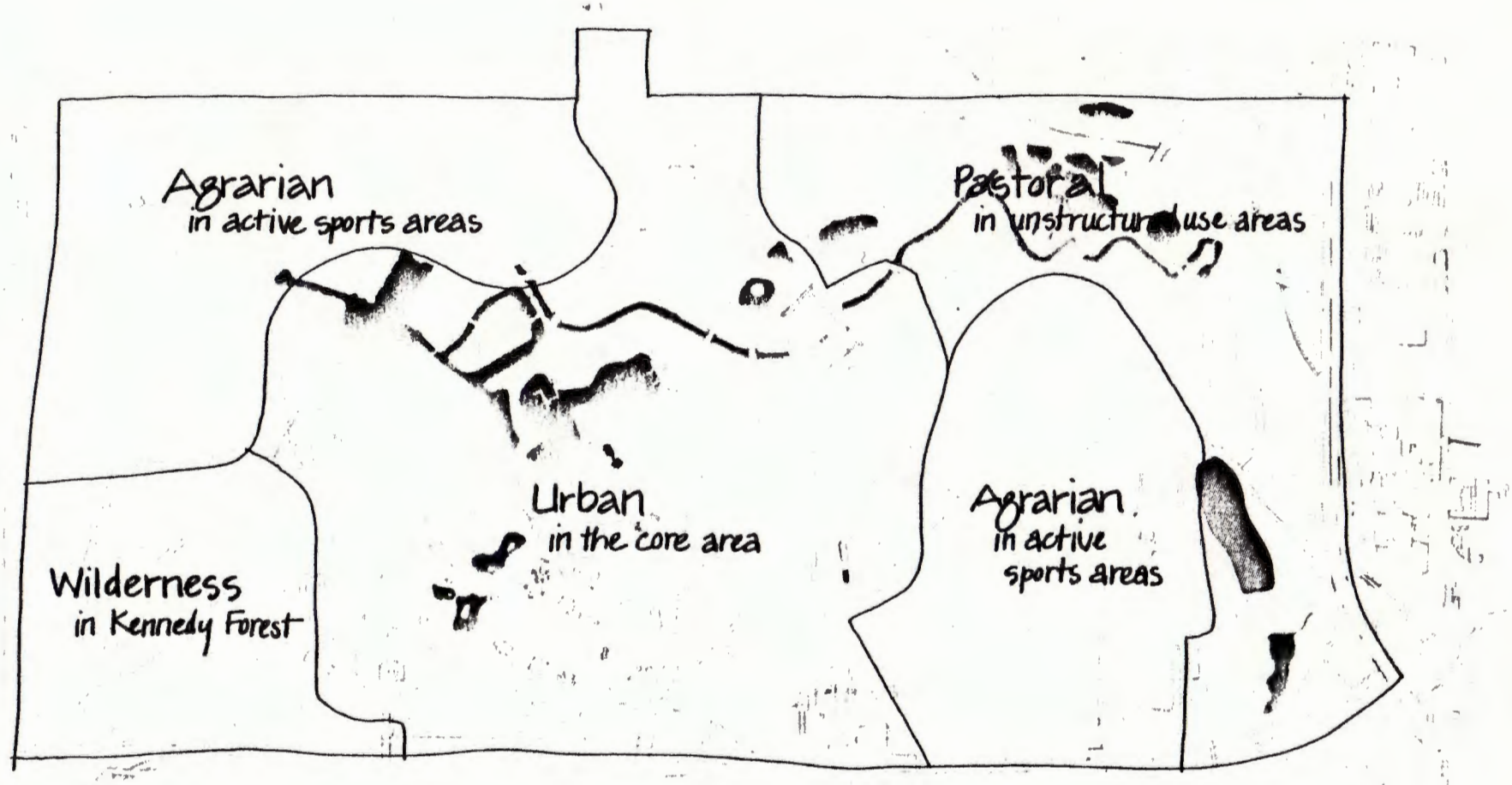
Urban Landscape in the Core Area: The objective is to provide scenery and backdrops for major institutions and activities and a context for pedestrian movement and enjoyment.

Agrarian Landscape in the Active Sports Areas: This type of landscape is analogous at a distance to planted fields interspersed with wood lots and windbreaks.

Pastoral Landscape for the Unstructured Use Areas: The combination of open lawn areas and large trees which was derived from the 19th century parks movement and, before that, from the tradition of English landscape gardening, is especially appropriate in these unstructured uses.

Wilderness Landscape in Kennedy Forest: The perception of humans as only visitors to a landscape under control of natural systems should be the goal in this area.

Further discussion in this section covers a detailed description of each of these landscape types and recommendations for improving the park's edges, entry points and opportunity areas.



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Landscape Types

7.A URBAN LANDSCAPE

The core area should be viewed as an urban landscape. It should provide a pleasant setting for the institutional and park uses and, most of all, an attractive connecting element between these uses, including the more formal landscapes such as Art Hill and Government Hill.

The areas between the major uses and institutions should remain planted with mature, well-spaced hardwood trees. Additional planting in the core area should concentrate on accenting the existing situation with groups of smaller, more decorative trees. Flowering trees in particular should be planted in this area. These should be planted in carefully defined areas taking into consideration views, pedestrian circulation routes and the other changes contemplated in the park. The trees should be planted in relatively large groups commensurate with the scale of the park.

Specifically, the goals for the core area should be to:

- Create a pleasant pedestrian-scaled environment including the use of lower plant materials to create and terminate views as well as the inclusion of more conifers for winter foliage.
- Use large informal groups of ornamental and flowering shrubs and trees to add color and vitality to the core area.
- Use formal groups of plants to reinforce axial views such as in the area of Art Hill and Government Hill.
- Add remedial landscaping around and in the parking areas.

All of the above changes should be made after the preparation of a detailed landscape planting plan for the core area. This planting plan should be a goal to be worked toward over the next five to ten years as should the planting improvements in the remainder of the park. This is especially true since the replacement of plant materials in a park as large as Forest Park must be an ongoing process.

The active sports areas of the park are generally attractive and in relatively good condition from the visual standpoint. These areas, however, need improvement in two ways. First, the fields should be further screened from the surrounding roads so that the visual continuity of a park landscape is maintained as people drive and walk through the park. Second, where possible, trees should be planted between groups of several fields to divide these large flat areas into less monotonous views. In this way, the playing fields can become more like open areas within a park rather than as the massive athletic facility which they now appear to be.

A particular planting issue exists in the golf course areas of the park. In recent years, extensive planting of a variety of types of trees has been accomplished along the edges of the fairways. These trees help to define the fairway for the golfer and contribute to the overall park landscape as well. However, the pattern of planting these trees in long, relatively straight lines is too formal a pattern for these large areas of the park. The next step should be to go back and add trees in a manner which will informalize these areas and make them appear more natural.

7.C PASTORAL LANDSCAPE

The basic elements of a fine landscape already exist in the unstructured use areas of the park. A more detailed planting plan should be prepared for these areas, developed around the concept of varying the density and height of trees and shrubs to achieve substantially more visual variety than now exists. Presently, views through this area are too similar to one another since there are few understory trees or shrubs.

It is recommended that masses of lower plant materials be planted to add variety and to terminate views which now extend to the surrounding roads and, therefore, pick up the sight of automobile activity.

7.D WILDERNESS LANDSCAPE

The Kennedy Forest area of the park should be carefully managed to exhibit more of the qualities of natural systems as they exist in a typical oak-hickory forest in the Ozarks. While the artificial construction of a natural environment is unusual, there are good reasons for this approach. Of primary importance is the need to get as much value as possible out of this small but extremely significant remnant of what the area once was like.

Specifically, some of the brushy areas in Kennedy Forest should be managed to produce a more typical Ozark forest floor cover of leaves and small plants between the lower understory trees. The wildlife habitat improvement measures noted in a previous section of this report should be followed, including: the planting of species which can be used for wildlife food, using only native Missouri plant species in Kennedy Forest, and undertaking an ongoing program of removal of any imported species.

7.E EDGE CONDITIONS

This area of concern covers conditions along the edges of the park itself and with the areas just outside the park, including City streets and highways, institutional and commercial facilities, and private residential land. Recommendations concern the use of park land which is separated from the main area of the park by roads and railroads, and the regulation of development adjacent to the park, but on private or institutional property. The four edges will be discussed individually since they are each quite different.

The edges of the park should be reinforced with plant materials so that the passerby can distinguish between the surrounding urban environment and the park itself. The variety of existing situations does not allow for a single solution to be used in all cases, but the principle of definition of the edge should be a guide. Of special importance is the edge along U.S. 40 which needs substantially more low planting especially where the athletic fields and park maintenance areas are so close to the highway.

Northern Edge

From Skinker Boulevard, on the west end, to Kingshighway Boulevard on the east end, this northern edge is bordered by large private homes. They are separated from the park by Lindell Boulevard, a pleasant, four lane, arterial street which carries a moderate amount of traffic. Within the park, there are no major activities with the exception of the Jefferson Memorial, which is opposite the DeBaliviere entrance. At this point a strip of park land approximately five hundred feet wide extends north to the Forest Park Parkway, one block north.

This extension of park land from Lindell to Forest Park Parkway should be improved as a major pedestrian entry to the park. The high density of development to the north would benefit from an increased emphasis on this entry area.

This edge of the park should remain as it is today with very few exceptions. There is not a wide enough band of underused land along this edge inside the park to justify major development here. It is ideal for facilities such as the existing bicycle path and additional related facilities such as an exercise course and jogging path.

The Master Plan proposes that Grand Drive, from Skinker to the Jefferson Memorial, be eliminated and that new golf holes eventually be added in its place.

East of Union Boulevard is an irregular strip of land separated from the rest of the park by the railroad and Forest Park Parkway. This strip actually extends around to the eastern side of the park to where Forest Park Parkway exits the park to the east. This area includes a major park entry road and should be designed to accentuate that feature. In addition, it should be able to accommodate passive use from the adjacent areas, especially to the northeast and east including the Chase-Park Plaza Hotel and the high density residential development.

The pattern of private development to the immediate north of the park is stable and will probably not be under pressure to change in the near future. Eventual development pressure would probably be in the form of high-rise residential buildings. It is recommended that high-rise buildings be allowed within one thousand feet of the DeBaliviere and Union entrances only. This will provide a visual counterpoint to the entrance and will prevent the building of a wall of high-rises along this edge of the park.

Eastern Edge

From Forest Park Parkway to the end of the medical center at Barnes Plaza is continuous high density medical development along Kingshighway across from the park. Inside the park is part of a wide strip of land which has been

recommended for improvements directed toward the further use of the land for passive recreation. The Steinberg Skating Rink area has been designated as one of three new development areas and was treated in the Opportunity Areas section of this report.

Development to the east of Kingshighway should not include use of the air rights above the street, since this would produce a negative visual impact on the park. Similarly, the pavement of Kingshighway should not be extended further into the park than necessary to create a full moving lane out of the existing parking lane on the west side of the street.

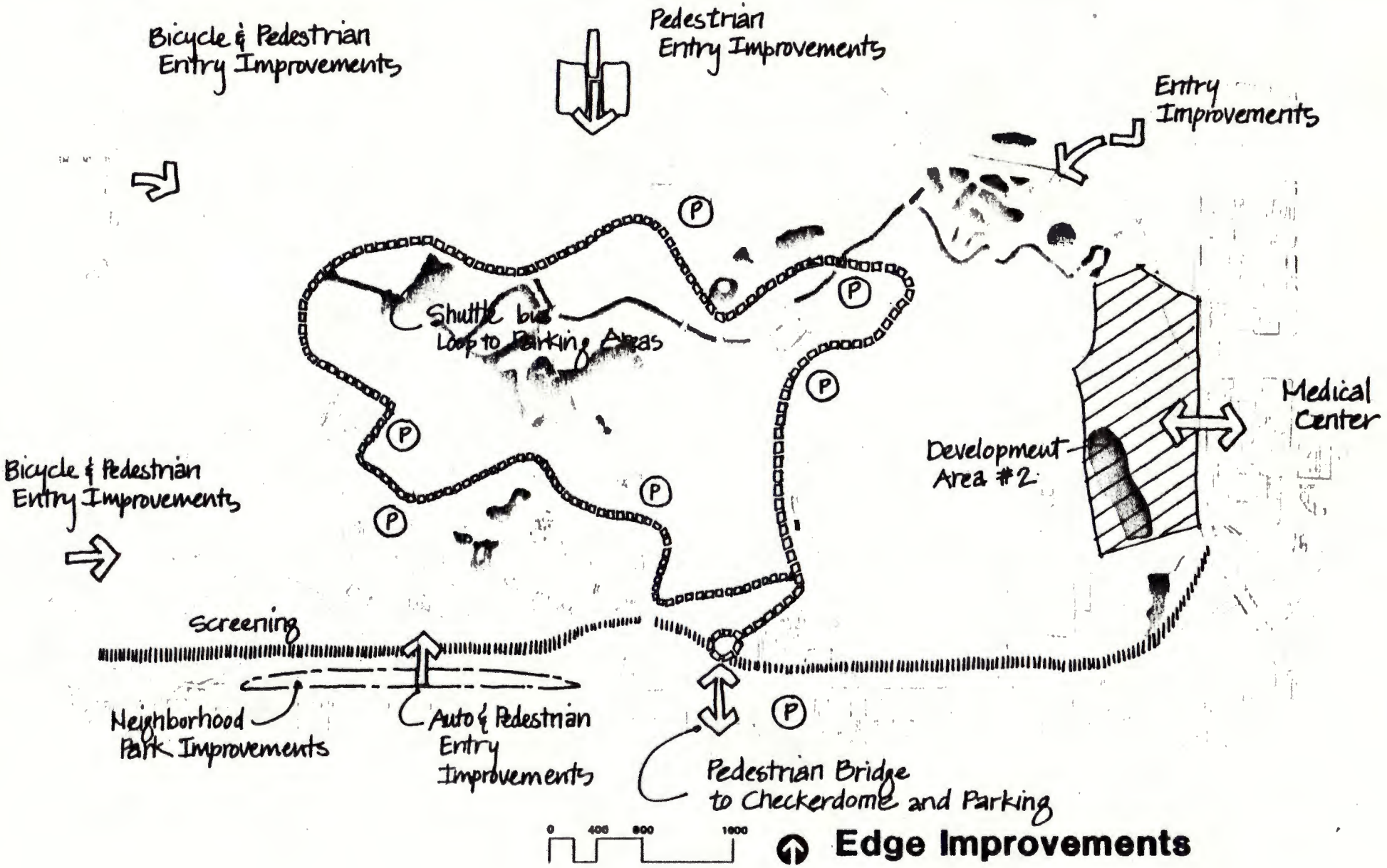
The street improvements to West Pine Boulevard and Barnes Plaza which extend into the park were made to accommodate turning movements on Kingshighway. This is an inappropriate use of park land and should not be allowed in the future. The impact of the additional traffic created by these road improvements upon the park will go beyond the park's responsibility to its surrounding urban area.

The Barnes Hospital parking garage has already severely limited the use of the portion of the park which extends to the east of Kingshighway. Any treatment of this area should be an attempt to reintroduce elements of the passive park which once existed there such as trees and shrubs to block the view of the garage's ventilation towers.

Southern Edge

The treatment recommended for the southern edge of the park consists of the addition of plant materials to act as an intermittent screen between the U.S. Highway 40 and the park to the north.

Several pieces of the park land exist just to the south of the highway. These include the triangle of land at Kingshighway which contains the City fire alarm headquarters building, and the strip of land stretching from west of the


Bicycle & Pedestrian Entry Improvements
Pedestrian Entry Improvements
Entry Improvements
Shuttle bus Loop to Parking Areas
Bicycle & Pedestrian Entry Improvements
Development Area #2
Medical Center
Screening
Neighborhood Park Improvements
Auto & Pedestrian Entry Improvements
Pedestrian Bridge to Checkerdome and Parking
0
400
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1600
Edge Improvements

Hampton interchange to Skinker Boulevard. Virtually nothing more can be done with the remainder of the fire alarm headquarters site. It should remain as visual open space. The strip of land to the west of the Hampton interchange, however, should be allocated to neighborhood park use to benefit the residential area to the south. Improvements should include more playground facilities and seating areas. Appropriate pedestrian safety features such as traffic lights with push button walk signs should be provided to improve the access.

At the Tamm bridge, design changes should be made to emphasize this pedestrian and vehicular entry point. The two triangles of land between the highway and access ramps should remain as visual open space.

Private development south of the park is commercial, east of Hampton Avenue is institutional, and west of Hampton Avenue is residential. Two pedestrian bridges and a tunnel exist along this edge at the St. Louis Community College, at Macklind (the tunnel), and at the Planetarium. The potential for two more pedestrian bridges exists.

First, a bridge farther to the east at the Community College site would help to make the connection between the College's athletic facilities and the playing fields across U.S. 40 in the park.

Second, a pedestrian bridge at the Checkerdome would make it possible to set up a remote parking system which could benefit both the Checkerdome and the park. The pedestrian bridge would allow people to move relatively easily from a Checkerdome event to a shuttle bus waiting in the park. The bus would then transport them to one of the large park parking lots which are presently underused. The system would work because it would get remote parkers out of the traffic problems created during Checkerdome events. In reverse, the system would allow for use of the parking resources around the Checkerdome

when major special events were taking place in the park. The remote parkers would park at the Checkerdome, walk across the pedestrian bridge and board a shuttle bus which would take them to the special events area in the park.

Any future high-rise redevelopment of the residential area along Oakland Avenue west of Hampton should be allowed only with one thousand feet of the Tamm entry point to help emphasize this entry point and to avoid a wall of buildings along the edge of the park.

Western Edge

The park edge along Skinker Boulevard includes the Kennedy Forest and the golf course. There is a major entry point near each end of this western edge. No changes are proposed for the park land itself along this edge, nor for the private development.

High-rise residential structures exist on three of the blocks near the southeast corner of the park. Any additional high-rise residential structures should be contained within this area. The single family and institutional uses to the north along Skinker should not be redeveloped for high-rise buildings which would create a wall along this relatively open edge of the park.

Entry points should be emphasized by landscaping and signs, including the pedestrian and bicycle entrance across from Southwood Avenue. A new pedestrian and bicycle entry should be created near the north end of this edge of the park.

7.F SPECIAL CONDITIONS

In addition to the above general areas, two important special conditions need landscape treatment.

Entry Points - A sense of entry should be created at the major points of vehicular ingress to the park. This can be accomplished with plant materials by narrowing the visual passage into the park at those points. In some cases, the most appropriate visual entry point should occur somewhat inside the park boundary due to the intrusion of the City street system into the park.

Opportunity Areas - Planting concepts for these areas must be prepared in concert with the actual development plans. In general, they should be related to the park surroundings as well as the needs of the development itself.

The process of modifying the park landscape is ongoing. The approaches presented above can guide decisions about the type and location of new plant materials. If these approaches are followed, the park landscape will gradually become more appropriate to the uses of the park.

8. MANAGEMENT

Forest Park is generally well managed by the Department of Parks, Recreation and Forestry. This City department is responsible to the City Administration and is advised by the appointed members of the Parks Board. Two especially important management issues have emerged from the work on the Forest Park Master Plan:

Maintenance and Repair

Maintenance in Forest Park is generally good but the park's budget allocation for this item should be increased to cover items known as deferred maintenance or repair. Much has been accomplished in the past few years with the help of federal funds to make major repairs to facilities such as the World's Fair Pavilion and the Government Hill Fountain. What remains are a few more major items such as the Cascades (built in 1938) and some of the bridges.

The deferred maintenance items (between ordinary maintenance and major repair) are the most difficult to fund since they must depend on an increase in the park's budget from the City.

Engineering conditions in the park are fundamentally good. Most of the concerns noted by the Department of Parks in this area are sewer-related items. A few areas of the park flood when it rains heavily. It may be that the feeder sewers are blocked or collapsed at those points, or simply are not large enough to transport the overflow water. The standing water has caused predictable damage to the street and curbline. The Department of Parks has already slated those sections of roadway for repair. However, the drainage situation needs an engineering study completed to determine capacities and possible locations of new sewer connections to alleviate the water problems.

Security

In any large urban park, security is a concern of park administrators and park users. A statistical evaluation of crime in the park was a part of the User Demand Survey. It indicated that there is a relatively low crime rate in Forest Park and that most of the crimes are theft which, in many cases, is auto-related.

The probability of being a victim of crime in Forest Park is quite low, but the park is not immune to urban realities. Most crimes, including serious crimes in the park, occur in densely populated areas.

Forest Park is generally well-policed although two aspects of the situation could be improved. First, the Park Security Police, a division of the Department of Parks, has a small staff and is not well-funded. It is recommended that this force be reorganized and its enforcement role be allocated to the St. Louis Metropolitan Police Department's Second District which now serves the park. The Park Security Police should be changed into a group similar to National Park Service rangers who provide assistance and information to park visitors.

Second, the mounted police operation which is run by the Second District has been successful in the park. Increased presence in the park is extremely important in the perception of security and therefore in people's decisions to use the park. Additionally, the bicycling plainclothesmen program should be better funded. The tremendously increased use of this facility for bicycle riding, walking, running and roller skating merits another bicycle patrol campaign to make the community aware that those users are safe in the park.

In conclusion, Forest Park gets a "relatively safe" rating from the MPD and the security police that patrol it. More could be done to improve the safety by such software methods as tree and shrubbery trimming in difficult-to-patrol

areas, retiring some of the redundant roadways in the park to make patrolling more effective, and a public education program that might include print and electronic media on how to use the park, and how to employ common sense safety precautions to increase the enjoyment of being in Forest Park. Safety awareness is not a term that should be seen in a negative light. It is simply good sense. An overly protective program of floodlighting the park with two policemen behind every bush and tree would be ridiculous and far too expensive. Security in Forest Park does not require such drastic measures. The current program appears adequate, and with a few improvements could be better. Beyond the above, only the usual common sense precautions by users will further reduce the amount of crime in the park.

9. IMPLEMENTATION

This section of the report deals with the means of implementing the physical recommendations of the Master Plan. It proposes budgets for improvements and it suggests a strategy for funding the implementation of the Master Plan.

The Master Plan is generally ambitious, but it is also realistic enough to be implemented over the next ten years. Implementation is most important since Forest Park is such a vital part of the quality of life of local citizens.

The implementation of the Forest Park Master Plan will be complex and demanding. No single source has the power and the financial capacity which is so important to the citizens of St. Louis.

9.A THE IMPLEMENTATION PROCESS

Three functions are essential in implementing the Forest Park Master Plan: administration, regulation and support.

Administration - An identifable governmental entity must be in charge of the administration and accomplishment of the plan. The logical choice is the St. Louis Department of Parks, Recreation and Forestry who administers the park itself. In addition, an individual should be designated within the Department (as a full-time position) to coordinate the implementation of the plan. This role would include coordination between city agencies and departments, as well as making grant requests and organizing public relations. In addition, it may be appropriate to strengthen the Parks Board to include influential individuals, and to redefine the role of the Board.

Regulation - Equally important to the Plan's realization is a public body to regulate the changes and improvements proposed for the park. The objective would be general conformance with the Plan. It is proposed that the Plan be adopted by an agency which already has these powers--the Heritage and Urban Design Commission. Their powers of review could be tied directly to the intent of the Plan if it were adopted as a "Landmark" or a "Landmark Site" under Ordinance 57986, The Heritage and Urban Design Code, Section 896.050. In order to prepare the application for this designation, the master plan may require some additional historic background material. The application will be voted on by the Heritage and Urban Design Commission and the Board of Aldermen.

Support - General public support is essential to continuous progress on the Plan. A Friends of Forest Park organization should be established for this purpose. The organization should have a broad base of membership and a small but very influential board.

9.B AN IMPLEMENTATION STRATEGY

There are several specific implementation approaches which have emerged and which, taken together, could form the basis for a strategy. They are discussed below in a sequence moving from the public to the private sector.

A. Adoption of the Plan by City Departments

There is now and will be money spent in Forest Park by the Department of Parks, Recreation and Forestry and the Department of Streets and Traffic, as well as possibly other City departments. The adoption of the plan by these departments, whether formal or informal, would focus available funds on making changes and improvements to the park as suggested in the plan, rather than according to other criteria.

One example of available funds (and staff effort) is the Department of Parks tree planting program which goes on in Forest Park. This program could easily be directed toward achieving the recommendations outlined in the landscape section of the Plan. In addition, the Department of Streets and Traffic has indicated its ability to remove unneeded roads and to focus any available road improvement funds on the

The formal adoption of the Plan by the Board of Aldermen would not be necessary for the above type of administrative policy to be implemented. CDA could assist departments in coordinating their efforts if the Plan were accepted by the Mayor's Office as part of its administrative policy.

B. Bond Issue Funds

This most obvious approach to funding improvements in the park may have some potential in the future. In terms of general obligation bonds, its potential probably depends upon four things. One, the general economic climate must at least show signs of long-term improvement. Two, the City must establish a record of living with a more balanced budget. Three,

some important positive physical changes must have been made in the park by other means of funding. Four, the bond issue would have to be for easily identified popular improvements only in Forest Park. Combination with other improvements outside the Park would probably be problematic.

Revenue bonds may also have a role in the park's development. In particular, they could be used to finance the extensive changes proposed for the golf courses. This would be subject to the feasibility of user fees being able to retire the bonds.

C. Governmental Assistance

Most federal recreational programs which, in the past, would have been called upon to implement the plan will be unavailable, or at best have very little funding allocated to them. This source, however, should not be ignored. The competition will be increased for these limited funds. This underscores the need for an organized effort to obtain funds, probably by the use of an individual whose primary resonsibilty would be the implementation of the Forest Park Master Plan.

One federal program which has some limited potential is the use of CDBG funds. Other levels of governmental funding should also be actively pursued. These include the Metropolitan St. Louis Sewer District and the Bi-State Development Agency with their bonding capabilities. These agencies could respectively fund improvements related to drainage and improvements which could produce enough revenue to retire bonds. In addition, the Missouri State Department of Conservation sales tax and its "Design for Conservation" program could provide improvement funds. This will require continual pressure from the City as well as a reorientation of Conservation's approach toward providing outdoor experiences for its urban constituents.

D. Transfer of Facilities (Public to Institutional)

Several important public facilities in the park have problems in terms of funding, programmatic lack of success or inability to achieve their potential. These facilities could be transferred as follows: The Jefferson Memorial (building) to the Missouri Historical Society; the Planetarium to the Museum of Science and Natural History; and possibly the Jewel Box to the Missouri Botanical Garden. While this may, in principle, appear to be giving away valuable facilities, the ability of these other public entities to manage, fund and program the facilities in question is impressive.

E. Expanded Responsibility for Existing Cultural Institutions

The Art Museum, Zoo, Missouri Historical Society, Planetarium and Muny Opera should all be encouraged to expand their responsibilities beyond their buildings and immediate grounds. This means being responsible for funding the maintenance and improvement of the environment within which these facilities exist and upon which they are so dependent. It also requires the careful coordination of funding for improvement programs so that those programs are in line with the Plan's recommendations. In effect, this means that the boards of these institutions should adopt the plan. Private funds which are raised should have as much potential as possible to qualify as matching funds for federal or state grant programs.

F. Cultural Centralization in Forest Park

The idea of cultural institutions pooling or centralizing certain common management activities is being tried in other areas of the country. This concept, in whatever form it might take in the St. Louis area, should be encouraged in Forest Park. With a few careful additions, Forest Park could contain almost all of the region's major cultural facilities (or at least branches of them in the case of the Missouri Botanical Garden).

In this respect, the location of the Museum of Science and Natural History is exceptionally important. If the Museum does not relocate in Forest Park, it would still be advantageous for a formal association to be developed between the Museum and the Planetarium. This would provide a presence for the Museum in the park in a similar way to that noted above for the Missouri Botanical Garden.

Given this situation, and the expanded responsibility for the care and funding of areas beyond their walls, there are many possibilities for accomplishing improvements in the park. First, the region's attention would be drawn more towad the park. This can only be helpful in obtaining any type of funding. Second, all of the Zoo-Museum District's members would be located in one area. The District itself could then begin to a more active entity, rather than primarily a conduit for tax money to its members. Third, the District could possibly be expanded to include other institutions in the park such as the Historical Society. Funds from this larger entity could begin to be used, with legislative modification, to make improvements common to the member institutions but within the general area of the park rather than only within the bounds of the individual institutions.

It is important to see the public to institutional transfer of facilities, expanded responsibility for existing cultural institutions and cultural centralization in Forest Park as related approaches to funding and implementation through the institutional sector.

G. Transfer of Public Facilities to the Private Sector

There are already places in the park where the private sector operates publicly owned facilities under a concession agreement. This approach can be carried further and could have the advantage of supplying needed services while producing some revenue which, if handled in a creative

way, could be used to fund other park operations. A good example of this approach is the restaurant improvements and operations which the Department of Parks, Recreation and Forestry intends to implement. Other candidates could include the improvement and operation of Steinburg Rink.

There are several problems with this approach in an expanded form. First, legislative action would be required to allow large amounts of concession funds to be put back into Forest Park instead of going into the City's general fund. Second, the track record of small-scale private recreation (including concessions) in this country is poor in terms of its ability to provide the quality and consistency which people expect from public facilities. The need for controls on the content of concession agreements and the means of concessionaire selection cannot be overemphasized.

H. Direct Private Capital Donations

The active pursuit of this type of funding has generally been absent from the public sector's efforts to make capital improvements. It has, however, been both common and extremely successful as an institutional approach to funding. In order for it to work, two things must happen. First, the facility, in this case the park or a specific facility within it, must be identified, singled out and promoted as being a worthwhile recipient of private funds. The private sector donors will not contribute to anything which appears to simply supplement the general funds of the City. A step in the right direction will occur when the content of the Master Plan is publicized throughout the region.

The second thing that must happen is that someone must be charged with the continuing responsibility for promoting the park and developing funding sources. Private funds will be made available only if someone asks for them in an organized and consistent manner as in the way most colleges and universities solicit funds.

There are several levels upon which private assistance can be sought. Central Park's Second Century Fund is an example of an approach where a small group of influential people solicit large donations from charitable foundations and corporations for major capital improvement and remedial maintenance projects. On another level, small groups of citizens can be formed with specific funding interest. One is now operating in Forest Park with the objective of restoring the Nathan Frank Bandstand across from the Muny Opera. Finally, a "friends of the park" organization may be able to generate a broad-based constituency for a variety of park needs. The direction and success of this kind of organization will be determined by the composition of the leadership and by the way in which the Forest Park promotion and development person mentioned previously chooses to use the group's potential.

The Plan's proposed ten-year improvement and renovation budget is $34 million. Of this, $6.5 million is for deferred maintenance, $18 million is for improvements to existing facilities and the remainder, $9.5 million, is for new facilities. Given the importance of the park and the increasing level of public dependence on it, this large a budget appears reasonable for Forest Park's next ten years, even in our present economic climate.

On the other hand, in order to justify this budget, even as a planning goal, it is necessary to prove two things. First, that there is a way to begin meaningful work on the park's renovation and improvement in the context of the City's very limited resources. Second, that the proposed level of funding can be attained by developing a variety of sources biased far more toward the private sector than toward federal programs.

Implementation should be seen as a combination of funding and administrative activities whose interrelationships cannot be denied. A case, however, can be made for the procurement of funds taking precedence since, if money is available, it is usually possible to find a way to put it to use.

Three general sources of funds must be tapped for use in the park: governmental, institutional and private. Each of these sources must be matched with certain types of improvements in order to be effective.

Government - The construction of the infrastructure elements (such as the Loop Road) must be the responsibility of the public sector. In addition, local governmental responsibility should include the recruitment of other governmental entities such as MSD and the state and federal governments through grant programs. Given the financial situation of the City it is important to emphasize the use of non-city governmental funds.

Institutional - Institutional responsibility should primarily involve an expansion of the physical area of care and improvement within the park; all within the context of the Plan.

Private - Private sector funding can cover a spectrum of sizes of improvements. They must, however, be identifiable or special and must not appear to be public maintenance and repair functions. Private in this case ranges from single individuals to major corporations.

In addition, partnerships must be encouraged between the above sources in two particular situations:

1. Governmental funds must bolster private funding projects when pieces of the public infrastructure need to be repaired or added in order to make a private sector project work.

2. Institutional fund-raising projects must be programmed in such a way that the funds can be used as the City's match in grant applications, which could multiply the available monies.

A breakdown of funding sources is provided further on in this discussion. It indicates the following sources of funds and levels of funding contributing to the implementation of the plan:

Private	$ 5,400,000
Institutional	3,800,000
Government (other than City)	6,800,000
City of St. Louis	10,600,000

It is important to recognize that the City is seen as directly funding less than one-third of the plan. The level of fund raising activities and other factors will, of course, determine the actual contributions made by each of the funding sources.

9.D PRIORITIES FOR FUNDING AND IMPLEMENTATION

Priorities relate to a weighing of issues such as the ability of the overall park system to accept new development, the need to cure existing problems and the physical relationship between areas of the park within which changes are to be made. Five levels of funding and implementation priorities are proposed.

A. Components of the basic infrastructure (such as the Loop Road), especially if they will be required to be in place in order for other progress to be made on the Plan.

B. Remedial maintenance and repair items inside the core area which affect the general quality of the environment and which will tend to cause greater problems if not remedied soon.

C. Positive additions or improvements to the environment inside the core area such as the playground.

D. Remedial activities outside the core area.

E. Improvements outside the core area.

Exceptions to this set of priorities exist but the approach should be followed in general if meaningful progress is to be made on the Plan.

Interdependencies Among Projects

These levels of funding reflect somewhat the appropriate physical sequence of many of the physical changes proposed in the Master Plan are dependent upon one another.

Four major sequences of actions lead to the completion of the following improvements:

1. Loop Road
2. Lake Expansion and North Shore Park
3. Children's Playground
4. Muny Plaza

These major improvement groups should be undertaken in the order shown above. Of primary importance is the placing in operation of the loop road since this clears the way for many of the other smaller projects.

Development Dependent Upon the Loop Road

The use of any of the three development areas at the Planetarium site, adjacent to Steinberg Rink or near the Jewel Box should be preceded by the implementation of the loop road or at least those parts of it at the Hampton interchange and from there to the connection with Clayton Avenue.

Major Independent Improvements

The following projects are more or less independent and could be accomplished without dependence on other major actions.

- Jefferson Memorial Area Improvements (primary street changes).
- Art Museum Plaza and Parking.
- Crescent Promenade.
- Pedestrian System in Central Area.

In addition to the above is a series of improvements throughout the park which cannot be categorized with any of the major projects. Such projects include reconstructing the eges of Jefferson Lake and the landscaping, drinking fountains and walkways proposed for the outlying areas of the park.

Project Definitions and Budgets

Each of the improvements proposed in the Master Plan is listed in the budget analysis section which follows along with a budget estimate in 1980 dollars. In some cases, the projects are broken down into smaller elements and the budgets for those improvements are also shown.

The improvements to be included in each of the projects have been selected primarily on the basis of location and adjacency. Smaller improvements are grouped around a major improvement to which they are functionally related. The major projects represent funding packages which may be pursued in unison although not necessarily from only one source of funds. Rather, many funding sources might be focused on different parts of one major project.

The total improvements budget for Forest Park is $26,544,795 in 1980 dollars. Adding contingencies and design fees (including miscellaneous expenses) to this total brings the budget to $33,579,167. Assuming a ten-year implementation period for this work and assuming a steady rate of progress, inflation at 10% per year for that period could be projected to raise the overall budget to approximately $49,163,260. For the purpose of more clearly understanding the types of projects to receive various amounts of funding, the budget has been divided into three categories:

1. Deferred maintenance. Remedial work on an existing park facility presently in dilapidated condition. ($6,475,909)

2. Improvements to existing facilities. An addition to or general improvement of a facility already in the park. ($17,679,008)

3. New construction. A facility added which is not presently a part of the park. ($9,424,250)

9.E BUDGET ANALYSIS

The substantial budget for the implementation of this Plan must be viewed as a complex relationship of funding sources and priorities.

The two budget charts which follow illustrate an approach to dividing and assigning the extensive budget which is needed to accomplish the Master Plan.

The budget is broken down into three major parts: deferred maintenance, improvements to existing facilities, and new construction projects. It further shows the line items noted in terms of both priorities and funding sources.

Priorities

A - Infrastructure improvements

B - Remedial work within the Core

C - Improvements within the Core

D - Remedial work outside the Core

E - Improvements outside the Core.

Funding Sources

P - Private

I - Institution

G - Government (other than City)

C - City of St. Louis

Following the budget is an implementation summary which illustrates relationships between priorities and funding sources.

FOREST PARK MASTER PLAN
BUDGET ESTIMATES INCLUDING PRIORITY AND RESPONSIBILITY ASSIGNMENTS

1. Deferred Maintenance		Priority	Funding Source **
LAKE RENOVATION			
Grand Basin Edges	$ 450,000	B	G/I
Fish Hatchery	250,000	D	G
Round Lake	150,000		
Jefferson Lake	200,000		
Bowl Lake	75,000		
River Des Peres	400,000		
Subtotal	1,525,000		
STREET RESURFACING*	813,555	B/D	G/C
WALKWAY RESURFACING*	256,650		
CURB REPLACEMENT*	796,050		
BRIDGE REPAIR & REPLACEMENT*	1,230,040	B/D	C/P
RENOVATION OF EXISTING FOUNTAINS*	60,000		
RENOVATION OF EXISTING BUILDINGS*	438,000	B/D	C
TOTAL DEFERRED MAINTENANCE:	5,119,295		
15% Contingency:	767,894		
	5,887,189		
10% Design Fees:	588,720		
1980 TOTAL:	$6,475,909		

2. Improvements to Existing Facilities			
LOOP ROAD			
Hampton Intersection Improvements	$ 900,000	A/B	G/C
Link between Valley Drive and Wells Drive (including the intersection with Government Drive)	350,000		
Art Museum West Link	250,000		
Wells to Union Link	470,000		
Miscellaneous Intersection Improvements and Minor Widenings	562,500		
Connector Link (Hampton to DeBaliviere)	180,000		
Minor Road Improvements	500,000		
	$3,212,000		

* Source: Department of Parks, Recreation and Forestry
** See text for key to priorities and funding sources.

		Priority	Funding Source
RECLAMATION AND ROAD REMOVAL			
Grand Drive	$ 495,000	B/D	G/C
Post-Dispatch Lake Vicinity	653,000		
Area North of Muny	742,000		
Carr Lake Drive and Vicinity of Jewel Box	603,000		
Government Drive	259,000		
Other Miscellaneous	296,000		
Subtotal	3,048,000		
PARKING AREAS			
Additions to:			
Art Museum Parking Lot	250,000	B	I
World's Fair Pavilion Parking Lot	300,000	B	C
Muny Parking Lot	350,000	B	I
Jefferson Memorial Parking Lot	250,000	B	I
Miscellaneous Off-Street Parking Lots	535,000	B/D	C
Renovation of Existing Parking Lots	600,000		
Subtotal	2,285,000		
PEDESTRIAN CIRCULATION			
Minor Pedestrian Trails	300,000	E	C
LAKE IMPROVEMENTS			
Post-Dispatch Lake Enlargement	1,200,000	C	G/C
ACTIVE RECREATION			
Bike Trail Improvements	350,000	E	G
Golf Course Improvements			
Parking	80,000	A/E	C
Additional Golf Holes, etc.	400,000		
Subtotal	830,000		
PASSIVE RECREATION			
Art Museum Plaza with Fountains	1,100,000	C	I
Muny Opera Plaza with Fountains	750,000		
Improvements to Unstructured Recreation Areas	500,000	D	C
Renovation and Parking around Victorian Residence	250,000		
Subtotal	2,600,000		
SIGN AND INFORMATION SYSTEM	500,000	A	C
TOTAL IMPROVEMENTS TO EXISTING FACILITIES:	13,975,500		
15% Contingency	2,096,325		
	16,071,825		
10% Design Fees	1,607,183		
1980 TOTAL	$17,679,008		

			Priority	Funding Source
3. New Construction				
PEDESTRIAN CIRCULATION				
Major Pedestrian Loop		$ 600,000	E	C/P
Core Area Pedestrian System		900,000	C	C/P
Barnes Hospital Underpass		500,000	E	G/P
Pedestrian Bridge over U.S. 40		450,000	E	P
	Subtotal	2,450,000		
LAKE IMPROVEMENTS				
Kennedy Forest Ponds		250,000	C	G
Geyser Jet for Grand Basin		50,000	C	P
	Subtotal	300,000		
ACTIVE RECREATION				
Playground		900,000	C	P
Jogging Trail and Exercise Courses		200,000	E	P
New Golf Clubhouse		250,000	E	C
	Subtotal	1,350,000		
PASSIVE RECREATION				
Art Hill Promenade		850,000	C	I
Grand Basin Promenade		500,000	C	P
North Shore Park		900,000	C	P
Mall and Government Hill		750,000	C	C/P
Steinberg Promenade		350,000	C	C/P
	Subtotal	3,350,000		
TOTAL NEW CONSTRUCTION:		7,450,000		
15% Contingency		1,117,500		
		8,567,500		
10% Design Fees		856,750		
1980 TOTAL		$ 9,424,250		
TOTAL FOR ENTIRE PROGRAM:		$33,579,167		

BUDGET IMPLEMENTATION SUMMARY

	FUNDING SOURCES				
PRIORITIES	Private	Institutions	Government	City of St. Louis	Total
A	$ --	$ --	$ 803,000	$ 1,543,000	$ 2,346,000
B	423,260	1,075,000	2,256,563.75	3,339,823.75	7,094,647.50
C	3,175,000	2,700,000	850,000	1,425,000	8,150,000
D	423,260	--	2,303,563.75	2,986,823.75	5,713,647.50
E	1,375,000	--	600,000	1,265,000	3,240,000
	$5,396,520	$3,775,000.	$ 6,813,127.50	$10,559,647.50	$26,544,295
					3,981,644 15% Continge
				Subtotal	$30,525,939
					3,052,594 10% Design F
				Grand Total	$33,578,533

The City may have very limited resources which can, in the near future, be allocated to improvements in the park. If it is assumed that $100,000 per year is available directly from the City for the first five years, a difficult situation must be faced. The half million dollar total will not be enough to create a meaningful public works improvement program.

This limited amount of funds can better be used for two other purposes. First, it can be used to obtain additional funds from outside City government for investment in the park. Second, it can be used to make a few minor public but strategic improvements which only the City can make.

Obtaining Additional Funds

The success of the search for additional funds is largely dependent upon finding the right person to fill the role of "Director of Development" for Forest Park. This person will need access to support services and will require a budget for design, printing, supplies and travel. A yearly budget for the operation would include:

Director's salary	$30,000
Secretary	10,000
Travel	4,000
Design, printing, marking	6,000
Supplies, miscellaneous	4,000
	$54,000

The goal for this fund raising activity should be to produce hard commitments of private dollars and institutional participation of $10,000,000 of previously uncommitted funds within three years. If this activity is successful, it will be one of the best investments the City can make by using approximately half of its $100,000 per year direct funding.

Making Direct Improvements

The remaining $50,000 per year is certainly not enough to create any substantial public works in the park. It can, however, provide the City's share for the construction of parts of major facilities such as the Loop Road. It can do this only if other City operating agencies can also leverage their funds so that money for road improvements from the federal government and other sources can be utilized. The money can be used directly to make minor public improvements in support of private funding efforts. An example of this would be the clean-up of the small lake around the recently renovated Nathan Frank Bandstand.

Phasing Into the Future

A low level of direct City funding cannot continue much beyond the five years discussed above. Should this happen, the private and institutional sectors will witness their investments in the park standing alone and unmatched by public support. At a minimum, the City should upgrade the standards of maintenance and repair so that private and institutional sources are assured of the security of their investments. Then, when public interest warrants the expenditure of more City funds in the park, the City can begin a more active funding role within the realm of major public works expenditures.