

# ARCHITECTURE AT RICE NUMBER 16

ARCHITECTURE AT RICE UNIVERSITY designates a series of reports on thoughts and investigations from the Department of Architecture of Rice University. It is published in the belief that architectural education can best be advanced if the teachers, practitioners, students, and interested laymen share in what they are thinking and doing.

HOUSTON, TEXAS AUGUST 1965



# LAKE HOUSTON DEVELOPMENT STUDIES

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# PREFACE

The urgent need for recreational facilities in the Houston region demands an exhaustive study of the role of recreation and open space in the city's future. This report was prepared by third-year architectural students at Rice University to document this need and bring forth recommendations for its fulfillment. The cooperation and help of the Houston Junior Chamber of Commerce and the underwriting of the expenses of this study by the McAshan Foundation of Houston are gratefully acknowledged.

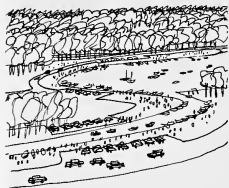
Research into the existing recreational facilities and needs of the Houston region has revealed the positive advantage of including Lake Houston within a regional recreational framework. The position of the lake in the urban pattern of Houston points up its value as a recreational asset IF immediate action can be taken to prevent destruction of its value by uncontrolled lakeside development. To this end, a concentrated study was made and recommendations set forth concerning the implications of Lake Houston in the metropolis and its region.



**THE  
MEASURE  
OF  
THE  
PROBLEM**



BY 1975 THE POPULATION SHOULD DOUBLE, THE DEMAND FOR RECREATIONAL FACILITIES SHOULD TRIPLE



DUE TO ITS TREMENDOUS GROWTH RATE, HOUSTON TENDS TO OVERLOOK, AND THUS NOT PROVIDE FOR, THE FUTURE.

The demand for open space for recreation is growing. Whatever the yardstick — visits to local and regional recreation areas, number of cars engaged in pleasure drives, number of outboard motors in use — it is clear that Houstonians are seeking the outdoors as never before. Increases in population, disposable income and leisure and travel time will lead to maximum total recreation demand. By 1975 the population should double and the demand for recreation should triple.

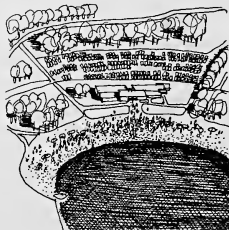
To pinpoint factors influencing recreational demands is to consider income, education, occupation, residence, age, sex, and leisure. (See appendix for supporting data.) Probably the most significant single factor for Houston is its amazing growth rate. Metropolitan Houston has doubled in population each of the past three decades, and the current one and three-quarters million figure is expected to reach the ten million mark by the year 2000. Due to this tremendous growth rate, Houston has become absorbed in the present and tends to overlook, and thus not provide for, the future.

Recreation is important in our lives today. In ten years it is expected that the three-day week end will be standard

for much of the work force, that there will be perhaps ten paid holidays, and that there will be an additional week of vacation. With population doubling by 1975 and individual leisure time increasing by 50 per cent, recreation will be more than a sometime pursuit. Leisure, once a blessing, could be the curse of a progressive, successful community. Certainly a substantial adjustment in perspective will be required to cope with the fact that entertainment of one's self is or will be so basic a requirement as having to support one's self with work.

The greatest demand in public recreation will be for water-oriented facilities. Water is a magnet: it acts as a focal point for active participation (swimming, boating, water-skiing) and passive enjoyment (picnicking, walking, and pleasure driving). Presently in the U.S. 44 per cent of the people prefer active, water-based recreation. Houston's climate pushes this figure closer to 60 to 70 per cent. In addition, the fact that many people who generally participate in land-based recreation prefer to do so near water assures that the pressure on existing water facilities will be overwhelming. Lake Houston is a storehouse of recreational possibilities.

THE GREATEST DEMAND IN PUBLIC RECREATION WILL BE FOR WATER-ORIENTED FACILITIES



## DEMAND

# 45 MINUTE DRIVING ZONE FROM THE CENTRAL BUSINESS DISTRICT



■ Water

▨ 45 Minute Access Zone

1 / Loke Houston

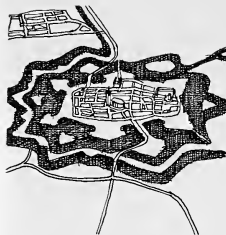
2 / Addicks-Barker Reservoirs

3 / Memorial Park

4 / Domed Stadium

5 / Galveston

6 / San Jacinto State Park



Other than the obvious need of open space for recreational purposes, space must be supplied for:

1. Conservation of natural resources
2. Imparting form to urban areas
3. Intrinsic value

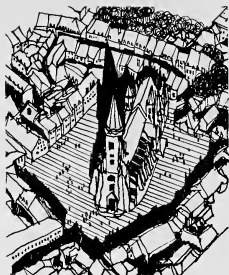
4. Protecting city dwellers from noise and other nuisances
5. Maintaining agriculture near the market served
6. Reserves for unpredictable needs of the future

## SUPPLY

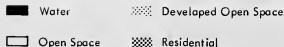
The present supply of facilities indirectly oriented to water is no better than that for active water sports. Driving for pleasure is the most frequent activity, but aside from driving on the beaches along the Gulf which must soon be outlawed as a hazard, there are no scenic drives where water is complemented by natural surroundings for any appreciable distance. The same is true of places to walk or cycle — where there is room to exercise, the aesthetic appeal is limited. Picnicking which can be combined with other activity is curtailed by the same minimal facilities. There are only 300 picnic tables near water in this region. By 1975 it is predicted that approximately 70,000 people will want to picnic at the same time on any given day of the week end. The majority of these people will prefer to picnic

near the water's edge if the facilities are available.

Dual usage of the open space supply is desirable and adds impetus to the argument for its preservation. For example, open spaces used as recreational resources might also serve as reserve land, form buffers to urban development, coincide with highway or utility right-of-ways to some extent, and the space would certainly have intrinsic or aesthetic value. This intrinsic value is often overlooked or shelved but it is nevertheless of paramount importance in the urban pattern. S. B. Zisman, the author of *OPEN SPACES IN URBAN GROWTH*, says that building is man-made and can be man-changed, but open space by nature cannot be replaced.



## EXISTING LAND USAGE / LAKE HOUSTON



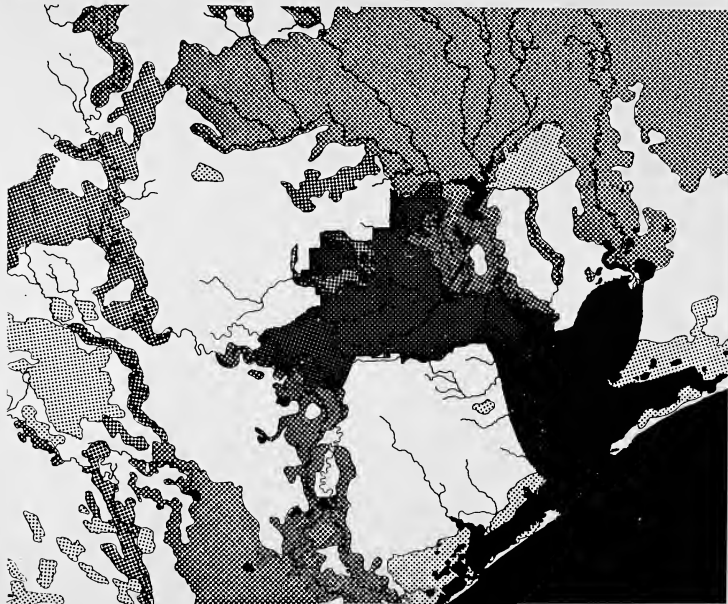
In this region much open space is now potentially available in the large natural reserves, watershed areas, agricultural lands, marshlands, shorelines, and scenic coasts. Its character has great variety: forest, prairie, marsh, and shore. However, the most striking aspect of this supply is one of paradox. This apparent abundance fails to provide an adequate supply of opportunities for the public. Virtually all this open space is of little use to Houstonians looking for a place in the sun for their families on a week end when the demand is greatest. A quick trip to Hermann, Memorial or Deussen parks or to the Gulf will verify this situation. Few places are near enough to the metropolitan center for a Sunday outing. At local and regional levels, most of the land is where the people are not. The problem is not one of number of acres but of total effectiveness.

The opportunities for development at Lake Houston are virtually unlimited because of the large quantities of as yet undeveloped land, although much of this land is in small, privately-held parcels. The absence of adequate access has retarded development, but if and when sufficient access is provided to the lake and surrounding areas, large quantities of prime open space will be thrown up for use. This land will be of both recreational and aesthetic importance since it will border the only major body of fresh water in the metropolitan area.



**FEW PLACES ARE NEAR ENOUGH TO THE METROPOLITAN CENTER FOR A SUNDAY OUTING**

**THE OPPORTUNITIES FOR DEVELOPMENT ARE UNLIMITED BECAUSE LARGE TRACTS OF UNDEVELOPED LAND EXIST AT LAKE HOUSTON**





RECREATION IS BIG BUSINESS\$

The public legally can and should take a hand in molding the character of its living space to preserve beauty, provide for recreation, and limit population density of this area. Urban life will become intolerable unless citizens realize in time the stake they have in parks and open spaces. Lake Houston is an important facet and should not be neglected in any account. It must be included and carefully considered in Houston's regional policy toward land use. It is too valuable a resource to lose.

Provision of open space for recreation produces valuable economic benefits in addition to social advantages. Open space enhances community desirability by creating a better place to live. The effect of parks on adjoining land values is one example. City after city cites such experience. Minneapolis, noted for its fine park system, says that the increased values in the city due to park developments have amounted to several times the cost of the entire system. Essex County, New Jersey, found that the land adjacent to parks increased in value three times as fast as other property. Houston's Hermann Park is a local example of the ability of planned open space to stabilize, even upgrade, the surrounding land values and development.

Recreation is big business. Aside from a small fraction from fees for license

and privilege certification, the bulk of recreation expenditures goes for food, lodging, transportation, boats, and other equipment. The great importance of location is clear for retailers who seek to obtain a share of the enroute and the at-or-near-recreation-area expenditures. This fact also helps explain the shift in real estate values along major access routes and in the neighborhoods of newly established recreation areas. Provisions for open space and recreation stimulate community-wide industrial as well as business growth.

It is thus of obvious benefit to take the positive view. Don't ask, "Is it too expensive?" but affirm, "We cannot afford not to do it."

## NEED

Urbanization is a fact. Open space is a need. Reconciling one with the other is a job.

It is no longer feasible and it is never desirable to allow urbanization to blanket the land indiscriminately. Planning is not a luxury but a necessity. Assuming that open space won't be "afforded" in developed areas, what can be done to reserve space in areas not yet developed? Can future growth be shaped so that recreation is an integral part of the plan?



PLANNED OPEN SPACE MAY UPGRADE SURROUNDING LAND VALUES AND DEVELOPMENT

PLANNING IS NOT A LUXURY BUT A NECESSITY



■ Water  
 □ Land



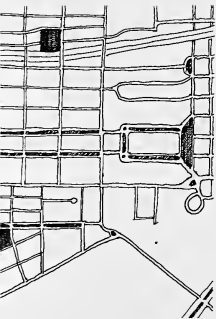
Recreation is revitalization. The most important recreation of all is the kind people find in their everyday life. Is it available now? Can children walk or cycle to school safely over scenic paths — or must they be taken by vehicle? Are there streams for an afternoon of fishing — or is the water buried in concrete culverts? Are the stands of woods gone — or are a few left in areas for picnics or strolls?

Houston needs an environment for pleasurable living. This requires a fresh approach because the bulk of land in the metropolitan area is privately owned and will remain so. Wholesale public acquisition of land cannot meet the need. The use of this land is the heart of the problem. Needed with the acquisition is imaginative use of a range of activities: a vigorous drive to tie recreation to other land use programs and a judicious use of existing facilities in an overall system.

The focal point of such an environment for Houston should be water because the gulf, rivers, bayous, bays, and lakes could be melded into an open space and recreational system of great value to the area residents. Most existing bodies of water in the region have adjacent open space, and much of it is desirable for recreational use.

**WHAT HOUSTON REALLY REQUIRES IS AN ENVIRONMENT FOR PLEASURABLE LIVING**

**THE FOCAL POINT OF HOUSTON'S RECREATIONAL ENVIRONMENT SHOULD BE WATER**



This water-oriented open area coupled with existing facilities and open space patterns could generate a recreational environment for Houston and the region. A variety of means could incorporate this into Houston's environment:

1. Small neighborhood parks and playgrounds plotted in regular, patterned approaches similar to those in the Southhampton and Southgate districts.
2. Natural drainage channels as a functional open space as demonstrated by existing parkway systems along Buffalo and Brays boulevards (and enrichment is needed along these).
3. Wet lands and floodplains reserved to prevent undesirable development thus preserving the scenic and wild-life resources as done behind Addicks and Barker flood control dams.
4. Appropriate areas for regional parks acquired similar to that at Huntsville.
5. Open space easements to preserve rural scenery and prevent subdivision into unsuitable areas.
6. Residential parkway roads along drainage channels to border open areas such as lakes, marshes and school grounds similar to Memorial Drive, Chimney Rock Road and the drives encircling Clear Lake.

7. Hunting, fishing and hiking easements purchased to provide recreational use of private lands.

Lake Houston is the only appreciable body of fresh water available for recreation and it fits beautifully into the envisioned system. The lake offers the large areas suitable for a first-quality regional park.

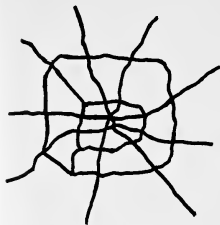
The existing 300-acre park at the dam, which has proved to be both very popular and vastly inadequate, could be used to generate such a park. The natural drainage channels feeding the lake could provide open space for intensive recreational use and easements for aesthetic purposes. The completed portions of Lake Parkway could be extended to form a drive encircling the lake and to connect it to the open space system.

The magnetic appeal of water for urban expansion makes rapid growth at Lake Houston a threat to available resources. The threat of encroachment by private enterprise for personal and financial gain for the few will destroy the potential for the many citizens deserving and paying for public recreational areas. Maximum development of the lake's potential as an asset for this region is eminently necessary — and even so, it will only partially meet the recreational needs of the area residents by the year 2000.

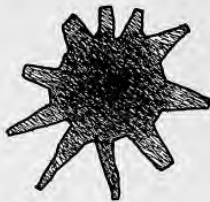


**LAKE HOUSTON IS THE ONLY APPRECIABLE BODY OF FRESH WATER IN THE REGION AVAILABLE FOR RECREATION**

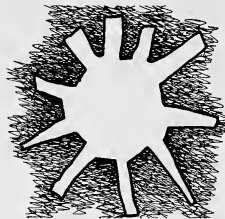




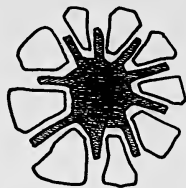
CIRCULATION PATTERNS



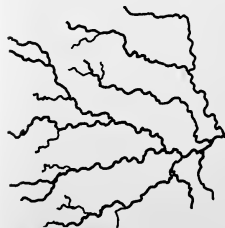
PLUS URBANIZED AREA



PLUS OPEN SPACE



YIELD URBAN PATTERN



NATURAL WATERWAYS



PLUS LINEAR PARKWAYS



PLUS EXISTING GREENSPACE



YIELD OPEN SPACE PATTERN

# OPEN SPACE SYSTEM / METROHOUSTON



■ Water

□ Open Space

▨ Urbanized

1 / Galveston

2 / Clear Lake

3 / San Jacinto State Park

4 / Lake Houston

5 / Jetera Airport

6 / Addicks Recreational Area

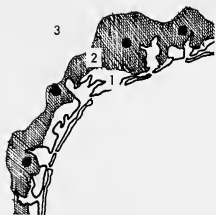
7 / Barker Recreational Area

8 / Memorial Park

9 / Domed Stadium

# SOLUTIONS

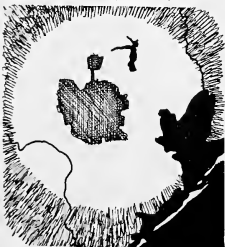
As an answer to needs brought forth by research studies, three schemes utilizing the regional recreational assets of Lake Houston were developed. In the course of planning development at the lake, certain common features evolved in all three schemes. Several points seemed particularly pertinent to orientation of final plans and these points can serve as an introduction to the discussion of the solutions and the features unique to each.



A closer examination of the solutions explains the logic of the three following proposals and points out additional considerations of the individual teams concerning other land use types.

The Gulf shapes the regional urban development along the Texas coast. Existing land use patterns are beginning to form as a series of belts parallel to the coastline: (1) a narrow cordon of water-oriented beaches and marshlands; (2) a 60-mile-wide area of potential urban and industrial concentration; and beyond, (3) virtually unlimited open space. Development will eventually culminate in a Gulf Coast megacity similar to the Atlantic-oriented Boston-Washington system. In this context, open space, especially in the Gulf urban belt, will assume a new role of much greater importance than it does now as a relief to the urban and industrial concentrations.

OPEN SPACE IS VERY IMPORTANT AS A RELIEF TO URBAN AND INDUSTRIAL CONCENTRATION



METROPOLITAN HOUSTON IS ONE OF A SERIES OF GULF-ORIENTED URBAN CELLS

The watershed for the entire state creates a drainage network which serves as a system of boundaries perpendicular to the coastal belts, thus separating each belt into a series of cells. Metropolitan Houston is one such cell: it is bordered by the Brazos River on the west and the Trinity-San Jacinto river systems on the east. These inland waterways flanking the city separate it from other coastal urban cells and provide open space relief from the urban continuum.

Open space in this way functions as a form-giver to urban development.

The location of Lake Houston on the San Jacinto corridor reinforces the lake's regional implications, doubles its recreational value by virtue of its juxtaposition to Metropolitan Houston, and suggests its value as relief to urban concentration.

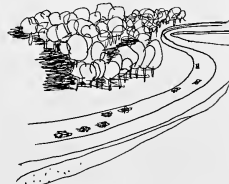
Another aspect is the lake's magnetic pull to bring urban development to its shore. Because of the existing trend of the city patterns, each scheme foresees envelopment of either or both the east and west shores by the urban fabric. Provisions must be made so commercial, institutional, residential and industrial development will be of quality to enhance the shore areas and allow recreational facilities to maximize the possibilities of the lake.

Rescue of shore areas for a virgin wilderness preserve at the upper end of the lake emerged as another common goal of each scheme.

Each solution answered the access problem by envisioning a system of parkways bearing a distinct relationship to the water. These parkways would connect with existing and proposed high-speed routes to provide maximum access to the lake from all directions.



LAKE HOUSTON'S LOCATION ON THE SAN JACINTO CORRIDOR DOUBLES ITS RECREATIONAL VALUE



SOLUTIONS MUST RECOGNIZE THE ACCESS PROBLEM

## SCHEME M




Research on Houston's rate of population increase and urban boundary expansion for the next 35 years reveals varying demands. The character of the parks at Lake Houston will undergo complete change as the lake is circumscribed by the reaches of the city. Improved access and increased leisure time will place the park resorts (now popular only for week end trips) in daily use by 1985. The aesthetic value of these resorts as relief from the townscape will be of utmost importance by the year 2000 when they will have become open space islands submerged in urbanism. A similar urban expansion of coastal cities from Beaumont to Corpus Christi will create a continuous urban belt facing the Gulf. This frontage will be backed by another belt comprised of the existing agricultural areas and the forested, undeveloped space.

A connecting tracery of open space corridors from the forests to the Gulf is desirable to define the cells of the urban belt. Other than this definition for visual relief, scenic parkways and other facets of the connecting tracery could be utilized for further advantages: (1) recreational links between beaches and natural forests, and (2) increased access and therefore increased activity in the Lake Houston area.



EXPANSION OF COASTAL CITIES  
WILL CREATE A CONTINUOUS  
URBAN BELT FACING THE GULF

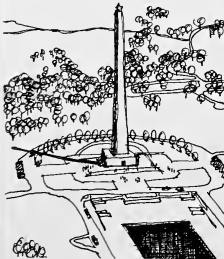


-  Water
-  Open Space Reserves\*
-  Urbanized



\*National Forests Outlined in Dotted Pattern

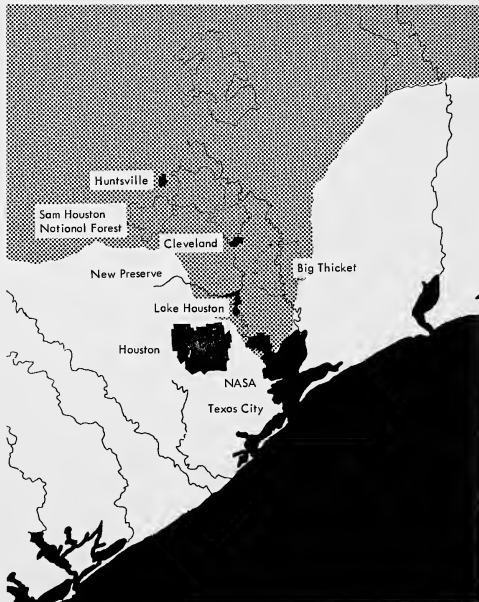
THE SCENIC PARKWAYS ALONG RIVERS DEFINE CITY CELLS AND PROVIDE RECREATIONAL LINKS BETWEEN BEACH AND FOREST



The tracery of parkways would follow along the river dividers and afford an opportunity to visit historic monuments, scientific and industrial centers and scenic natural landmarks while on a pleasure drive from Galveston to Huntsville. This is an exciting prospect for tourists and residents, and the realization that tourists along such a route would visit Lake Houston is equally exciting to developers.

Another advantage of incorporating Lake Houston into the Houston recreational-access tracery is the establishment of a parkway along the lake's eastern shore which would favorably influence growth in northeast Houston. Increased access on the eastern lake shore would relieve building pressure on the inaccessible western side. Such relief would give city planners time to organize and encourage orderly and high quality patterns on the western shore in keeping with the standards set by the parkway on the eastern shore.

Scheme M points out the significance of the location and character of major highway intersections on the western shore in relation to lakeside activity inland beyond the intersections. These crossroads would be gateways to the less accessible western shore and would exert a governing stimulus on the character of the lakeside developments.



Water



Open Space Reserves\*

\*National Forests Outlined in Dotted Pattern



SCHEME M EMPHASIZES THE SIGNIFICANCE OF ENTRANCES TO THE LAKE AREA AND THEIR EFFECT UPON DEVELOPMENT



Controlling the gateways with conscientious, organized development would thus control the shore. Consider by comparison the psychological and physical hardships of entering any area through a poorly developed gateway. An unsuccessful first impression carries over into the use of any facilities and resources, thereby amplifying the impact of the entrance. To enter the lake area through a new commercial center at the junction of Humble and Atascocita Roads is to become involved in the nature of activity present along this portion of the lake. To enter the park gates and sports-oriented shopping area at the southern end of Deussen Park is to experience the type and pace of the recreational center linked to this particular area.

The first stage for Scheme M calls for construction of the scenic parkway from Galveston to the northern Texas forests via the eastern shore of Lake Houston. This highway would serve east-side traffic and have four offshoot parkways connecting with public lakeside areas. These areas are among the most scenic spots at Lake Houston and can be used simply as parks until it is feasible to convert them to more active recreational areas. Stress

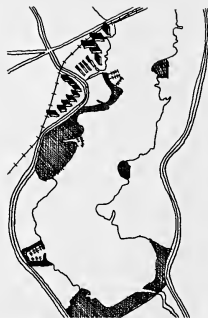
cannot be too strong for immediate purchase of these areas from their private owners in order to overcome the continually mounting purchase competition for these sites.

Second stage growth would realize high density centers of active-use recreation on the western shore. The locations for swimming, sailing, skiing, and amusement facilities would be links in the active parks chain generating from Deussen Park and the recreational gateway.

The third stage of park programming provides for a large wildlife preserve area north of the lake. It would complete the total program of recreational types for the lake.

It is again advisable to stress immediate purchase of land around the lake because of the private competition for its purchase.

Execution of a park program is important for the fulfillment of the Houston area recreational needs of today, and it will be essential for the needs of the year 2000 when the demands will mirror the growth and urban status of Houston anticipated for that year.



EXECUTION OF A PARKS PROGRAM AT THE LAKE IS IMPORTANT TODAY AND WILL BE ESSENTIAL BY 2000

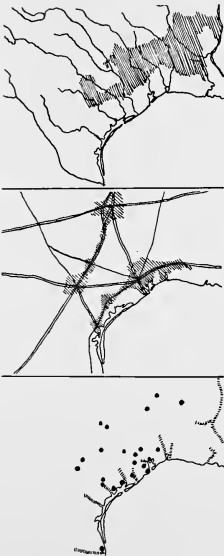
SCHEME M / LAKE HOUSTON DEVELOPMENT PLAN



- |   |   |
|---|---|
|  Water               |  Residential |
|  Open Space Reserves |  Commercial  |



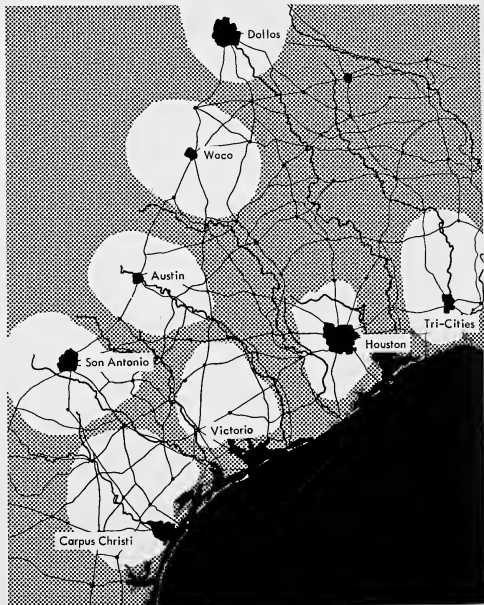




The importance of Lake Houston to the metropolitan Houston area is not to be discounted, but the primary concern of Scheme N is the relationship of the lake to a regional recreational framework.

Elements influential to recreation and open space on the Gulf Coast were analyzed individually and collectively to approach a workable system. Elements of special importance in the overall regional scheme were mapped separately as (a) rivers, (b) forests, (c) urban area, (d) land transportation patterns, (e) navigable waterways, and (f) existing state parks and centers of interest.

Synthesis of these element maps leads to a cellular pattern not unlike that expressed in Scheme M. Rivers and forests are significant in terms of cell boundaries; urban centers are usually nuclei for cells; transportation patterns form radial networks across cell boundaries. Most cells have some existing state parks and centers of interest which aid in establishing a recreational system. It is important to note that cells exist mainly as spheres of influence about the urban nucleus regardless of geographical or transportation patterns. Houston is one such cell, an urban nucleus with a sphere of influence.



# SCHEME N






- Water
- Open Space Reserves
- Major Urban Cells

## SCHEME N / HOUSTON CELL AND TEXAS TRAIL PARKWAY



- 1 / Galveston
- 2 / NASA
- 3 / San Jacinto State Park
- 4 / Lake Houston
- 5 / Huntsville State Park
- 6 / Washington-on-the-Brazos
- 7 / San Felipe
- 8 / Varner-Hagg State Park
- 9 / Freeport

-  Water
-  Open Space Reserves
-  Urban Cells

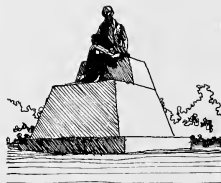


Houston has definite geographical boundaries but its radial transportation network of highways, railroads, and navigable waterways crosses them on the west, north and northeast. The Gulf of Mexico and Galveston Bay are immutable on the south and southeast but the Brazos and Trinity-San Jacinto river systems on the west and east define the cell clearly even though the northern boundary marked by extensive forests is less distinct. Several historic and scenic points lie within the cell and recreational opportunities are present in the vicinity. The elements outline a logical summation in a state-region-city system of diversified amusements.

A 300-mile parkway, The Texas Trail, is proposed to encircle the perimeter of the cell. It connects many historic and scenic points of interest and provides access to recreational resources. The parkway route is distinctly recreational and oriented to the popular pastime of driving for pleasure as opposed to the commercial nature of the radial land transportation system which serves as access for the tourists.

Lake Houston derives its regional importance from its location at the mid point of the eastern leg of the Texas Trail and its metropolitan significance from the lake's position in relation to Houston as a part of the boundary of the Houston urban cell.

HOUSTON ACTS AS NUCLEUS FOR A CELL



THE LOGICAL SUM OF ELEMENTS IS A CELLULAR RECREATIONAL SYSTEM CENTERING ON HOUSTON AND PROVIDING DIVERSIFIED AMUSEMENT OPPORTUNITIES

DUAL ROLE INVOLVES BOTH  
REGION AND CITY — EACH HELPS  
DETERMINE CHARACTER OF LAKE  
DEVELOPMENT



TRIPARTITE/TRIANGULAR DEVELOP-  
MENT IS EXPECTED BECAUSE OF  
LAKE'S RELATIONSHIP TO CITY  
AND CELL



The lake's dual role for region and city as the most extensive body of fresh water in the cell with the most attractive recreational advantages will determine the character of development of the lakeshore. This development is expected to take a tripartite character because of the forces and shapes joining it to cell and city.

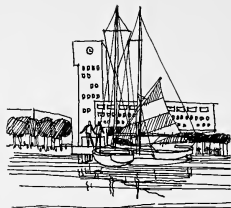
The western shore will absorb urban expansion — the concentration of development will probably increase as the distance to the lakeshore decreases. A series of high density, high-rise housing interspersed with parks and intensive commercial establishments is envisioned on the shoreline. Direct public access to the water will be held back in favor of private development although the expansion of the existing public park at the dam is contemplated. Additional access at such prominent points as the terminus of the McKay Bridge will be a part of the traffic system.

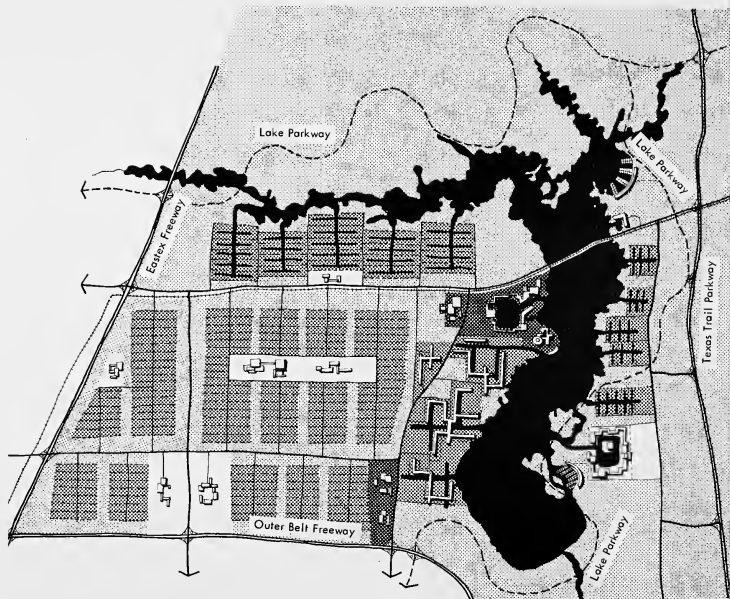
In contrast, the eastern and northern shore will be practically unhindered to public ingress and egress. The Texas Trail will parallel the eastern shore at a distance of about one to two miles. An inner loop will connect it with the Lake Houston parkway and other access routes. This loop will follow the shoreline closely to provide public access to the water-oriented recreational facilities. Land lying between this loop and the parkways will be reserved principally

for scenic purposes although limited low-density housing and institutional facilities will be permitted. The proposed canal system will link the areas inland from the lake to the shoreline.

The northern reaches of the lake will assume a third distinct character, that of a wilderness preserve similar to a national forest. This will insure breathing space in the future for the Houston cell and will maintain the virgin scenic shore of at least a portion of the lake for the longest possible length of time. Such an area could continue to serve as a paradise for sportsmen and outdoor-minded Houstonians.

All three aspects of lake development will assure steps to secure scenic and historic advantages along the entire Texas Trail. The scheme as presented would attract statewide attention and provide easy access to the parkway at points of its intersection with the radial transportation routes of the cell. The lake would serve as a barrier to urban development in northeast Houston and as a city-wide recreational attraction with ample facilities for all types of amusements ranging from scenic relief within the urban nucleus, to preservation of wildlife resources, to passive and active sports. This in turn would stress the regional, state and city recreational value of the lake and increase the sphere of influence of metropolitan Houston.





- |   |                     |   |             |
|---|---------------------|---|-------------|
|  | Water               |  | Residential |
|  | Open Space Reserves |  | Commercial  |



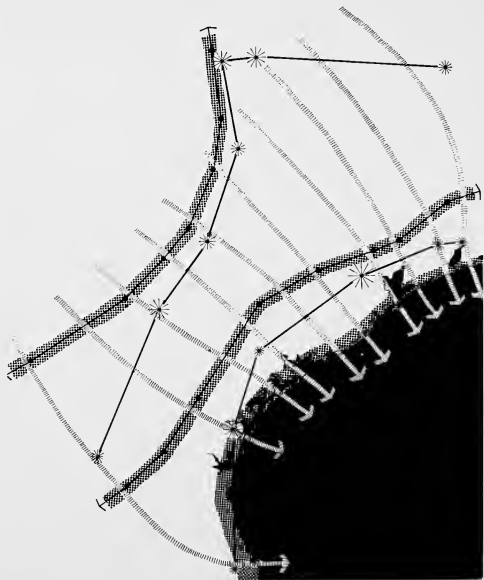
SCHEME O FORECASTS A LINEAR SYSTEM FOR THE GULF COAST

The involvement of Scheme O in forecasting a linear system of development for the entire Gulf Coast led to the establishment of important criteria for planning at Lake Houston. The long-range interpretations of the coastal, urban, and forest belts accent prominent links or junctures in the coastal scene. The nature of these junctures superimposes the commercial versus the recreational traffic patterns upon the concentric belts of the use areas and thereby suggests conclusions as to the significance of Lake Houston in each of its roles.

A TWO-WAY LINKAGE SYSTEM OF HIGHWAYS STRUCTURES THE COASTAL REGION



The urban nodes, their connecting paths, and the recreational boundaries formed by the beaches and forests form a pattern of concentric circles following the contour of the coastline. A two-way linkage system of highways is used to structure the coastal region: commercial routes run east and west between the city hubs and the scenic parkways run fundamentally north and south through the forested and coastal bands. As in the other schemes, the north-south linkages follow the pattern established by the rivers. Regional significance of Lake Houston is a result of its position at one of the major junctures of the coastal grid.



SCHEME O



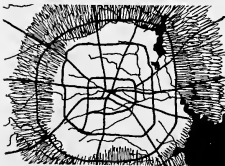
- Water
- Open Space
- Greenbelt Linkages
- Waterway Linkages
- Scenic Points of Interest
- \* Urban Centers



LAKE HOUSTON IS ONE OF THE FORM-GIVERS TO THE METROPOLIS



THE LAKE SERVES AS AN EDGE FOR URBAN GROWTH ALONG WITH THE "OUTER-OUTER" BELT



The metropolitan role of Lake Houston places the lake in context with Addicks and Barker reservoirs, the undeveloped marshlands south of Houston, the eastern industrial quadrant and the wilderness preserve which is proposed for the area north of the city. Lake Houston is thus situated as one of the major factors imparting form to Houston's urban pattern. The intention of maintaining the above areas as open space barriers is two fold;

1. To transfer residential or "soft" growth patterns along the South-west and Gulf freeways and to Lake Houston.
2. To provide a boundary in all other directions to curtail urbanization in areas with recreational potential.

Hard or industrial growth patterns would continue to be channeled toward Beaumont and Richmond.

The regional implication of the lake's role lies in the coastal traffic pattern. The compound nature of the influential factors acting on Lake Houston development leads to a compound character of the development standards. Lake Houston holds potential as an urban generator because of its (a) location in a juncture area for the regional linkage system and (b) because of its inherent appeal as a freshwater lake. As such, the lake serves as an edge for urban growth where the "outer-outer" belt dead ends at the natural containment of the lake itself.

Scheme O responds to both these sets of factors with a high-density develop-

ment scheme for the western shore. Such growth would be typified in high-rise housing units, hotels to cater to the new demands to be made by Jetero, amusement parks, commercial centers, and a railroad terminal at the proposed joint crossing of rail and auto bridges. A parkway along the western shore would separate this development physically but not visually from the edge of the water and would create a continuous linear park in the area adjacent to the lake.

The nature of the high concentration on the western shore provides a strong contrast with the limited development type on the eastern shore and by contrast reinforces the existence of an edge to the city.

The creation of a wilderness preserve area above the northern river sources of the lake would join the low density eastern development and the western parkway easements to surround the water with a forest belt with visual variety and a diversity of natural and commercial focal points.

Scheme O differs from Scheme M and N especially in the accent on a highly developed western side in the initial development. The grid traffic system places the recreational system in a lineal format in closer contact with the cross sectional commercial traffic patterns. By being in the coastal grid, this scheme allows greater flexibility in step by step implementation of the overall scheme for a regional and city recreational program.



A HIGHLY DEVELOPED WESTERN LAKESHORE REINFORCES THE NORTHEASTERN EDGE OF METROPOLITAN INFLUENCE.



SCHEME O / PLAN OF HOUSTON OPEN SPACE LINKAGE SYSTEM

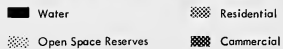
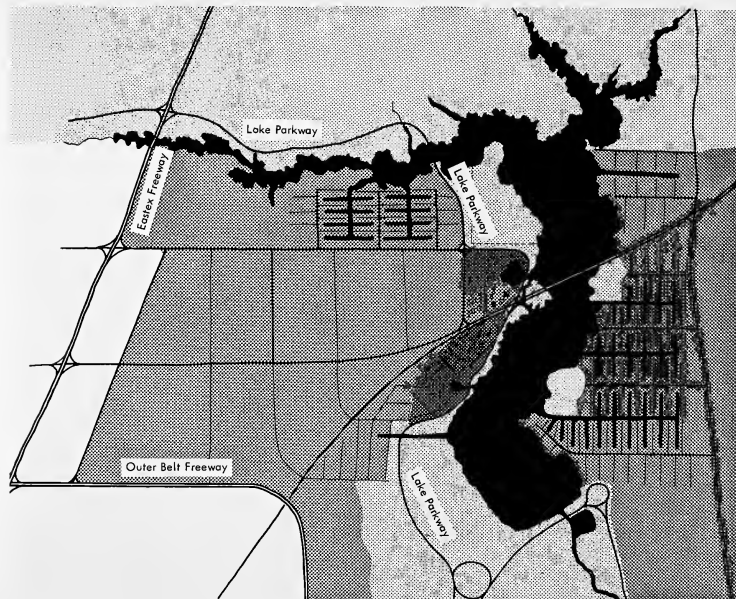


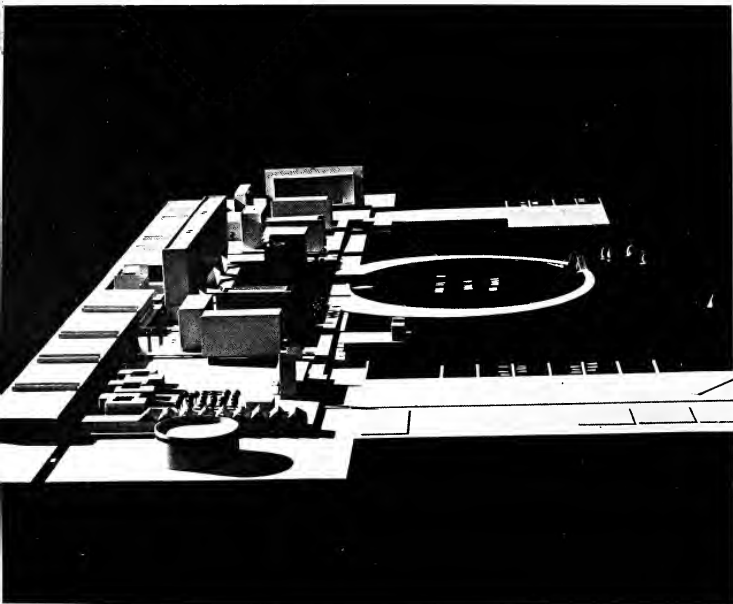
■ Water

||||| Greenbelt Linkages



# SCHEME 0 / LAKE HOUSTON DEVELOPMENT





# CONCLUSIONS

Cities grow in their particular patterns as the result of planning decisions made by both public and private agencies of diverse types. These decisions are determined by a variety of factors—legal, political, financial, and personal — as well as by public and private prejudices.

The public, as a group and as private citizens, influences city planning more than appearances reveal and may make its influence sharply felt when interest is high or the situation is particularly endearing. Public decision-making is determined by widely varying types of institutions, agencies, and individuals.

The decisions made by public officials, as well as those made by the individual voter, are based on market facts or lack of such, professional standards, value judgments (often of a political nature), and by precedence. However, salesmanship has most appeal to a consumer-oriented public. People expect to be sold and consequently must be sold on any issue, the most trivial often requiring more sales effort.

Perhaps more sales effort is what is called for to acquaint the public with recreational needs in the Houston region and in securing the desired action to achieve certain goals deemed necessary.

A clear, concise plan is compulsory to public salesmanship. Understanding is of the utmost importance. The molding of growth to achieve beneficial patterns is dependent on the availability of data to the decision-maker. Since a master plan is, according to Charles M. Haar, (1) a source of information, (2) a program of correction, (3) an estimate of the future, (4) an indicator of goals, (5) a technique for coordination, and (6) a device for stimulating public interest and responsibility, metropolitan-area data services and a metropolitan master plan could aid in implementing a suitable recreational program by influencing the public decision processes.

If certain local governing bodies and public-spirited private groups take the correct initiative in planning a course of action toward the goal of a total recreational environment for Houston, public response and support may be aroused.

Another point is that other standards for public recreation may be misleading. A public recreational system rated excellent for Baltimore, St. Louis, or Atlanta, for example, could not receive the same praise if implemented in Houston because Houston's needs and demands differ considerably.

Houston's needs and demands must receive much more careful study and consideration, and standards adequate to these needs and demands must be established for Houston in particular. Plans based on hunches do often succeed, of course, but the question of supplying Houston with a recreational environment adequate to its present and future needs is far too complex a problem to be played entirely by ear. Standards are indeed necessary, but must be carefully determined to eliminate faulty decisions which overcome any positive advantages.

Along with pertinent standards is needed imaginative leadership and educated planning bodies with the ability and the authority to create salable merchandise where the public is concerned. Successful planning backed by successful action is salesmanship in itself.

Once a plan is established and facilities constructed, even if both be of the finest and most popular quality, poor operation and poor public relations may destroy all benefits. Efficient operation and continued enjoyment must be taken into account by the planner and their importance must be impressed upon the public. A manual of operating procedures which would outline the intended functions of a facility, the activities for which it is designed, maximum capacity of space, procedures to be followed in the event of future

expansion, the maintenance of each area, could do much to promote any project and stimulate public interest and might also serve as a reference to future needs and demands.

The growing importance of leisure has created a surging demand for open space and recreational facilities. Houston's potential for recreational enrichment is being shamefully neglected. The pressing social needs for a structured open space system coupled with the distinct economic advantage brought by such a plan make the urgency of immediate action the number one consideration.

A planned recreational system of regional significance at Lake Houston could and should be inaugurated. To insure establishment of these facilities and others in a systematic program, the following recommendations are offered:

1. A survey of recreational habits of Houstonians is direly needed.
2. This survey by a quality professional team should be directed toward the creation of a bold program for the total recreational environment for Houston.
3. A Regional Parks Board with power to carry out these recommendations should be established to insure future progress.

# APPENDICES

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# LAND ACQUISITION

There are a number of ways in which a municipal government can take constructive action to secure the existence of open spaces in the city.

One of the means, though hardly the most useful, is zoning. While it is true that a municipal government technically has the power to zone a particular area so that it is restricted as parkland or open space, such action can be construed to be equal to confiscation without compensation. When zoning is employed to establish open space, it is at best a rather poor stop-gap measure which serves mainly to antagonize rather than sell the public on this or any other issue.

Another means which the city has is the right to condemn and purchase

land to be developed immediately as a park or to be placed in reserve for future development. In Texas, both city and county have this right. In addition, it is specified that the city has the right to condemn and purchase land for use as a park, even if such land is outside the legal boundaries of the city provided such land is within the county in which the city is located. This is demonstrated by Acts 1935, of the 44th Legislature of the State of Texas, page 645, Chapter 389, Sections 2, 3, 4, and 5. Thus the powers of city and county in the acquisition of land for use as recreational open space are clearly specified by law, and the methods of financing by taxation available to the city and county are clearly enumerated.

A third means of acquisition of development rights to land without outright purchase is that of easement. A city not only has the right to purchase outright any land over the owner's protest by condemnation proceedings, but the city may also purchase restrictive easements by this same means. This technique could be useful to the city because it is less expensive than purchase and carries no obligation of improvement or maintenance. Furthermore, it keeps valuable land on the tax rolls. These and other advantages of easements are outlined in OUTDOOR RECREATION FOR AMERICA:

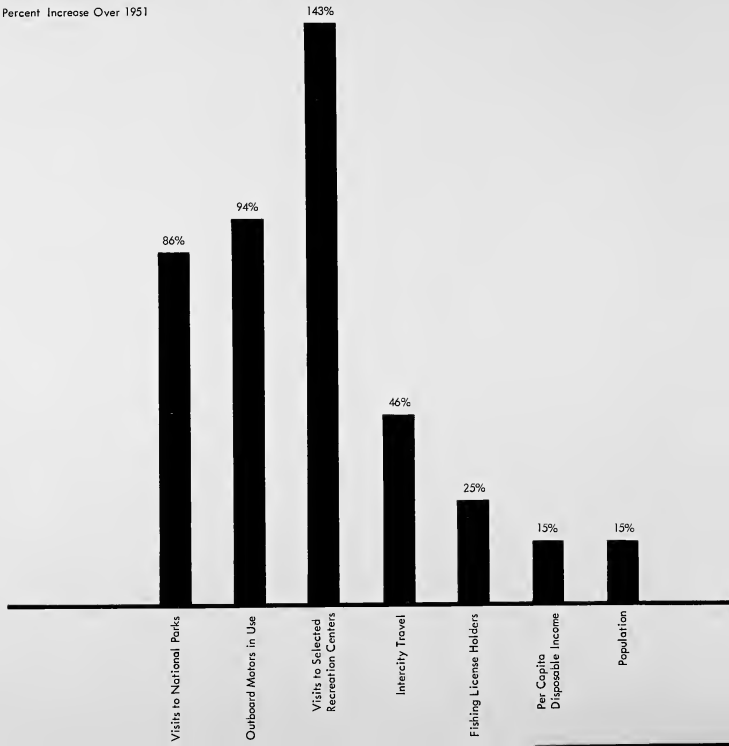
1. "By the ancient device of the easement, the public does not have to buy the full bundle of property rights to land. It can acquire only the right that it needs—the right that the land be kept in its natural state or be open to the public. In highly congested areas, where the speculative value of land for a subdivision is very high, easements might cost virtually as much as the land itself; in relatively open land, however, they can be both reasonable and useful.
2. "Easements provide open space and buffer zones for parks. They can preserve a natural countryside to protect the flanks of highways, as with scenic easements bordering the New York Thruway and the Great River Road in Wisconsin. Although public entry may not always be possible on land obtained through these easements, they do produce conservation values as well as recreation value for pleasure driving.
3. "Easements can effectively provide 'greenways' within and near metropolitan areas on open space now underused. Rights-of-way for high-tension transmission lines, for example, are too often considered a necessary 'eyesore', and the swath they cut through an area is frequently a no-man's-land, littered with refuse. They can be put to use. Given public action, at very small cost, the land could be used for recreation — and the very fact that the rights-of-way are a network furnishes a ready-made means of tying different recreation areas together with walkways.
4. "There are several advantages — mostly economic — for a community in the use of these less-than-fee rights. For one thing, the land is productive from the local government's point of view since it remains on the local tax rolls, although perhaps at a reduced valuation. Finally, the acquisition of less than full rights is usually less expensive than acquisition in fee. The easements along the Great River in Wisconsin cost \$15 per acre — one-fourth the cost of the fee title.

# THE DEMAND IN GRAPHICS



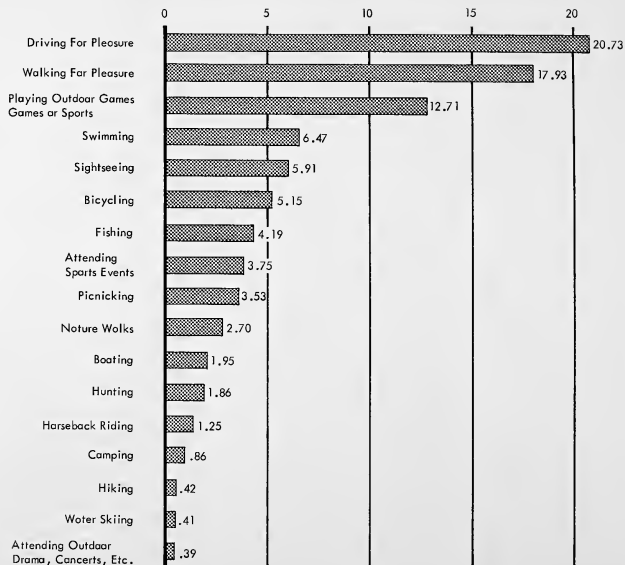
# INDICES OF CHANGE / 1951-1959

Percent Increase Over 1951

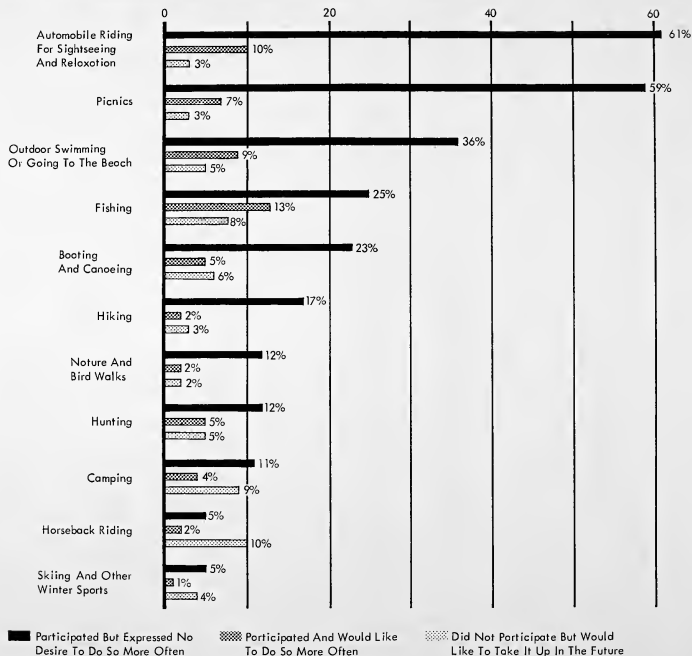


## WHAT AMERICANS DO MOST

Number of Activity Days Per Person, 12 Years and Over  
June 1, 1960—May 30, 1961



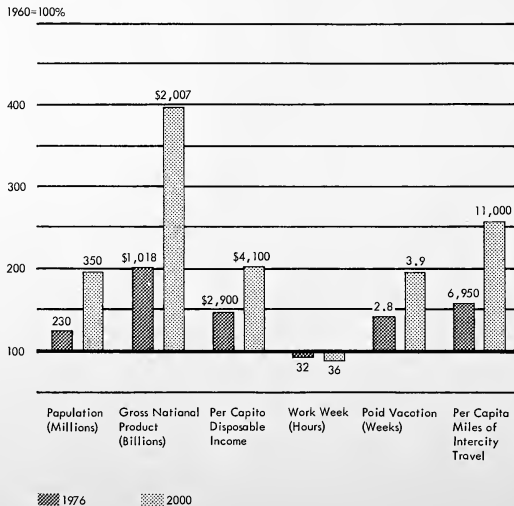
## EXPRESSION OF PREFERENCE IN OUTDOOR ACTIVITIES



# ESTIMATED CHANGES IN POPULATION, INCOME, LEISURE, AND TRAVEL

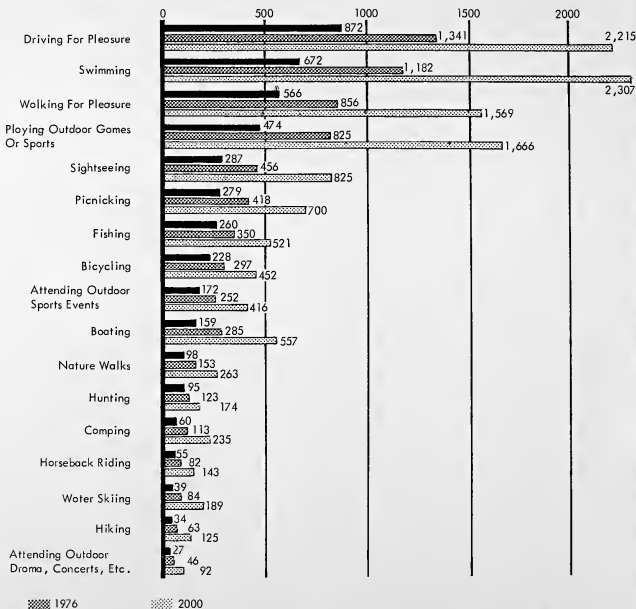
For The Years 1976 And 2000, Compared To 1960

1960 Figures	
Population (Millions)	180
G.N.P. (Billions)	\$503
Per Capita Disposable Income	\$1970
Work Week (Hours)	39
Paid Vacation (Weeks)	2.0
Per Capita Miles Of Intercity Travel	4170



# NUMBER OF OCCASIONS OF PARTICIPATION IN OUTDOOR SUMMER RECREATION

1960 Compared With 1976 And 2000 (By Millions)





# A FINAL WORD

After two months of surveying the needs, this report is presented to outline a program which can assure the benefits of outdoor recreation for all Houstonians for the present and in the future. It contains recommendations for action along a wide front and makes clear the importance of the role of Lake Houston. Now the task must be passed on to others, the residents of the Houston area.

The next step is for legislative bodies and administrative agencies at all levels of local government, for private land owners, and for individuals and their organizations to take action. We urge all to push forward in a city-wide effort to secure the contribution that outdoor recreation can make to the well-being of the city and its people.





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