

TABLE OF CONTENTS

FOREWORD	i
OVERVIEW	1
ISSUES	
II A. Issues We Have Heard	3
II B. Issues Within the R/UDAT Charge	4 5
II C. Issues Which Inspired the R/UDAT	5
RECOMMENDATIONS	
III A. Themes and Translations	6
III B. 1 Site Constraints and Opportunities	6 7
III B. 2 Demonstration Town-In-Town: Energy	10
III B. 3 Programming Residuals: Mixed Use	11
III C. Site Plan/Critique of Expo Plan	15
III C. 1 Characteristics for Development of Plan	
III C. 2 Highways	21
III C. 3 Public Transportation	24
III C. 4 Parking	26
III D. Partnership for Demonstration	28
III E. After Expo: Broad Community Impacts	34
III F. Research/Action: U.S. Pavilion	42
CONCLUSIONS	43
WHO'S WHO: R/UDAT	44
WHO'S WHO: HUMANISTS	48

FOREWORD

FORWARD: R/UDAT AND ITS CHARGE

How will Knoxville direct its energies to maximize residual opportunities generated by the International Energy Exposition in 1982?

Between May and October 1982, Knoxville will receive an influx of millions of visitors plus exhibitors from across the United States and some 30 nations. A diversity of energy conservation and production techniques will be demonstrated and illustrated. Expo '82 will be developed on a 78-acre site wedged between the Knoxville Central Business District and the University of Tennessee/Fort Sanders community.

To identify and assess long-range benefits and possible deficiencies resulting from Expo '82 and their impact on Knoxville's human environment, the East Tennessee Chapter of the American Institute of Architects and the Knoxville-Knox County Metropolitan Planning Commission requested input from a national multi-disciplinary team of professionals, known as R/UDAT. This Regional/Urban Design Assistance Team -- two architects/urban designers, a planner, economist, transportation specialist, landscape architect, humanist/architect/planner, and editor -- worked closely with eight local professional humanists. During an intensive four-day brainstorming study here, the teams toured the site and inner-city neighborhoods and met with local interest groups, citizens, and the Mayor of Knoxville to glean essential information on attitudes toward Expo and its residuals.

R/UDAT is a program of AIA's Urban Planning and Design Committee. Since 1967, such teams have provided assistance to more than 50 communities across the nation.

The "After Expo" R/UDAT, funded by the Tennessee Committee for the Humanities, was charged to:

- ●Identify potential effects (costs and benefits) of Expo '82 on the whole Knoxville community; and
- ●Develop a conceptual plan to guide Expo '82 residual development and concomitant changes toward achieving long-range goals of the community.

Objectives of the R/UDAT study were to include:

- Development of criteria by which specific proposals might be generated, evaluated, and implemented.
- Identification of primary "residuals" which should be incorporated into Expo '82 and related development.
- Schematic planning of major opportunities to obtain long-range community improvements through Expo '82 and related development.

The East Tennessee Chapter/AIA expressed three concept possibilities for Knoxville after 1982; these reflect the entire scope of "after Expo":

- Knoxville should become the "Energy Capitol of the World", based on fact that the Tennessee Valley Authority and University of Tennessee are headquartered here and Oak Ridge is only 25 miles away.
- ◆ Knoxville should capitalize on the fact that it is technically possible to create an inland port of entry on the Tennessee River for oceangoing container ships. The impact of such a transportation breakthrough is readily apparent by Knoxville's geographic location.
- •Knoxville should take advantage of its natural environment, especially its proximity to the Smoky Mountains, and become the major gateway to one of the nation's most scenic resort areas.

The local architects proposed ten points for R/UDAT to consider:

- That Knoxville become a more balanced community geographically. Presently, commuters are travelling long distances from subdivisions in west Knoxville to work in the inner city, while land lays vacant closer to the city on the north, east and south sides.
- ◆That existing codes and regulations be reviewed for consistency with energy-efficiency objectives.
- That tree planting programs and the like be implemented as a means of micro-climate conditioning. One theme under consideration is that Knoxville become known as the "City Built in a Forest".

- That physical connections be provided within the city for means of transportation other than the automobile. These connections would include: bike-trails, walkways, overpasses, green-belts, etc.
- ◆That a formal system of energy management be established that would deal with issues such as energy costs and benefits in proposed developments, solar rights and other energy issues.
- That the attractiveness of the inner-city be improved as a means of promoting the greater utilization of the inner city as a place, not only for businesses, but for living as well.
- That financial incentives be encouraged from both public and private sources as a means of promoting energy efficiency.
- ◆That multiple energy sources be promoted as back-up systems for times of crisis. For example, many homes have gas heating and no other means of heating. If gas were temporarily cut off, there would be a reserve system of electrical, coal or wood heating.
- That historical preservation, life-time cost analysis, building maintenance programs and other considerations be given to the structures of the city as a means of extending the useful life of the buildings and infrastructure. Maintenance typically costs less than new construction.

●That passive energy design be promoted as an integral part of the design process for all construction.

In its message to R/UDAT, the local AIA Chapter said: "These ten points are by no means a comprehensive listing of the ways to achieve an energy-efficient community. Our intention as architects is to build well, with a conscious interest in energy conservation as part of the design criteria for all of our projects."

In conclusion, the Chapter said it would like to leave R/UDAT with one last thought: "In the 1950's, this country seemed to be preoccupied with economics. In the decade of the 60's, economics was still important, but trade-offs began being made in favor of the environment. In the 70's, economics and the environment were still important, but we began making trade-offs in favor of energy considerations. We would propose that in the 1980's we mature to the point that we can consider economics, environment and energy equally and make trade-offs only in favor of improving the quality of life of those for whom we build".

R/UDAT expresses its appreciation to the citizens of Knoxville, civic leaders and public officials of Knoxville and the University of Tennessee architectural students who helped make this report possible.

Planning for the 1982 International Energy Exposition has raised Knoxville's consciousness of itself as a potential center for energy research and development. Expo '82 has focused the theme of energy development and can serve to help generate a model for demonstrating future energy use. But while Expo's coming has forced Knoxville's citizens to look toward an energy efficient future, discussion, debate, and public hearings concerning Expo have focused attention on Knoxville's past and present.

The theme of Fxpo '82 could not be more timely, nor could its location in Knoxville, the home of TVA, be more appropriate. Some 40 years ago, George G. Winant, then our ambassador to England, wrote of the TVA: "In a larger sense the TVA envisioned in its entirety something beyond power development. It entered the wide field of flood control, soil erosion, afforestation, elimination from agricultural use of marginal lands, and distribution and diversification of industry.."

In the nearly half a century since the beginning of TVA, the nation faces a crisis as acute as the rural malaise which TVA tried to combat. Then the problem was mainly the human waste produced through lack of planning with regard to natural resources. Today the crisis is the same, but its dimensions have altered. U.S. citizens who comprise less than six percent of the world's population consume one-third of the world energy output. On a global basis the unbridled use of energy may lead to disastrous effects on our geosphere, irreversible pollution

of our land and water, and the depletion of our natural resources.

Urban sprawl has become the predominant model of citied traditions and their development in the machine age of twentieth century industrial civilization. The automobile has made urban sprawl possible. Cheap and accessible fossil fuel has permitted the separation of work and home, industry and residence, office and family. Mobility has been easy and inexpensive. Our cities have reflected our technologies. The downtowns of our cities have decayed while our suburbs have leaped over one another in expansion following upon expansion. Knoxville has followed this typical model of urban development.

The city that plans to host the International Energy Exposition in 1982 is itself a city that by its current design and transportation system, both of which are shaped by and dependant upon the automobile, represents the end of an era. Our cities will and must change to respond to the new era characterized by less and less dependance on fossil fuel energy sources.

The immediate goal of Energy Exposition '82 is to focus worldwide attention on the need to develop new energy technologies and to promote ways to conserve energy. The long-range goal of the Knoxville sponsors of Expo'82 is to revitalize the downtown business district of Knoxville.

The theme of energy is, without question, timely. Alternative energy sources and policies are high on the agenda of the most pressing issues facing contemporary civilization. As architects, planners, and humanists, we recognize the challenge to examine the potentials of Expo '82 for Knoxvillians and the other inhabitants of Planet Earth in keeping with the theme of the Exposition.

Our focus in this report will be on the relationship of energy policies to urban design. We propose that the lower Second Creek area of Knoxville be developed after Expo '82 as a demonstration model of energy efficient urban design and that all planning for the Exposition itself be done in ways consistent with this larger goal.

THE TENNESSEAN, Monday, March 26, 1979

OPEC's Price 'Hawks' Want Hefty Increase?

GENEVA (AP) — Price 'hawks' of the Organization of Petroleum Exporting Countries called yesterday for hefty price increases — up to 25% — as oil ministers gathered for a two-day session, informed sources reported.

ISSUES

II. A. ISSUES WE HAVE HEARD

R/UDAT heard presentations of the issues touching on after-Expo in two sets of public hearings. At the first hearing on Friday, we listened to representatives from ten local interest groups:

Julia Tucker - Knox County Schools Stewart Evans - Downtown Knoxville Association Bill Murrah - Inner-City Neighborhood Coalition Pam Grimm - East Tennessee Development District Bruce Ralston - Citizens for a Better Knoxville Gene Burr - Expo Community Appearance Committee Henry Morse - UT Campus Planner Frank Deller - Chamber of Commerce Ron Childress - Knoxville Heritage Don Gilson - American Planning Association Gene Burr - American Institute of Architects

At the second hearing on Saturday, R/UDAT heard from the following individual citizens:

George Siler - Expo Planner Jim Spencer - UT School of Planning Bruce Ralston - Citizens for a Better Knoxville Jim Robinson - East Knoxville Resident Barbara Miller - Fort Sanders Resident Lee Munz - Energy Opportunities Consortium Rev. W. T. Crutcher - Mt. Olive Baptist Church Dean Fred Peebles - UT College of Engineering Dr. Carl Thomas - UT Dean of Research Professor Jack Nassar - UT Architecture Mark Siegel - Fort Sanders Resident Perry Redmond - East Knoxville Resident Avon Rollins - Expo Board Member Merikay Waldvogel - Knoxville Women's Center Walter Lambert - Knoxville Resident Mark Thompson - Fourth & Gill Resident

Dan Alvis - Knoxville Arts Council
Mack Gentry - West Knox County Resident
Gus Handley - Department Store Executive
Zimbabwe Matavou - Advocate for Neighborhoods
Development

Bob Allen - Sierra Club
Leon Ridenhour - Citizens for a Better Knoxville
Joan Worley - UT Librarian
John O'Donnel - Fort Sanders Resident
Oscar Brown - East Knoxville Resident
Dick Ott - Keep Improving the Community of
Knoxville

Bob Hill - Knox County Commissioner Dewitt Beeler - Citizens for a Better Knoxville Richard Beeler - Citizens for a Better Knoxville Tim Lawson - Knox County Resident

Testimony given at the hearings suggest that great expectations have been raised by Expo relating to jobs and job training, community development, minority involvement, a center for handicapped children, downtown business improvement, government and media credibility, transportation improvements, open spaces, energy retrofitting, city beautification, new energy policies, and numerous other issues. Testimony also suggests that Expo has become a project of such size and complexity that it has overwhelmed local planning agencies and procedures. According to some testimony, several planning activities normally within the scope of these agencies -- residual site planning and neighborhood redevelopment in particular -- have, either by design or default, come to reside with the KIEE.



II. B. ISSUES WITHIN THE R/UDAT CHARGE

1. Center City Redevelopment

R/UDAT was asked to address ways to reinforce the CBD through development of the lower Second Creek Valley. In particular, we were asked to examine how residual use of the Expo site could strenthen commercial activities of the proposed East-West Mall, other hotel and restaurant activities, and related facilities.

Other random information gathered by or presented to the team covered the many problems facing the CBD at the present time:

- Deterioration
- Access/Circulation
- Diminished population
- Non-Resident Ownership of Land
- Complex Ownership Patterns
- Riverfront Edge
- Connections with Inner-City Neighborhoods

Several of these problems will be discussed in detail with specific reference to after-Expo site use.

2. Existing Expo Site

The lower Second Creek Valley has many advantages associated with it both for and after Expo use. It's proximity to CBD, UTK, Fort Sanders, and the Tennessee River offers opportunities for connecting future use of the site to the surrounding area. Several existing buildings, such as the L&N Station

and Miller's Warehouse, offer possibilities for adaptive reuse which can add vitality to after-Expo site development. Some conditions, however, must be carefully studied for reuse activities, notably the severe grade changes at the east and west edges, the distance from the Fort Sanders/UTK communities to CBD for pedestrians, and isolation of the site from the river edge at grade.

These site conditions will be addressed in greater detail.

3. Expo '82 Plan

Certain elements of the Expo '82 plan have a direct bearing on site reuse insofar as they envision permanent building changes. The location of the U.S. Pavilion and the State Pavilion will be dominant architectural elements spanning the site, Henley Street, and Cumberland Avenue. Proposed above grade crossing of Henley provides one pedestrian linkage with CBD, and others will be necessary for site reuse. The tunnel under Henley offers one possibility for linking the East-West Mall to the site. Waterways on the site for Expo offer opportunities for reuse, but can at the same time limit site-reuse flexibility.

Generally, the Expo '82 plan, to the extent that details were available, addressed major problems of access, linkages, and circulation in a way that probably can be advantageous in site reuse.

II.C. ISSUES WHICH INSPIRED THE R/UDAT

1. Theme Beyond Expo '82:

As discussed in the Overview, the team was tremendously inspired by the potentials and opportunities expressed in the Expo theme: energy use by man. Beyond the moment of Expo '82, and beyond the six months of visitation, the theme suggests strong continuing activities which can have significant impact on Knoxville as the energy capital of the world. Also of significance to the team was the strong presence of the TVA in the region, further symbolizing the strength and heritage of energy development, as well as the energy development and research at Oak Ridge and the University of Tennessee.

The team strongly reacted to the possibilities of significant energy related and inspired activities being demonstrated on the after-Expo site.

2. Organization and implementation after Expo:

llaving heard much discussion about the existing organizational processes used to create Expo '82, the team was strongly compelled to address the possibility of a different and unique method of developing the after-Expo usage of the lower Second Creek site. Both private citizens and agency representatives expressed some frustration with the conventional methodology which caused the KIEE to be placed in a position of defense publically and caused the citizens to feel alienated from the process. Opportunities became apparent to the team for a fresh course of action for the planning and development of the After-Expo site in a manner which resolves to the Expo methodology.

3. Lifestyles and Habitat:

R/UDAT was strongly inspired by the possibilities of the use of the Expo site to provide a continuing demonstration of man's optimum use of energy. As mentioned in the Overview, there appears to be a tremendous one-time opportunity to create a living and working environment in which people can demonstrate optimum use of energy in their everyday lives. Implications of this concept are limitless, and by simply addressing those wasteful habits of today's lifestyle and habitat, it is possible to demonstrate how living can be enhanced in an energy conscious environment. Beyond the immediate lower Second Creek site, the possibilities exist for this kind of demonstration to spread slowly but deliberately through the neighborhood fabric of Knoxville. The team's recommendations will directly address these possibilities.

"The opportunity we have in this community . . . is to develop a realistic and meaningful leader-ship structure."

"I wasn't in favor of Knoxville having a world's fair because that was too big a project for us to manage. An exposition is more manageable. We can handle that and it can help us achieve some things in this city that otherwise would take a long, long time in coming."

RECOMMENDATIONS

III A. THEMES AND TRANSLATIONS

To speak of what will survive Expo in the way of site development assumes that not one but two plans have been made: one designed for a six month exposition and the other designed as a lasting addition to the city. Obviously an ideal solution would be an Expo plan which, with minimal change, would serve both the temporary and lasting goals.

Each site development decision should focus when it is at all feasible on blending these two separate goals. It frequently should be possible to find such solutions if the motivation of both the temporary and the permanent developments are pursued with energy consciousness.

Expo '82 has as its main function the demonstration of energy making, energy usage and conservation of energy. The physical elements designed for or used at Expo should in so far as possible serve as models of these goals.

After-Expo site developments should be able to benefit from the preparations made for the long-range use of the site during its initial phase as an international energy symbol. Hopefully some buildings will be continued in use with no needed basic changes. Others can be retrofitted. Still others will be new. Our proposals for the after-Expo development of the site suggest a model to inspire the whole city of Knoxville to become a demonstration city of the future.

III B.1. SITE CONSTRAINTS AND OPPORTUNITIES

The lower Second Creek Valley provides a variety of opportunities as well as some important constraints to future development.

The strong physical identity of the site, its relation to the Central Business District, the residential community to the west, the University of Tennessee, and some natural amenities, as well as the permanent buildings which will remain after Expo '82, provide the organizing structure for future use.

- a) Topography and access: The varied topography of the valley with its steeply banked walls and flat bottom serves to both strongly identify it as a place and separate it from the surrounding neighborhoods. Even discounting the derelict quality of many of the existing structures, the site presently remains a "passed over" and ignored area of the city due to its original use as a railroad yard, the absence of access routes and any reason to go there. It is crossed by a number of bridges carrying rail lines and roads which divide it into isolated sections making full appreciation of its extent and scale difficult. It is presently a place to be avoided even by people living and working in the immediately adjacent areas.
- b) <u>Vegetation</u>: Despite the fact that much of the site is barren of trees and covered with concrete, railroad tracks and disused structures, some significant stands of vegetation occur on parts of

the site. The area immediately adjacent to the Fort Sanders neighborhood has many larger trees which begin to develop a highly scenic edge to the west side of the site. This feature is rather unique in its close proximity to the downtown and is visible both from the valley floor and the east embankment. Further to the south, as the creek emerges from its culvert (south of the Clinch Street bridge), a second important stand of vegetation occurs on either side of the creek. Here again larger trees occur, in conjunction with a dense understory, giving the area a naturalistic, park-like quality. Access to and circulation through these areas is currently difficult, if not impossible.

c) The Creek: Second Creek has evidently undergone substantial manipulation over the years. It disappears into culverts at least three times within the site and is channelized, dammed and otherwise altered at a number of places. Its use as a receptacle for litter, industrial waste and garbage has severely impacted its water quality and the condition of the banks and bottom. Its final discharge point at the river occurs in a culvert beneath Neyland Drive.

Despite its deteriorated quality, the creek serves two important functions: it defines a linear organization through the valley forming a north-south spine; and it provides the only drainage facility for the entire site area. Clearly it holds great potential for any future

development.

d) Structures: Many of the existing buildings and other structures on the site are unused and derelict. These include: the L&N Station, the railroad warehouses, many of the tracks and platforms and a variety of other structures lining the sides of the valley.

The most substantial and potentially useful existing developments include: the Miller's Warehouse, adjacent to the Clinch Street Bridge; the Savage Warehouses, south of the bridge; the L&N Station at the north end of the site; and the Miller's Garage. Additionally, two major streets (Cumberland/Main and Clinch Street) serve as important vehicular routes east-west across the site. The elevation of the Clinch Street Bridge provides views of the valley beneath. The bridge is a strong visual feature which tends to truncate the valley when viewed from a distance.

e) The Site Surroundings: The immediate environs of the site offer the most varied and significant features of Knoxville, undoubedly the most unique feature of the Second Creek Valley. To the west lies the medium density residential community of Fort Sanders comprising many attractive Victorian structures and serving in part as a university housing community. Several industrial operations are now also active here. The eastern boundary of Fort Sanders begins to climb down the side of the valley forming the only existing residential connection to the site.

South of Fort Sanders is the campus of The University of Tennessee with a daytime population of some 35,000 students and faculty. While much of the campus is not visible from the site, its close proximity must provide a fundamental impact upon any development plan for the valley.

At its southern extremity the valley empties into the Tennessee River after crossing Neyland Drive. While the drive encompasses virtually all of the river terrace along the northern bank, views of the river are dramatic from across the road. As is so often the case with riverside cities and towns, Knoxville has largely turned its back on the river placing the few remaining points of access at a premium.

To the east of the valley lies the residential community of Maplehurst, largely comprising student occupied multifamily housing, and further to the north, the heart of the downtown. A variety of substantial barriers have been developed here which effectively insulate and separate the site from the downtown. Warehouses, parking garages, a substation and other low-intensity commercial uses greatly impede visual, pedestrian, and vehicular connection between the Central Business District and the site.

At the north end of the valley lies the derelict L&N Station, a bridge carrying Western Avenue and additional rail yards beyond. The bridge tends to close off the rail yards from view from the southern part of the site resulting in a backwater/enclave to the north. Surrounding this area are interstate highways and large commercial structures which increase its insulation on all sides.

- f) Summary of Site Repairs: In considering the after-Expo use of the site, certain foregoing site constraints must be ameliorated or eliminated if future developments are to successfully integrate themselves into the fiber of the Knoxville area. These include:
- Improvement of site access from the downtown, the University, and the Fort Sanders and Maplehurst neighborhoods.
- Development and repair of the creek edge and watercourse.
- Visual connections between the site and its surroundings.
- Maintenance of existing and development of added natural amenities.
- Renovation or removal of derelict and/or unsightly structures on the site.
- Development of a comprehensive land-use plan for future development which addresses these issues.

"I believe that parking is going to be our limiting factor. The success of our Exposition is going to depend on how well we can manage that parking."



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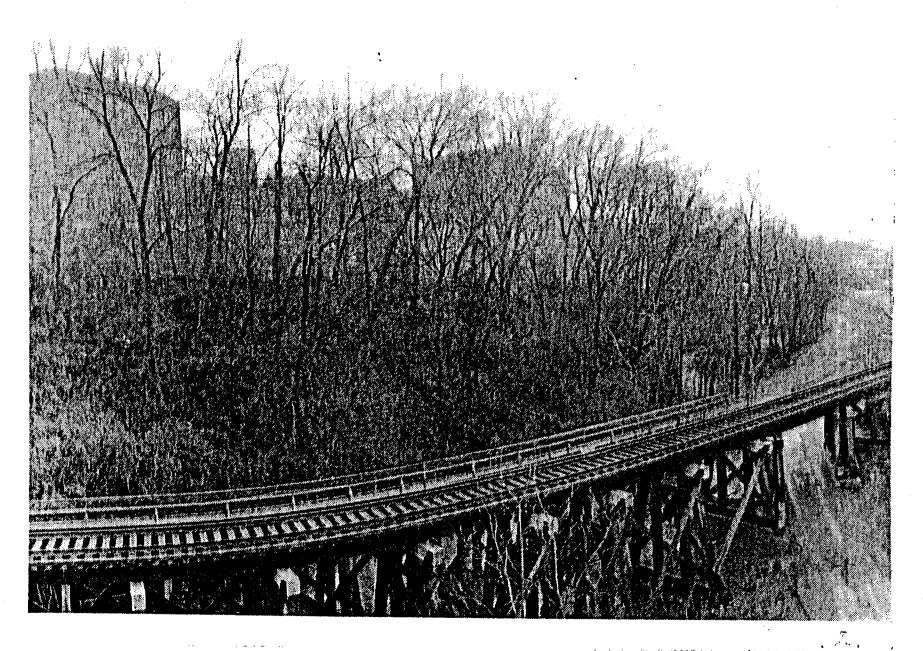
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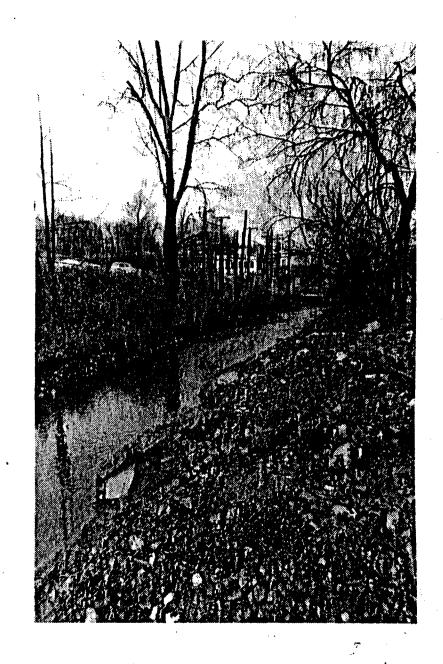
TOPOGRAPHY: The steep slopes occuring along either side of the valley require special and sensitive treatment. Properly handled, they can be developed as open spaces, pedestrian access ways, or as the sites for stepped structures. They represent an important opportunity for visual and physical connections to the areas adjacent to the valley.



VISUAL ACCESS: The valley floor is highly visible from surrounding neighborhoods and downtown Knoxville. Any development taking place in the Lower Second Creek Valley will be equally visible. Its success will be strongly affected by the establishment and maintenance of strong positive visual connections with its surroundings.



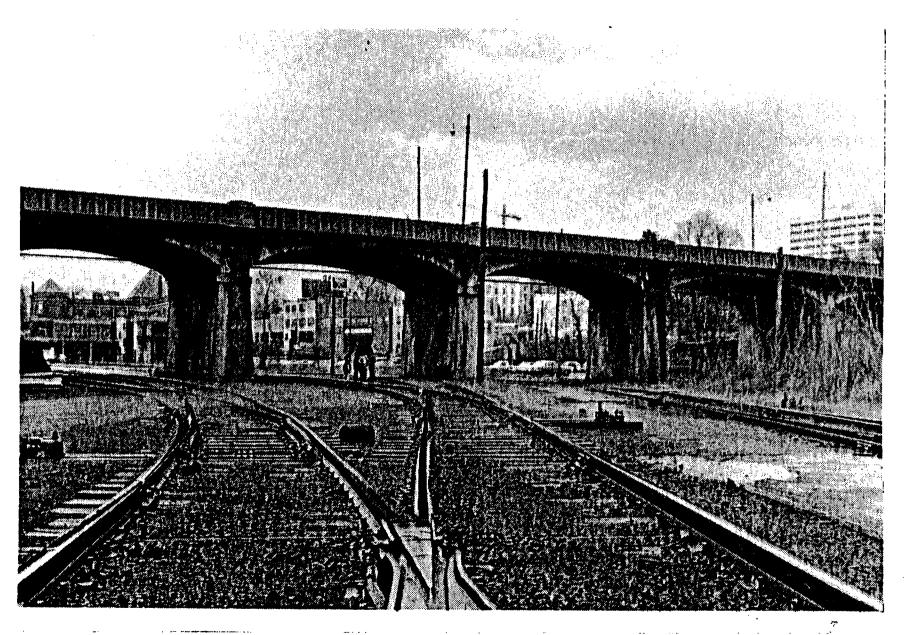
EXISTING VEGETATION: Where existing trees and natural vegetation can be enhanced with careful landscaping techniques, while minimizing ongoing maintenance, strong opportunities exist for creating attractive natural environments.



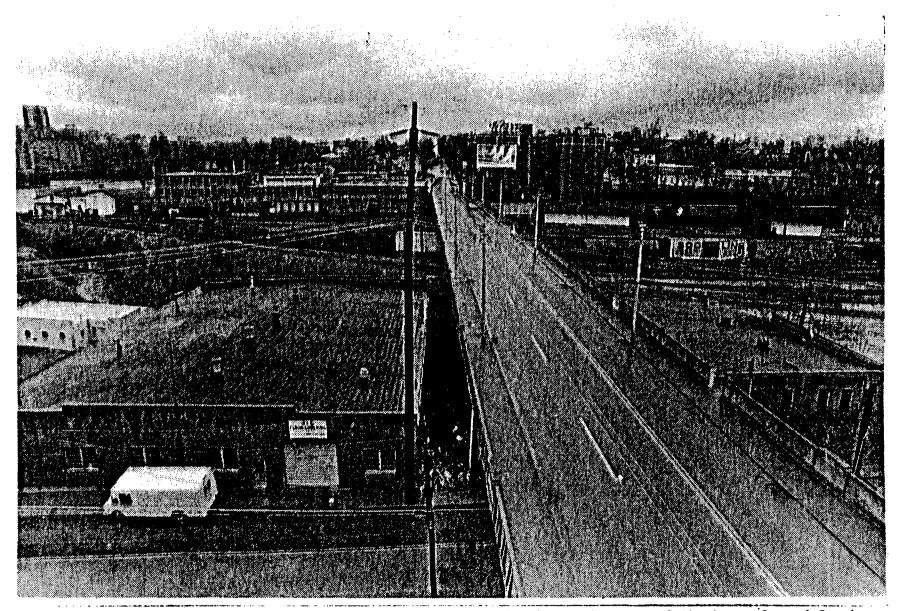
SECOND CREEK: Slowly trickling water forms a linear spine through the Lower Second Creek Valley, offering a rare opportunity for the development of passive open space at a human scale within an urban setting.



THE L&N STATION: Almost unlimited potential for varied residual uses are offered by this architecturally rich structure. Visually prominent as well, as it rises above the valley, the L&N Station can become a strong focal point for diverse activities at the corner of the site.



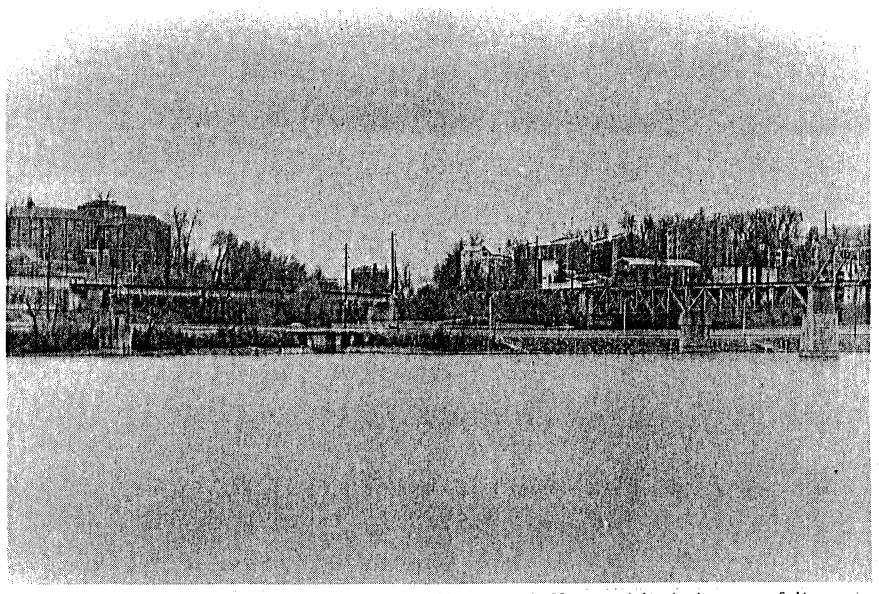
CLINCH AVENUE VIADUCT: The viaduct makes possible direct and easy pedestrian linkage between Fort Sanders, the site, and downtown Knoxville. In addition, it provides opportunities for development of active uses at the floor of the valley.



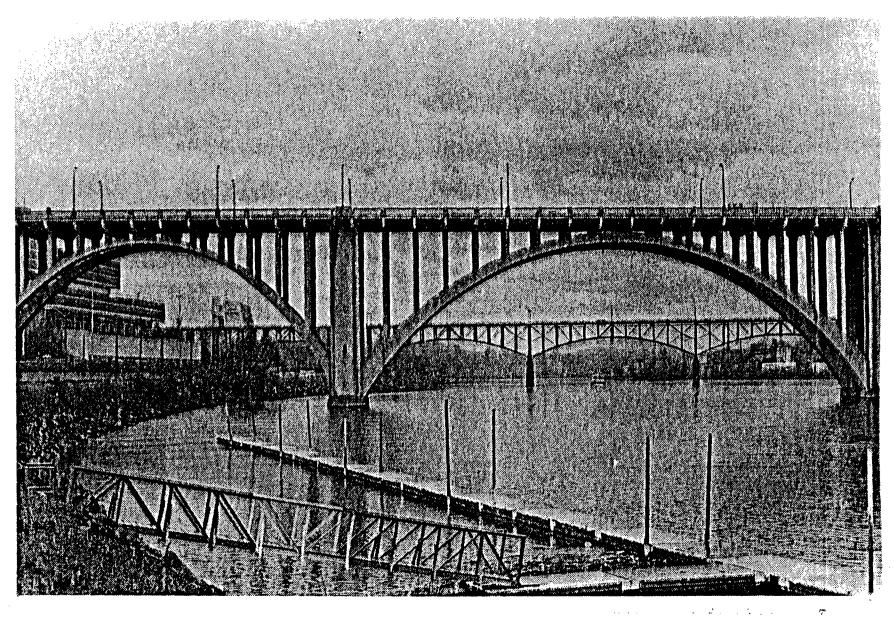
FORT SANDERS AND THE UNIVERSITY: The two areas located immediately to the west of the Lower Second Creek Valley contain substantial populations likely to take advantage of activities and facilities provided on the site. Beyond that, the site can act as a link between these areas and downtown Knoxville, rather than a visual and psychological barrier, allowing a wide variety of uses and relationships.



EXISTING HOUSING: Many examples of fine residential architecture are found in the Fort Sanders area at the western edge of the Lower Second Creek Valley. The strong fabric of this area, and its close relationship with the site, suggest the potential for similar development on the site, at higher density, but equally responsive to human scale.

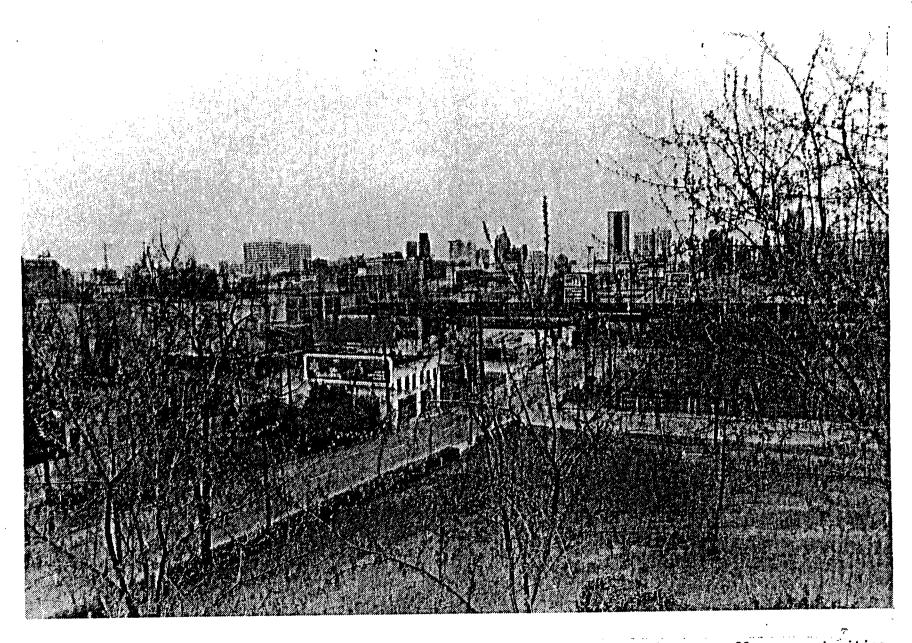


THE RIVER: Much as many other riverside cities, Knoxville has gradually turned its back on one of its greatest natural and scenic resources. The Lower Second Creek Valley offers the possibility of a direct connection to the river's edge in close proximity to downtown Knoxville. Construction of pedestrian access over Neyland Drive opens opportunities for a wide array of river-related activities.

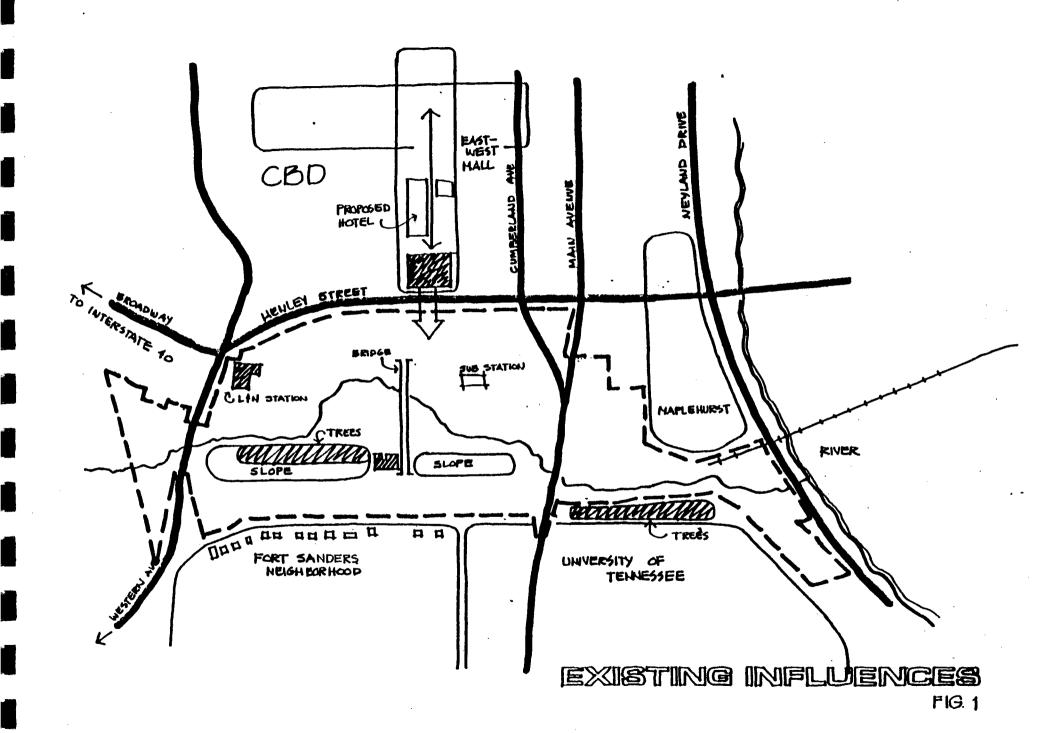


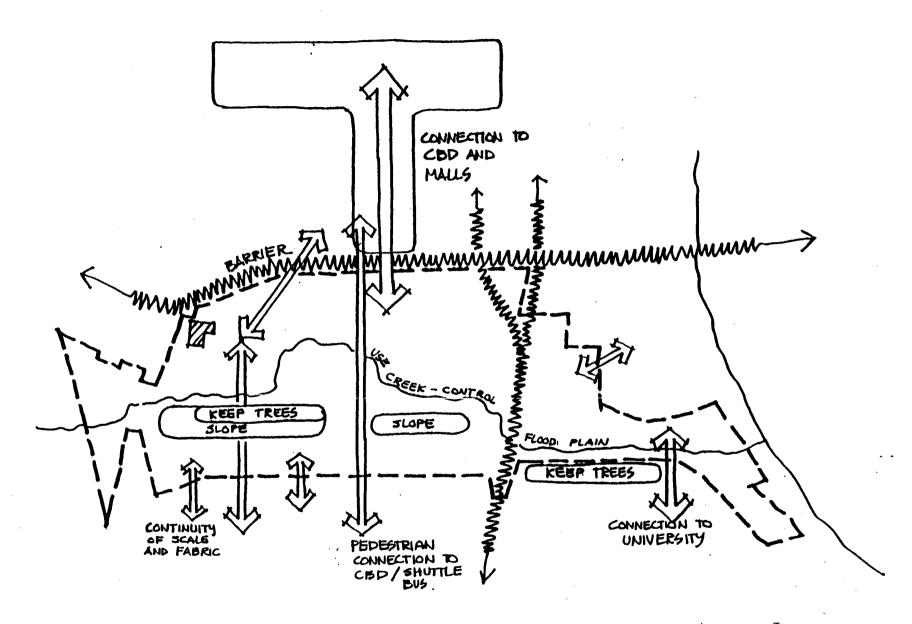
THE RIVER'S EDGE: The development of a pedestrian/bicycle trail along the riverbank would provide Knoxville with a major new recreational and scenic resource. The riverbank could become the site of floating restaurants, boat docks, fishing piers, and much more, while remaining an exciting place to walk or cycle.





DOWNTOWN KNOXVILLE: Bordering the Lower Second Creek Valley to the east, the downtown offers opportunities for vital and exciting activities on the site, while benefiting itself from the proximity of the development of the site.





1**58UES** FIG. 2

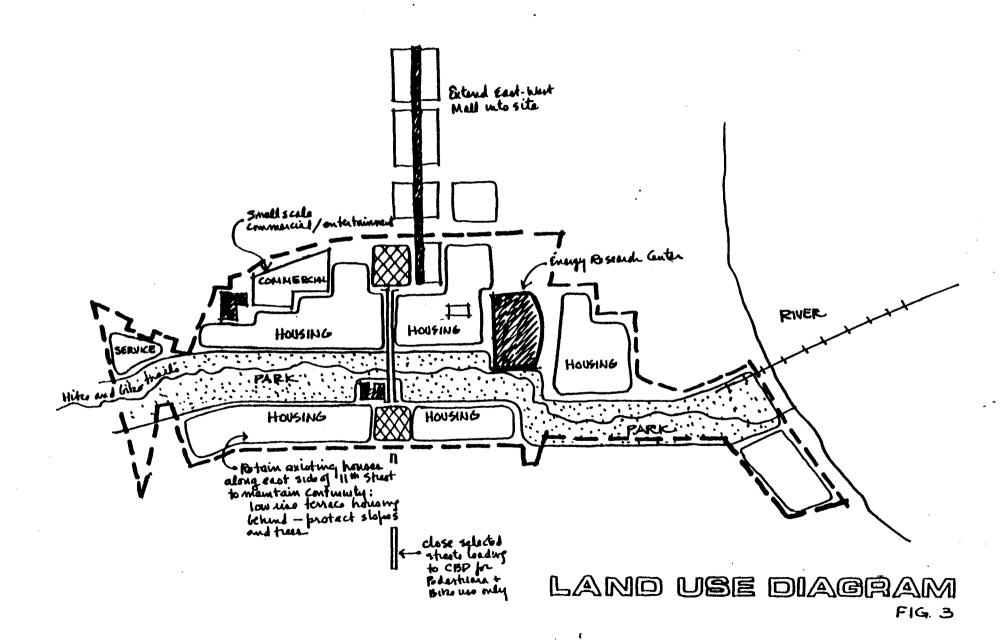
III B. 2 DEMONSTRATION TOWN-IN-TOWN: ENERGY

The permanent development of the Expo site for merely conventional housing or commercial use would not embody the aspirations of Knoxville to be "the Energy Capital of the World." Rather than merely seeking private developers in 1983, we propose that Knoxville commit itself to, and begin planning for, an innovative permanent development of the site now.

Knoxville's needs - the needs for housing, for a resident inner-city population - are compatible with the concept of a residential community designed to demonstrate a new attitude toward architecture and urban development based on an energy consciousness. The site should therefore be developed predominately for residential use demonstrating a variety of housing types and densities, each designed to achieve maximum energy efficiency within conventional market housing. The entire site development should maximize energy self-sufficiency, minimize the use of energy consuming transportation systems and provide operating examples of urban development for a new era of city growth.

This idea is not presented as an unrealistic "model community" but as a real community, built in response to the market and income demands of Knoxville, but with an energy conscious basis. The site should include facilities for monitoring and evaluating its own performance.

Such a permanent use is not only worthy of the concept of Expo, but is a logical extension of the efforts and original goals for TVA. Given the new spirit of energy consciousness at TVA, there is every reason that TVA should welcome the opportunity to participate in this venture.



III B. 3 PROGRAMMING RESIDUALS; MIXED USE

The development of a program for residual uses on the Expo site must draw on three sources:

- energy use conservation: not only as a theme for Expo, but as the fundamental principle behind the future development of greater Knoxville;
- ◆ the intrinsic positive features of the site: both as they exist today, and as they will be developed through the design and construction of Expo
- the need to support and improve the areas immediately around the site: downtown Knoxville, the University of Tennessee, Fort Sanders and other inner neighborhoods, and the river edge.

The following program responds to these concerns:

Housing: The Backbone of the Program

We propose that the focus of the residual development of the site should be a body of residential, commercial, and cultural facilities fundamentally new to Knoxville, based on the international need for the demonstration of an effective energy conserving community, one which maintains a high quality of life within the context of a growing energy crisis. We have already explained our rationale for such a objective. Here we present the content of a development scheme which carries it out.

The spine of the community consists of a residential development comprising a variety of housing types, densities, offering the opportunity for a

wide variety of patterns of life. The housing would be designed in direct response to the urgent need for housing in Knoxville, while based on an underlying committment to reducing energy demands through a variety of physical and operational features. These include:

- (1) a low energy use circulation system throughout the project employing pedestrian walkways, minibuses, and utilizing the existing Knoxville public transportation system;
- (2) siting of buildings in response to solar orientation, the local microclimate, and access to support facilities;
- (3) maximum utilization of energy conserving construction technologies;
- (4) provision of a wide range of energy conserving power generation systems;
- (5) a comprehensive system for recycling solid waste.

The following discussion presents the additional features contained in the program for the site:

Specific Features

(1) Access

Both in the interest of linking Fort Sanders with the downtown, and in view of the demonstration character of the housing in the center of the site,

it becomes critical to maximize the impact of the development with regard to its visibility and its accessibility to surrounding areas. The connections between the existing and the new development are reinforced by providing major links to the downtown, the University, and the surrounding neighborhoods through existing routes serving those areas. It is essential that the new housing, as well as the other facilities on the site, be woven into a circulation system that connects the east and west sides of the site. This is achieved, in part, through the development of a major pedestrian (as well as possibly public transportation) system across the Clinch Avenue Bridge. through the development, and connecting in turn with the East-West Mall in downtown Knoxville.

Development of the Clinch Avenue Bridge in an effective manner is an important element in development of the entire site. As described below, its ends, at both the Fort Sanders and the downtown sides, are particularly important spaces. The bridge itself, if closed to vehicular traffic, could be used as a center for exhibits, small stalls, etc., in conjunction with the proposed crafts/arts center, and could become an extension of it.

(2) Commercial, Cultural, and Open Space Development

In support of each of the goals listed at the beginning of this section, we propose that major commercial development take place in two modes on the east side of the site, one in and around the rehabilitated L&N Station, and the other facing the East-West Mall. It should be stressed that

commercial development on the site does <u>not</u> dominate the entire eastern part of the site above the creek; rather, it is a distinctly secondary land use to the housing, which is located on both sides of Second Creek and the linear park. In addition, the commercial development does not form a continuous wall of commercial uses along Henley Street. Rather, it is interrupted by a series of small, open spaces, plazas, and parks which encourage pedestrian movement from the downtown area, and visual access from Henley Street.

At each end of the Clinch Avenue Bridge, we propose the creation of a distinctive urban plaza, with surrounding uses programmed to support outdoor activities. At the eastern end of the bridge, adjacent to downtown, the plaza would have an urban orientation, with hard surfaces and edges, while at the Fort Sanders end, the plaza would be less formal, with a more parklike feeling. Here too would be the renovated Miller's Warehouse, which would be converted into a crafts/arts center for the community.

Although there are a variety of separate facilities for the plastic and the performing arts in Knox-ville, there is no centrally located facility which could bring the many communities of the city together, and provide a variety of outlets for artistic expression, workshops and classes in arts and crafts, exhibition facilities, sale outlets, and a means, above all, where a new urban lifestyle in terms of craft participation in the largest sense of the term, can be fostered. The location and structure of the Miller's Warehouse would admirably serve this purpose. In addition to pro-

viding such a facility, we suggest as well that consideration be given to developing it in a manner - through financial involvement, employment opportunities, and design features - that will actively engage all members of the community.

The other major non-residential feature on the site incorporates the creek and much of the existing vegetation of the site into a linear park extending from the northern end of the site near Fort Sanders to the Tennessee River, along the west end of the site. The park would serve as a pedestrian circulation system within the site, a passive recreational facility, and an amenity to the adjacent new housing on the site, and development in nearby areas. It should include such features as bicycle paths, jogging trails, and a series of seating areas. In addition, it will provide direct pedestrian access to the river from the site.

(3) Riverfront Development

At the southern end of the park, the site is linked by a foot bridge to a proposed walkway paralleling the riverfront, and connecting to the existing riverfront development to the east. This will develop the extension of the open space system on the site to include a portion of the river edge, an amenity at present underutilized in the city of Knoxville. Among the new facilities that could be developed along the riverfront, most probably on piers extended into the river in view of the limited amount of space between the river and Neyland Drive, could be docks or fishing piers, a riverside restaurant, a boat house for the University, and an open air concert

or band shell. This last could be particularly effective in encouraging people from all parts of the community into the area.

(4) Henley Street

If the development of the site is to promote closer ties between the University and Fort Sanders on the one hand, and downtown on the other, it is essential that Henley Street not impose a barrier on the east side of the site. To avoid this possibility, which is serious given the volume of traffic anticipated, the southbound lanes have been depressed to a lower elevation, with a wide median separating the north and southbound traffic corridors. As a result, Henley Street develops the character of a boulevard or parkway, serving the community as a local-express route which bypasses much of the new development, while still providing drivers and passengers with an excellent view of the site.

(5) Fort Sanders and Maplehurst

The housing program for the edge of the site adjacent to the Fort Sanders neighborhood must be viewed as a direct extension of the existing fabric and texture of that neighborhood. By retaining the existing houses on the west side of Eleventh Street a more natural transition to the new development can be created. New Housing, immediately behind existing units, should be of a low density, terraced character, which will fit both into the natural contours of the site and the manmade contours of the Fort Sanders area.

The development of housing in the southeastern part of the site should be seen as an impetus to further strengthening the character of the Maplehurst area which elsewhere we recommend extending into the southwestern part of the downtown area. The housing on the site adjacent to the Maplehurst area, and the infill development east of Henley Street can be seen as two parts of an overall neighborhood extension.

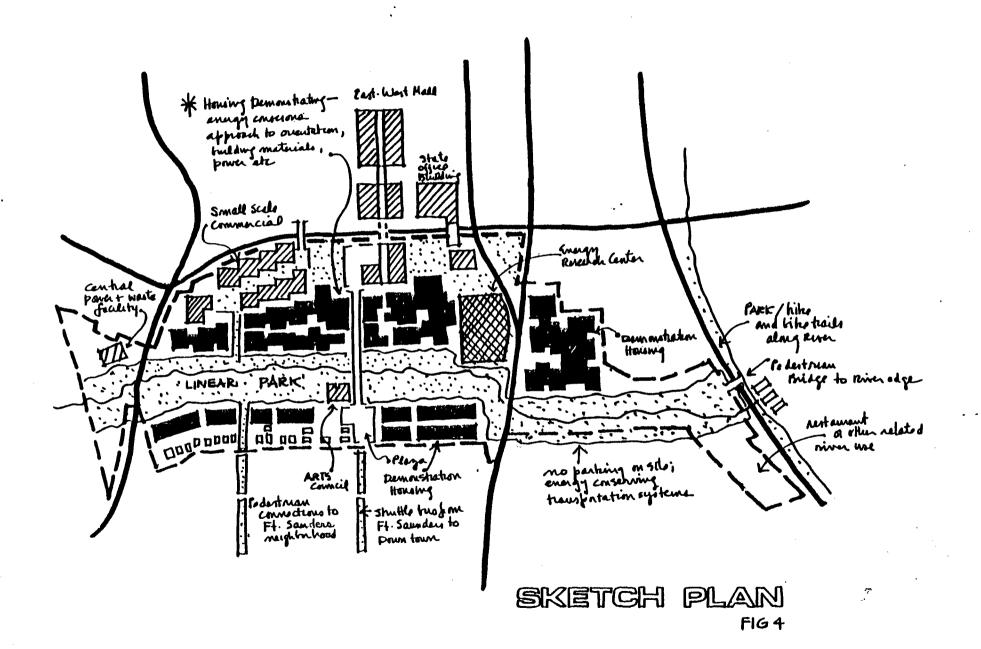
(6) The L&N Station

As previously noted, the L&N Station would serve as the center of one of the two commercial nodes on the site. We believe that this building could become the center of an area combining retail uses with restaurants and entertainment facilities not unlike Ghirardelli Square in San Francisco, linked with the development, the downtown, and Fort Sanders and the University. Since the L&N Station has been proposed for inclusion in the National Historic Register, it is assumed that the structure will be renovated in a way that will maintain the historic integrity of the buildings, and that the uses chosen for the building will not seriously compromise that integrity.

(7) The United States and Tennessee Pavilions

The program accepts the premise that these facilities will remain on the site, and that the United States pavilion will become an ongoing center for energy research. We believe, however,

that within the scope of energy research, as defined for programming the center, should be included such activities as monitoring and evaluation of energy conservation activities in the demonstration new town in town on the site, support for citywide energy conservation and education activities, and a public information area describing energy facilities, energy conservation activities, in the area, and particularly the activities at Oak Ridge, and the TVA achievements and programs.



III C. SITE PLAN/ CRITIQUE OF EXPO PLAN

III C. 1 CHARACTERISTICS FOR DEVELOPMENT OF PLAN

If the goals we have presented, as well as our program for reuse of the site upon completion of Energy Expo '82, are to be achieved, the planning and development of the Expo itself must, in its various components, have certain characteristics. Bearing in mind the program and conceptual plans which have been presented above, the following section presents requirements for a variety of items which must be incorporated into the planning and execution of Expo. Each one must be planned and/or constructed in a particular way, if the needs of the subsequent residual development are to be met.

(1) Configuration of Roadways Adjacent to the Site

The extensive roadway improvements which are being planned to provide access to the site during Expo will be generally adequate for the requirements of the proposed developments on the site after Expo. However, the configuration of the roadway improvements in several areas adjacent to the site is critical if they are not to hinder achievement of the objectives of the post-Expo development.

The relocation and widening of Western Avenue should be done in such a way that will permit future access via a grade separation from the site to areas north of the present location of Western Avenue. Areas to the north at present occupied by rail yards and industrial buildings may be incorporated into the development as parking, with particular regard to the L&N station

development, or in the future as additional housing development. Access should not be limited by a major highway.

Since a distinct objective of the reuse program is the linkage of the development with the Fort Sanders neighborhood, no improvements should be made, such as unnecessary widening of Eleventh Street, which would subsequently create a barrier between the neighborhood and the development. Since it is our understanding that Expo-related traffic is to be kept out of the Fort Sanders area, there appears to be no need for such improvements.

It is also intended that the development of the Expo site be a stimulus to and an integral part of the revitalization of the downtown business area. Toward this end, the improvement of Henley Street must not create a massive visual, physical, or psychological barrier to easy movement between the site and the CBD. Every effort must be made to minimize the impact of this thoroughfare, and to provide easy pedestrian access across it. There are several approaches that may be considered:

- The roadway could be depressed between its intersections with Cumberland and with Western to facilitate pedestrian crossings above it, and to reduce the visual and noise obtrusiveness of the traffic as it passes the site. A depressed roadway would also provide an opportunity to afford below grade services to developments on both sides of the street, both during and after Expo.
- Present plans for Henley Street call for

the addition of a landscaped central esplanade with turn lanes. In view of the topography of the area, the slope could make possible a difference in elevation of the two sides of the street. By construction of the north and southbround lanes at different elevations, the visual width of the street would be significantly reduced, and the integration of the street with landscaping, pedestrian crossings, and other design elements would be facilitated.

- The East-West Mall being developed in the CBD makes possible the creation of a direct pedestrian connection between the site and the heart of downtown Knoxville. The Mall will run from Gay Street across Market Street to Henley Street adjacent to Miller's Department Store, and will contain a variety of offices and stores, as well as the new Hilton Hotel. It is essential that the development of Henley Street make possible the visual and physical extension of the Mall across the street and into the site. If Henley Street remains at grade, a connection might be achieved below grade via the passageway now connecting Miller's to the parking garage across the street. If Henley Street is depressed, the Mall could be extended through Miller's at the Walnut Street level, and pass over Henley Street.
- ◆Continuing to bear in mind the steeply sloping topography, pedestrian crossings with grade separation could be achieved at several other points along Henley Street. One crossing should be provided at the site of the proposed Tennessee pavilion, providing a connection to the United States pavilion. Another could be provided closer

to Summit Drive, to improve pedestrian access to the northern part of downtown, including the TVA buildings.

(2) Parking

. 4

Parking requirements for Expo will far exceed those required for the developments on the site, or in the vicinity of the site, proposed after the end of Expo. The great majority of the parking facilities, therefore, should be developed in such a way that the land and any structures can be readily converted to other uses after Expo. This principle is understood by the planners for Expo.

Some parking, however, in two distinct areas would be of value to future developments proposed as part of the reuse program for the site. These are:

- ◆ Parking to the north of the present location of Western Avenue, which can serve proposed retail and entertainment facilities in and around the L&N Station, as well as possibly housing located in the northern part of the site.
- Parking in the area at present occupied by rail tracks between Neyland Drive and Estabrook Hall, if made permanent can serve both the University and future recreational facilities developed along the riverfront.

Expo plans should provide at least the opportunity to make both parking areas permanent, and usable by residual uses on the site.

(3) Impact on Adjacent Areas

Since all recognize that one of the principal objectives of the Expo is to stimulate improvements in Fort Sanders and downtown Knoxville, considerable caution must be taken in the planning of Expo to ensure that its construction and operation do not inadvertently have a negative effect on those areas. There are a number of specific areas in which this is critical:

- Parking for Expo visitors and employees must be located in areas specifically designated for Expo. This means not only that positive steps must be taken to provide parking, but clear restrictions, supported by local ordinance, should be formulated to prevent the destruction of any part of either Fort Sanders or the CBD through parking. The existence of this intensive short-term use of the land could encourage destruction of old homes in Fort Sanders or small commercial buildings downtown, both of which should be saved for rehabilitation and reuse. Such destruction could easily be the result of a 'laissez-faire' approach to the parking requirements of Expo.
- Expo site services (deliveries, trash removal, etc.) should be carefully integrated into the site with access provided directly from major traffic arteries serving the area. No service access should be permitted to the site from the Fort Sanders area.
- The present boundary of the Expo site in Fort Sanders, along the right of way of Eleventh Street both subjects the neighborhood to more than

necessary visual impact from the activities of Expo (since the Expo perimeter must necessarily be sealed, a barrier would have to be installed along Eleventh Street), and results in the loss of more housing than necessary. We recommend that the site boundary be moved to the middle of the block between Eleventh and Tenth Streets, and that the housing retained along the former street be rehabilitated between now and the opening of Expo.

(4) Vegetation

Tracts on the site between Neyland Drive and Cumberland, and between 11th Street and the railroad yards, generally along Second Creek, contain significant stands of large trees. The bulk of these trees should be retained during Expo, for inclusion in subsequent development on the site. A tree survey should be added to the topographic map of the site, and plans for any Expo site preparation or construction in these areas should be reviewed to ensure that as many trees as possible are retained.

New planting of trees, as well as landscaping generally, should be carried out in the context of the reuse program and plan. Significant planting should be located along Henley Street. Major plants in other parts of the site should be containerized, if possible, during Expo, so that they can be relocated and permanently planted after Expo?

(5) Clinch Ayenue Bridge

After Expo the Clinch Ayenue Bridge will provide an important grade level connection across the site between Fort Sanders and downtown Knoxville. The planning of this facility for Expo should permit the future development of activities, including spaces at the ends of the bridge, which will stimulate future pedestrian movement and activity. It should be possible to achieve a direct connection, as noted elsewhere, between the east end of the bridge and the East-West Mall after it has crossed Henley Street, through the creation of a formal plaza.

Consideration should be given to the development of activities on top of the bridge, such as kiosks and food services, during Expo, which could be allowed to remain as part of the reuse program. The bridge will provide an overview to the passerby of the United States Pavilion as well as the overall devlopment of the site. The design of the bridge should provide the pedestrian with more reasons for using it than simply getting to the other side.

(6) Topography and Second Creek

Between Cumberland Avenue and the Tennessee River, Second Creek should remain in its present channel. Above Cumberland Avenue, the Creek and related water features should generally follow the line formed by the base of the slope from Fort Sanders and the most westerly set of existing railroad trackage. Since the Creek and any related water features will form the spine and a major line of

circulation for both Expo and after Expo development, the planning of this important site element must be coordinated between both phases of planning. Since much Expo investment in this area will be useable after Expo, no work should be undertaken unless absolutely necessary which will require extensive reconstruction after Expo.

In addition to retention of existing trees between Eleventh Street and the railroad yards, as noted above, the existing topography should be protected. Planning for Expo should avoid major alteration of this topography, and should prohibit construction on the particularly steep slopes immediately adjacent to the rail yards. Retention of both trees and topography is important in the future development of a site that will be compatible in scale and character with existing development in Fort Sanders.

(7) Expo Buildings and Building Sites

It is anticipated that a number of buildings, either existing or proposed, will become significant parts of the residual use of the site after the close of Expo. The following comments are directed to establishing the character of each which will make it most supportive of the proposed reuse program:

Miller's Warehouse: Entrances suitable for public use should be developed into the building from both the Clinch Avenue Bridge and from the rail level below. This building can serve well as the operational headquarters for Expo, and is more suitable than construction of a major new building for that purpose. As part of the renovation, the building should be brought to code standards, and provided

with a modern elevator system. A mechanical system consistent with the energy conservation goals of Expo should be installed. Since a program for reuse of this building as a crafts/arts center after Expo is being developed, renovation should be carried out in a manner most susceptible to such reuse.

- Ounited States Pavilion: A detailed program for the reuse of the United States Pavilion has been developed by the University of Tennessee and the Energy Opportunities Consortium, which we have discussed previously. It is essential to the future use of the site, however, that particularly careful consideration be given to the exterior services (storage areas, truck loading docks, etc.) that the center will require. These service areas should not restrict the subsequent connection of the northern and southern parts of the site via Second Creek, or be a potential visual defect of the site as seen either from the Clinch Avenue Bridge or from Henley Street. In addition, they should not interfere with the extension of the East-West Mall across Henley Street and into the site.
- East-West Mall: It is assumed that the East-West Mall will be linked to the site immediately south of Clinch Avenue Bridge. Any buildings on the site during Expo should provide for this connection, and any permanent buildings on this site, or facing a plaza provided for in the reuse program, should be designed to permit conversion to retail use.

- L&N Station: The rehabilitation of the L&N Station should be planned to permit its use after Expo for retail, entertainment, and food service activities. Visitor and service access to the station should permit its subsequent integration into a retail and entertainment complex, designed with the station as centerpiece, at the north end of the site.
- Other buildings: It is understood that structures not suitable for particular uses under the reuse plan should be designed that they can be quickly, easily, and economically removed. It is suggested that as many as possible of these buildings utilize a common building system incorporating demountable modular elements, which would permit their reuse for other functions on other sites elsewhere in the community or region.

(8) The River Edge

Although the Tennessee River flows through the heart of Knoxville, little advantage is taken of this remarkable asset to the community. Expo planning should provide for access to the riverfront, and for activities along it. Wherever possible, activities and structures construction for activities should be planned so that they will be usable after Expo.

(9) Expo Infrastructure

The following discussion deals with three highly important elements of the infrastructure that will be constructed to serve the needs of Expo. Not only

does the construction of infrastructure have a significant bearing on the manner in which Expo will realize its goals as a model of energy efficiency, but will strongly influence the nature of the feasible reuse program.

- Site Energy System: Expo planning should include the creation of a central energy system which would serve the entire site during the exposition and afterwards. The energy system might include a central plan, which could be a major demonstration exhibit in Expo: the plan, and the buildings it serves, could demonstrate the efficient generation and utilization of energy. Distribution from the plan should follow the 'creek spine' of the site via an accessible tunnel.
- Waste Handling System: A centralized solid waste handling system capable of meeting the needs of Expo, as well as projected waste disposal needs of the reuse program, should be provided. The system should provide for removal of solid wastes and subsequent sorting for recycling or use in the energy system for generation of heat or power.
- Outilities: Power, communications, and water lines should run parallel to and adjacent to Henley Street and Eleventh Street, with services fed to the site for individual buildings as required both during and after Expo. Waste lines should run parallel to and be integrated with the Creek and any water features along the central spine of the site. Any utility lines which must run from east to west across the site should be integrated with Cumberland, Clinch, and Western Avenues. No

utility easements should cross any potential building site.

(10) Site Graphics, Street Furniture, Landscaping, Lighting

The image established for the site during Expo, via such elements as site graphics, street furniture, landscaping, and lighting, should be one that can be retained, although modified, after Expo. Since a significant objective of Expo is that of stimulating development in adjacent areas, it is particularly important that the new image of Expo not be lost when the exposition closes. Although most structures will be removed, it is hoped that a large part of the new image, and related attitudes, will be retained, and reinforced by the new development on the site

"And I continue to contend that we better not deal with that acreage down there in and of itself: we have got to deal with it in the context of the rest of the community."

III.C.2 HIGHWAYS

This section of the report provides a description of the present transportation facilities serving the site. Further, it provides recommendations for both roadway and transit improvements to be considered for the term of Expo. It should be pointed out that the City, through its transportation consultant, Barton-Aschman Associates, Inc., has investigated needed transportation improvements in the downtown. Recommended improvements are noted in the report "Downtown Knoxville Traffic Access and Circulation Plan". The transportation recommendations contained herein rely on the information provided in that document and others cited.

A. Existing Facilities and Conditions*

Primary regional access to the proposed Exposite is provided by I-75 and I-40. These two interstate routes serve the central business district of Knoxville and provide connection to the Smoky Mountains recreational opportunities to the south. Ramp connections with

*Source: Downtown Knoxville, Traffic and Circulation Plan
Barton Aschman Associates, Inc.,
September 1977
Final Environmental Impact Statement,
Haworth and Anderson, Inc. March 1977.
Transportation Development Associates,
Inc.

the Interstates provide access to the Broadway/
Henley/Chapman Highway Corridor, serving the
Central Business District and the proposed
Expo site. Additional access to the site is provided by Neyland Drive, along the shoreline
of the Fort Loudon Reservoir. The Alcoa Highway
to the west of the site, the east leg of the
downtown loop and Western Avenue are arterial
streets which will also conduct area-wide
traffic toward the site.

Traffic operation in the downtown area, adjacent to the Expo site, is characterized by congestion in several locations. This is due to high traffic volume and the discontinuities in the overall street system. High congestion locations include:

- Broadway/Henley/Chapman Highway between Jackson Avenue and Blount Avenue
- Gay Street between Wall and Church Avenues
 ▶ Western Avenue west of Henley Street
 In addition, the interchange of I-75 and I-40

experiences severe congestion.

B. Roadway Improvement Plans

Several roadway improvement plans have been proposed. Major highway improvements include:

	<u>Project</u>	Probable Impact
Complete I-640	Complete construction of I-640 between east and west Knoxville via a peripheral routing.	Divert through traffic from I-40 and I-75; reduce traffic substantially at I-40/I-75 interchange.
Improve I-40	Add two to four lanes to I-40; reconstruct and reconfigure several interchanges.	Provide additional capacity to adequately accommodate traffic over next 20 years; eliminate existing bottlenecks.
Construct new bridge over Fort Loudon Lake	Extend Neyland Drive eastward and construct new bridge across lake about one-half mile east of East Leg; extend bridge south to meet Chapman Highway near the city limit.	Relieve north Chapman Highway and Henley Street of substantial amount of through traffic.

Source: Downtown Knoxville, Traffic and Circulation Plan. Barton Aschman Associates, Inc., September 1977

In addition, the City's transportation consultants, Barton Aschman, developed several recommendations for upgrading the downtown circulation system. Generally, these provided for the following improvements:

- Create a one-way Gay-State Street pair.
- Widen Henley Street to incorporate medians and turn bays
- Widen Western Avenue (Henley to RR viaduct)
- Improve Main-Cumberland couplet to the East
- Provide Neyland Drive connection to south CBD.

It should be noted that the above mentioned improvements would eventually be required under normal traffic growth conditions. However, the accommodation of expected Expo traffic will require that these improvements be in place by 1982.

C. Impact due to Expo

It has been estimated that approximately 77,500* people will visit the Exposition on an average day during the peak month. This translates into over 40,000 trip ends per average day, including both visitors and employees. These trips will be distributed over the roadway network throughout the day. Characteristics of the traffic generated include:

- Visitor traffic will generally not peak in coincidence with the peak highway hours (7-9 am and 4-6 pm)
- The Expo facility is expected to be open 12 hours per day.
- The median visit is approximately 8 hours. However, it is expected that some coincidence in arrival time will cause congestion at some locations during the day.

Another consideration is the duration of Expo and the level of activity during its six month term. Estimates indicate that average "design" conditions occur during the months of July and August only.

D. Recommendations

It is recognized that adequate access must be provided to the Expo site, and this access must recognize current traffic demands. However, it is also recognized that the Exposition is of limited duration, and will exhibit peak traffic generating characteristics for less than 60 days. Thus it is recommended that a program of physical improvements consistent with long term transportation needs, augmented with traffic management and "diversion to other modes" strategies be followed. Recommended physical improvements would include those parviously described by the City's transportation consultant. These improvements should be programmed in the five-year transportation improvement program (TIP) such that they may be completed prior to the opening of the Exposition. Since there are a number of substantial projects proposed, and few construction seasons to build them, an extra effort to minimize the disruption of existing traffic during construction is recommended.

Additional strategies to mitigate the impact of Expo traffic could include:

- Continuation of transportation system management (TSM) efforts in the downtown
- Provision of remote Expo parking/shuttle operations
- Provision of special transit services from population centers throughout the immediate region (e.g. West Knox County).
- Provision of traffic management officers during peak periods. (Note: bus strategies are discussed further under main transportation).

^{*} Source: Economic Feasibility of Energy Expo '82, Economics Research Associates, February 1978.

III.C.3 PUBLIC TRANSPORTATION

A. Existing Facilities and Conditions

Public transportation in the Knoxville Metropolitan Area is currently provided by the Knoxville Transit Corporation, owned by the City of Knoxville. In addition, there are seven other carriers that provide service in the Knoxville area. These include:

- The B & C Bus Lines
- The Autrey Bus Lines
- Continental Trailways
- Greyhound
- Several Taxi Companies
- Airport Limousine Service
- School Buses

The Knoxville Transit Corporation presently operates a system of approximately 80 buses providing service on 20 regular routes and 14 express routes. Service coverage includes the City of Knoxville and portions of Knox County. Systems operations include approximately 2.4 million vehicle miles annually and ridership is estimated at 7.5 million passengers per year. Special charter bus service is provided in addition to fixed route operation.

Five of the 20 regular routes currently utilize Henley Street in the vicinity of the site. In addition, five regular routes travel the Cumberland Main one-way pair through the site.

B. Transit Improvement Plans

No current plans for bus service expansions to serve the proposed Expo were identified. The five

year Transportation Improvement program does not indicate purchase of additional buses for fleet expansion.

C. Recommendations

It is noted that nine of the twenty regular transit routes could serve the proposed Expo site without changes in route structure. However, several actions to increase transit potential could be investigated for their feasibility. These include:

- The possibility of entering the Henley Street and Cumberland-Main buses onto the site in order to facilitate the boarding and alighting of the passengers directly at the site (and thus eliminating crossing Henley Street)
- The possibility of re-routing other regular transit route buses during the term of Expo to provide increased transit access to the site.
- The possibility of establishing special transit services throughout the region to provide special transit access to the Expo site (e.g., special Saturday service from West Town Mall to Expo Leave at 8 am return by 5 pm, etc.)
- The possibility of establishing downtown circulation service to provide transit access for fly-in visitors and others staying at hotels, as well as transfers from other fixed transit routes.
- The possibility of establishing or encouraging scheduled or special transit service from the Gatlinburg area to Expo.
- The possibility of operating Expo auto intercept/shuttle lots. This service could use surplus

buses not needed in the base schedule, to shuttle fairgoers to and from the Exposition.

- The possibility of encouraging private bus operators serving the region and estimated draw area, to promote access to Expo by bus.
- The possibility of increasing transit use through ticket pricing incentives and package arrangements.

It is recommended that the above noted potentials be investigated for implementation. Due to the inherent route flexibility of the bus, and the probable off-peak excess capacity of the present fleet. It is estimated that several of the possibilities noted would be achievable at low levels of capital expenditure. This would be a practical way to provide mitigative measures for a project with a six-month term.

Another potential strategy for reducing the use of automobiles for direct access to Expo would be to take advantage of the opportunity that the existing rail line between the Expo site and the Alcoa plant provides. A fixed rail shuttle service between the airport/airport motels and the Expo site could provide an alternative transportation means for people arriving by air and staying either near the airport or downtown. This alternative transit system could be a visible component of the demonstration town and provide a focus on the site of the exposition.

D. Residuals

Due to the flexibility of transit vehicles, any rubber tired vehicle acquisition required could be ultimately utilized by agencies currently providing public transportation services. This would be true of transit coaches, school buses and vans. Operation of a remote parking/shuttle operation would provide the Knoxville Transit Corporation with the experience of operating a Park - N - Ride facility. If experience were satisfactory, potential Park - N - Ride operations serving the downtown might be considered after Expo was over. Any site amenities provided during the Expo period could be utilized elsewhere (e.g., small shelters).

III.C.4 PARKING

A. Parking Demand

The demand for parking spaces during the exposition has been estimated between 15,000 and 17,000 spaces at maximum accumulation. The parking demand may be expected to be from 1/2 to 2/3 of those figures for the two months prior and two months after the peak of the Exposition.

B. Parking Supply

The Knoxville International Energy Exposition staff has identified a supply of approximately 20,000 parking spaces to meet the projected demand. These are noted below:

New Facilities (permanent)

<u>Facility</u>	<u>Spaces</u>		
Henley Street Garage Proposed YMCA Garage UT Garage Blount Garage	800 800 3,200 700		
subtotal	5,500		
New Facilities (temporary)			
Proposed Northern Parking Facility Funland Lot	4,200 1,200		
subtotal	5,400		
Total New Facilities .	10,900		

Existing Facilities (peak weekday)

25 percent of CBD spaces 70 percent UT Spaces less 2,70		
spaces for Expo visitors stayi in dorms	4,700	
Unoccupied Coliseum Garage	2,000	
·· subtotal	8,100	: 8,100
New Spaces by Private Interest	s	1,000
	TOTAL	20,000

SOURCE: Final Environmental Statement Haworth and Anderson, March 1977

C. Supply/Demand Considerations

Review of the location of the proposed parking reservoirs indicate that a shuttle capability will be required to move people from some parking areas to and from the site (e.g. the Coliseum garage - 2,000 spaces - if it is still being considered. Also the Funland and Blount/Baptist Hospital sites). Additionally, it is evident that the parking sites are somewhat scattered throughout the downtown area. This fact in conjunction with the one way street system in the downtown and the discontinuity of streets suggests that a system of signage is a very important element.

An alternative approach to the existing parking plan would be to concentrate on remote intercept lots. These facilities, located and identified along the

approach routes could provide the required parking reservoir while relieving potential congestion in the proximity of the site. As noted earlier, a shuttle system will most likely be required even under the existing plan. Thus, an expanded shuttle system could prove effective with moderate additional incremental cost.

While a total of 20,000 spaces may be available during the summer months of the Exposition, including the peak months, demand estimates for September and October indicate the need for 1/2 to 2/3 of the peak parking space requirement. This fact coupled with the possibility that previously anticipated arrangements may or may not still be valid and other elements such as CBD parking demand changes suggest that an update should be developed.

D, Recommendations

In view of the previous discussion, the following is recommended:

- The feasibility of a system of remote intercept parking lots with shuttle service should be investigated.
- A parking plan update should be prepared clearly identifying the proposed parking supply for both summer and fall.
- A signage program should be developed to aid in the location of available parking.

III D. PARTNERSHIP FOR DEMONSTRATION

The achievement of a successful Exposition, a positive permanent use of the site, and the revitalization of the City of Knoxville is the responsibility of a number of different agencies and organizations. Each has an appropriate role in this process. Some of the information presented to R/UDAT suggests that the roles and functions of each agency are not clear to the public. In addition, some of the R/UDAT suggestions imply organizational responses to be successful. The following section discusses these issues.

1. EXISTING AGENCIES AND THEIR APPROPRIATE ROLES

A. Knoxville International Energy Exposition, Inc. (KIEE)

The KIEE is a private non-profit corporation that has been created for the purpose of organizing and operating the 1982 Exposition. The community has started to confuse the "exposition and its impacts" with the Exposition corporation. That is, it has assumed that the KIEE corporation will itself be the vehicle for positive change in Knoxville both before and after the exposition. This has happened probably because the KIEE board is composed of major business and civic leaders and that board is the most unified representation of the only leadership. To some degree it appears that KIEE has allowed this to happen. That is, the board members have felt a civic responsibility to respond to many of these issues, to form committees of the board to respond to them. This has further gone to create a feeling that KIEE can be responsible for many things other than the exposition.

KIEE cannot and should not be the vehicle for these other community issues. KIEE must focus exclusively on its role of building and running a financially sound exposition. It cannot be a permanent body (must phase out in 1983) and, therefore, should not take on permanent functions.

It is a very difficult task to run a successful international exposition. KIEE must be responsive to the Bureau of International Expositions, the U.S. State Department and a large number of operational issues. It must carry these out in a manner that is based on sound fiscal policy. If KIEE is to succeed in its task, to the benefit of the total community, then the city and community groups must not ask KIEE to assume responsibility for other functions that will draw its attention away from its primary function.

KIEE should be responsible for the following types of issues:

- The development of a sound financial plan for operating and capital expenses of this exposition. KIEE appears to have undertaken this task already drawing on the precedents of other successful expositions.
- lacktriangle The design and construction of all facilities on the exposition site.
- The management and control of parking, vehicular and pedestrian access to the site. Because of the potential danger of community impact in this area, KIEE should not assume that private developers will take care of the parking demand. Random parking facilities will be confusing to the visitor and

will create potential conjestion throughout the city. KIEE must determine the logical transportation patterns and develop a management plan to get parking developed in relation to that pattern. This may require the development of shuttle bus systems by KIEE. KIEE must also be responsible for pedestrian circulation patterns. Large volumes of people walking through the neighborhoods or along heavily travelled streets to reach entrance gates could have adverse effects in the downtown area. The management of these movement patterns must be KIEE's concern.

The development of effective affirmative action policies for jobs created by its own activities. This should include the development of job training programs if necessary.

KIEE should pursue the commitment it has already made to minority employment at every level and every phase of its activities. This includes membership on the KIEE Board of Directors, composition of current staff and consultants. KIEE should require performance conditions similar to federal guidelines in all its construction contracts requiring both affirmative action/minority employment and employment from specified geographic areas. (These would be requirements of any work funded by Federal agencies and should be extended to all work funded by KIEE).

- Maximum reuse of physical elements of the exposition (described in Section II.B.)
- The rigorous application of the energy theme to

all aspects of KIEE's work (described in Section II.A.)

B. Knoxville's Community Development Corporation (KCDC)

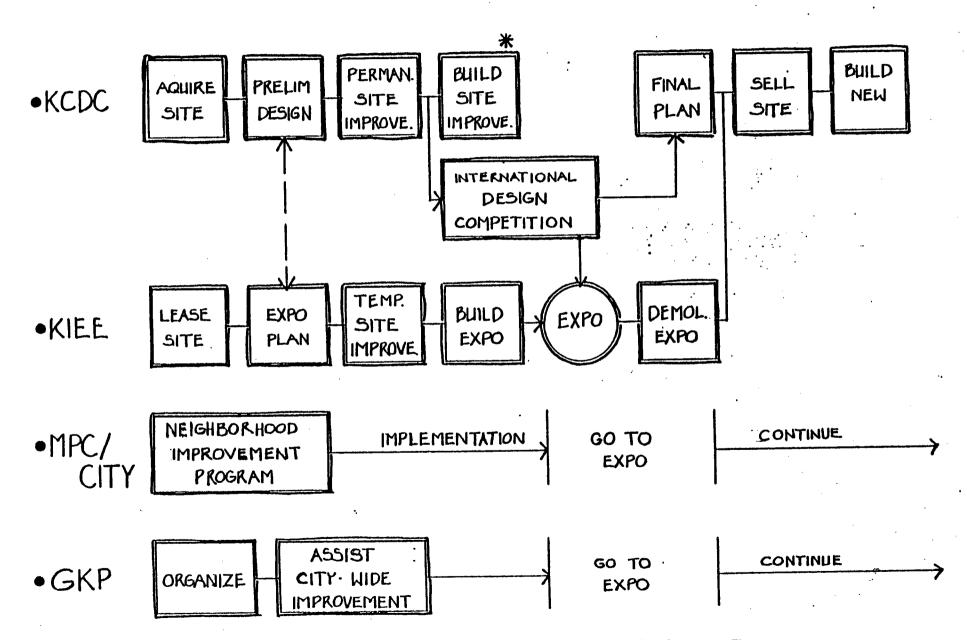
The KCDC is the local urban renewal agency and publishing agency. It is responsible for the development of the lower Second Creek Urban Renewal Plan and its implementation.

KCDC's initial functions seem clear: it is responsible for acquiring and clearing the site. This process has been initiated and a financial plan developed. It is less clear to the general public that KCDC is also responsible for the permanent development of the site - not KIEE. This situation needs to be clarified immediately.

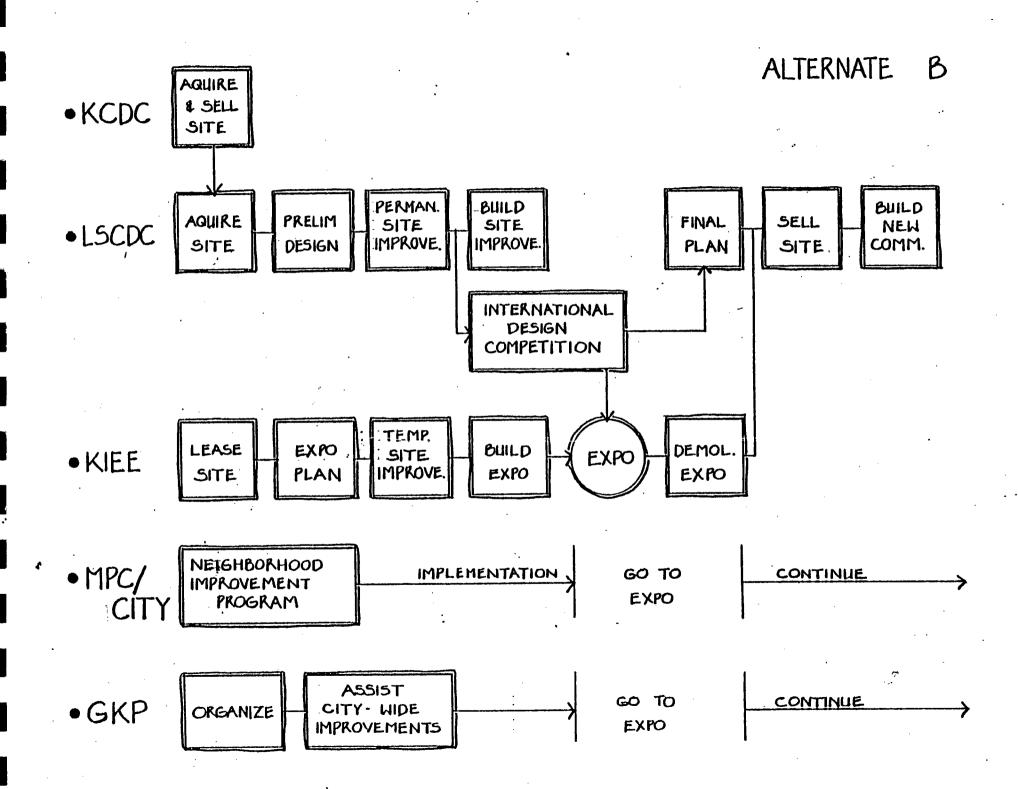
This can be done in one of two ways. The first would be for KCDC to retain its own separate team of consultants to develop a permanent use plan somewhat more detailed that the urban renewal plan. This team could also develop a plan for permanent site improvements to be funded with the HUD, EDA, Interior Department, and ARC grants. The establishment of this team - a separate and different team for KIEE's consultants - would provide a clear and appropriate focus for community input to the permanent development plan.

Once this plan and site improvement program was agreed on, KCDC would enter into agreements with the City to build the site improvements and would provide this permanent site improvement plan to KIEE as a guideline for its exposition plan. (The

ALTERNATE A



* BY CONTRACT WITH CITY



permanent site improvement plan <u>must</u> set the framework for the Expo plan.) After the Exposition is over, KCDC has the responsibility of marketing the land to various private developers in keeping with the permanent plan.

A second alternative is the establishment of a lower Second Creek Development Corporation, <u>described</u> below. Under this arrangement, KCDC would sell land to LSCDC and step out of the picture after the land had been acquired and cleared. Under either arrangement KCDC has no role in the exposition.

C. The Metropolitan Planning Commission and the City of Knoxville

Little attention has been given to the role of MPC or the City in discussion of the Expo, its impacts or reuse. It seems that both have an important responsibility.

MPC and the City do not have a direct role in the Exposition. They should be involved only to ensure that the financial plan will not leave a deficit for this city to pick up and that Expo planning decisions by KIEE are sensitive to edge conditions of the site and adjacent impacts.

MPC and the City should focus their energies on a parallel effort consisting of improvement plans for adjacent areas and the general appearance of the city as a whole. Specifically, MPC should continue and complete its small area plan for the entire Fort Sanders neighborhood. This should be immediately translated into funded programs to improve the neighborhood and help increase home

ownership. The City should commit itself to an improvement program that is substantially complete before 1982. This program should be designed to maintain an economic balance in the area and might consider the use of selective federal programs for elderly or low-income families such as the Section 8 existing or rehabilitation programs for rental housing or the FHA 235 program for new housing. All of these are private and not "public" housing programs. The City might also consider parking and municipal revenue bond issue for mortgage and rehab-finance that would offer lower than market interest rates in inner city areas. Such bond issues have been done successfully in several other cities (Pitts-burgh for example).

While such a program must be developed for Fort Sanders because of its immediate proximity to the Expo site, MPC and City should undertake similar efforts in other inner city areas. In particular, incentives such as the municipal bond mortgage program should be considered for all inner city areas to make them more competitive in attracting population from the suburban areas. MPC and City should also actively involve TVA in an effort to develop energy conservation programs as part of residential rehabilitation programs.

D. Lower Second Creek Development Corporation

Many people in the community are concerned about the permanent benefits of Expo and the permanent use of the site. The lack of a clear permanent development plan appears to be a problem in that many people cannot see what these permanent benefits will be.

Several individuals have expressed the idea that the City and KCDC proceed, on the basis of a very general land use concept and wait to see what development interest comes forward in 1983. This approach seems unsatisfactory because it is so vague and uncertain and because the permanent reuse of the site and revitalization of the innercity are put forward so strongly as the permanent benefits. This approach also seems unsatisfactory because KCDC would be in a position of reacting to private development proposals rather than initiating a specific, community-supported permanent plan.

One way to overcome this problem could be through the creation of a permanent development corporation now. This corporation (LSDCD) would have the responsibility for the long-term development of the site, either through its own efforts or in cooperation with other developers. Such a corporation would have the advantage of being a focus for permanent planning - taking this responsibility from KIEE and KCDC. And by having such a corporation, it would probably be easier to maximize permanent use of Expo facilities.

The existence of such a corporation seems essential to the implementation of the demonstration energy community described above. In addition, it is based on the local precedent of TVA. TVA had and to some degree still has, responsibility for community development among its many functions. TVA would be an important participant in the corporation.

Under this plan the following would occur:

- The LSCDC would be created in 1979. The membership would consist of some important business and civic leaders also on the KIEE board demonstrating their commitment to a permanent plan for the site. It would also consist of selective representation from city and adjacent community areas with representation from TVA. The corporation's board would be small (10-12).
- ◆LSCDC would be selected as developers by KCDC for the entire parcel with an understanding that certain areas would be donated for public use (parks, U.S. Pavilion site, etc.) KCDC could establish a land price now or a land price tagged to permanent development in 1983.
- ●LSCDC would retain its own consultants and develop a permanent reuse plan for the site and a permanent site improvement plan. (See International Design Comp.) This would develop the idea of the demonstration energy community and provide the basis for negotiating federal grants or other financial commitments. If such a plan is to be implemented in 1983, 1980 will not be too soon to start to develop these consultants and detailed development plans.
- In 1983 LSCDC could implement the plan. This would be by instituting some things itself, or by having developers undertake projects with specific energy and design criteria. LSCDC might retain full title to the site and negotiate leases for development so that it could continue to monitor and evaluate and also benefit from long-term increase

in economic values. The lease revenues would pay off its purchase of the site and profits after that could be assigned to other community projects.

All in all, the establishment of the LSCDC would seem to offer many advantages to the current process and to the permanent implementation of an innovative plan for the site.

E. The Greater Knoxville Partnership (GKP)

Throughout our discussions it has been clear that there is the need for one other organization. The Exposition is referred to as the catalyst for long-term community improvement. This has raised the hopes of inner-city neighborhoods, businessmen and other interests. There is uncertainty, however, because no one knows who is responsible for this long-term achievement. Some look to KIEE to fill this function. This seems inappropriate.

It would seem appropriate to create a new civic organization that is a partnership of community/business/government interests: the Greater Knox-ville Partnership. The purpose of this organization would not be related to Expo or the specific development of the site. It would be a permanent civic organization responsible for the continuing improvment of Knoxville. It would focus on community problems and be a permanent place for the dialogue between business/government and community to continue once the Expo has begun. Such organizations exist in other cities and have been very successful - Central Atlanta Progress and the Greater Philadelphia Partnership are two such efforts.

Prior to Expo, GKP would take the responsibility for getting Knoxville in presentable shape for visitors (community image), giving support to inner-city neighborhood improvements initiated by MPC/City, and creating in the development of minority/low-income job programs as a general support to the Expo effort. GKP could become the community "conscience" for energy based decisions on all community efforts. After Expo, GKP would continue the momentum into other specific programs for the revitilization of Knoxville.

F. The International Design Competition

As part of the international promotion of Expo '82, there should be an international design competition for the plan for the permanent use of the site. Such a competition would bring international attention to the theme - energy - and its application for architectural and urban development. To be successful, the competition must be based on realistic ground rules about the site and development opportunities in Knoxville. This information would be produced by the consultants to either KCDC or LSCDC who develop the preliminary permanent plan and site improvements.

Such a competition would require sponsorship by the AIA and TVA. It could be organized with KIEE's support and endorsement. The competition would best be held in two stages. An open competition held in 1980 with a limited number of finalists selected for a second stage in 1981. The final plan could be exhibited in 1982, and all competitors united to attend an international conference on energy,

architecture and urbanization to be held in conjunction with the exposition. The time is available for the competition and it would bring early international recognition to the importance and seriousness of Knoxville's goals.

E. AFTER EXPO: BROAD COMMUNITY IMPACTS

Although the central focus of the R/UDAT report up to this point has been on the manner in which the Expo site will be developed after the end of 1982 Exposition, the impact of the reuse of the site on surrounding areas, the City of Knoxville, and the region as a whole is an area of almost equal importance. In this section we discuss the question, first with regard to the Central Business District, then with regard to the Fort Sanders area and other inner city neighborhoods, and finally with regard to the Knoxville region.

1. Central Business District

A principal objective of Expo, which has been carried through in the development of the plans for reuse of the site, has been the revitalization of downtown Knoxville.

- a) The Present Situation: The decline of down-town Knoxville, at best stabilized but not reversed by major efforts during recent years, has been cited by political leaders, business people, and community residents. This decline is typical, unfortunately, of the business districts of small and medium-sized cities around the country. In Knoxville, we find a number of factors contibuting to the pattern:
- Loss of activities to suburban competition: extensive development of commercial activities, including both retail and office facilities, in suburban areas has significantly harmed the

economic base of center city. The opening of the West Town Mall, in particular, has drawn large amounts of business away from the city to the suburbs. The one major department store in downtown, Miller's, does significantly more business in its West Town Mall branch than in its central city operation. Even in the office area, only half of the new office space constructed in the area during the past decade has been constructed in the CBD; of this construction, nearly 50 percent was accounted for by the United American Bank Building.

- Loss of inner city population: at the same time as suburban opportunities become more attractive to center city businesses, the population, was declining drastically. Between 1960 and 1975, the population of the ring closest to the CBD, with the exception of Fort Sanders, declined by nearly 50 percent, from approximately 30,000 to 16,000. Although most inner city areas in most cities are losing population, this is an exceptional decline; as a result, the massive population shift, paralleling an economic shaft, made retailing in the Knoxville CBD less and less attractive.
- Obstacles to redevelopment: the sluggish market demand, created by the combination of population loss and suburban competition has been exacerbated by the difficulty of private redevelopment in the central city; with few exceptions, vacant parcels are small, in scattered ownership, and as often as not in use for parking lots on which the

viability of the remaining businesses may well depend. The costs and difficulties of assemblage, as well as those of providing parking, in the context of the uncertainties of the market, make redevelopment virtually impossible. It is not surprising that the major development to take place in recent years has been in two sectors; government, such as the new TVA buildings and the City-County Complex, and banking, as shown by the United American Bank and the First Tennessee Bank developments.

- b) Potential effects after Expo: There is no certainity that either Expo, or the reuse of the Expo site after 1982, can significantly revitalize the Knoxville downtown. In addition, of course, to the potential intangible benefits, in terms of publicity, visibility, and the like that may be derived from the proximity of Expo to the downtown, there are a number of potential concrete benefits from the after Expo reuse plan:
- creation of a node of activity at the L&N station capable of bringing substantial numbers of people into the downtown area;
- increasing the number of families and individuals in close proximity to downtown, all of whom are potential users of downtown facilities and services; and
- increasing the market demand for downtown activities, and increasing the economic feasibility of downtown infill development and reuse activities.

The first two benefits will emerge directly from the reuse plan. The L&N station retail-entertainment-restaurant complex should attract people not only from inner city areas, but from West Knoxville and a variety of suburban areas; use of the complex is likely to be substantial during evening hours and weekends, as well as by office workers during weekday hours.

The development of high density housing on the Expo site is only the first in what must be a series of steps in increasing the size of the population living adjacent to downtown. In and of themselves, the number of families likely to be housed on the site will not be enough to make a significant difference to the level of business activity in downtown. If, however, residential development continues to take place, including new high density housing in the Summit Hill and Maplehurst areas, as well as other potential development areas at a greater distance from the CBD, the potential demand for retail trade and services could increase significantly.

It is the increase in central city housing and population, as well as the creation of nodes of activity in the center city which, if effectively planned for and implemented by the City of Knoxville and the many other bodies directly connected, which could gradually begin to bring about a settlement pattern in the community that would be in keeping with the goals of energy efficiency to which the Expo is dedicated. It must be stressed, however, that even given the most enlightened reuse plan for the site, the

changes desired by the Knoxville community will not take place without systematic action by the community.

Directions for action

If the city, and the CBD in particular hope to obtain the potential benefits from the creation of the new facilities on the Expo site, active steps will have to be taken by public and private agencies and organizations. The basic realities of suburban competition will not be changed by themselves; the increase in downtown population and activity at most make possible an increase in demand for CBD facilities. In the absence of a significant redirection of activity from the suburbs to the central city, it is unlikely that increased demand will be enough to have any visible impact on downtown Knoxville.

Development policies in the suburban counties ringing Knoxville, as well as by the City of Knoxville, have furthered suburban commercial development, most notably along Kingston Pike to the west of the inner city area. As noted, West Town Mall, in that area, has been the largest commercial development in the area, and has been responsible for diverting substantial amounts of business from the CBD. At present, there has been extensive discussion and planning of comparable suburban shopping facilities in other locations. Development of additional regional shopping malls in suburban Knox County will effectively remove the possibility of major commercial development in downtown Knoxville for

the foreseeable future, beyond the modest increment likely to be associated with the L&N station redevelopment.

Despite what some real estate developers may argue, it is more and more widely held that there is no inherent right to develop major facilities such as regional shopping malls, particularly where their development can be demonstrated to cause severe harm to existing communities. If the process of increasing suburban sprawl, which has contributed so significantly to center city decline, is to be slowed, and eventually stopped, the first step is that of imposition of land use controls in outlying areas capable of harnessing development, particularly commercial - retail and office - development likely to compete directly with downtown revitalization activities.

At the same time, the City of Knoxville, working through public agencies such as KCDC and MPC, and through the private agencies we hope to see come into being such as the Greater Knoxville Partnership, must work aggressively to bring about downtown development activities. Development of the residential quarters in Summit Hill and Maplehurst, as proposed in the Redevelopment Plan of the Center City Task Force, should be planned to take place during the 1980's, so that 1,000 to 1,500 new units of housing should be in place in areas adjacent to downtown Knoxyille by 1990. This is particularly important, since not only will center city housing improve the economic climate for the downtown, but, to the degree that a reasonable amount of this housing will be accessible to University of Tennessee students,

it will begin to relieve some of the pressure on the Fort Sanders area, to increase the possibilities of major upgrading of that area, as we discuss below.

Finally, through the work of the city and the GKP, aggressive promotion and fostering of new office and retail development, as well as rehabilitation and reuse of existing buildings, should be carried out. We recognize that at present market demand is limited, although not entirely absent*. To the degree, however, that the ancillary activities discussed above take place, and inner city housing development, as well as regional growth, increase demand for center city facilities, it is essential that no obstacles are placed in the way of the demand being met in the CBD, and that such obstacles as exist are removed.

2. Fort Sanders

It is arguable that the principal objective of Expo with regard to Fort Sanders has been defined not to improve that neighborhood, but to refrain from doing it harm. A further objective that has been enunciated as an aim of the reuse program

for the site is that of bridging the "gap" between Fort Sanders and downtown Knoxville. We are inclined to see the latter goal as based on a misperception. Specifically, there is no significant gap between the two at present, since access via both Cumberland Street and the Clinch Street Viaduct is easy; it is, instead, a matter that there is no reason why a resident of Fort Sanders would be likely to go to downtown, except on isolated, unusual occasions. The same is true of the UT community, whose needs appear to be generally well served by the Cumberland Street "strip", an area which may well generate more retail volume than the CBD. Given a sensitive reuse plan, at such time as downtown Knoxville contains activities and facilities . capable of attracting Fort Sanders residents. they will come.

The manner in which the Expo site is reused is likely, however, to have considerable impact on Fort Sanders. It contains at least the potential for substantial enhancement of the quality of life in this area, which today is victimized by a series of physical and economic pressures, largely triggered by its proximity to UT. These can be characterized as follows:

● Strong pressure from students for housing creates pressure to subdivide older housing and replace single family houses with apartment buildings.

37

^{*}The ERA study conducted for KCDC and KIEE suggests that there is some ongoing market demand, particularly with regard to office space in the Knoxville CBD. It is our belief that effective marketing and site selection could generate activity in this area during the period immediately after Expo.

- Economic pressure on land raises house prices beyond levels supportable by middle income homebuyers discouraging owner occupancy and increasing land speculation.
- Increasing housing costs displace older residents, and encourage overutilization and overcrowding of housing stock.
- ◆ Central location and high population density increase traffic congestion and parking problems.
- ◆ Age of housing coupled with speculative/transient ownership and occupancy patterns encourages deterioration of housing.

In essence, the neighborhood, overwhelmed by the pressure of students from UT, is caught in a vicious spiral of prices, speculation, crowding, and deterioration. As a result of their speculative nature, the majority of the new apartment buildings are of modest quality, rapidly become crowded themselves, and exacerbate, rather than relieve the situation. At the same time, the continued encroachment of multifamily housing into the area is gradually undermining the historical character of the community.

The beginnings of a solution to the problems of Fort Sanders are completely interlaced with the two issues of the housing of UT students, and the provision of additional housing in the center city generally. There are today 28,000 to 30,000 students at UT, of whom approximately 8,000 live on campus, and between 3,000 and 5,000 live in

Fort Sanders (no one really knows). As many as 15,000 UT students live elsewhere in the Knoxville area; although this number includes many living with parents or other family members, it includes a large number living elsewhere on their own, and commuting to the campus. The off-campus student population, in our judgment, represents a significant potential market for new housing in and around center city (it wasnoted that a more than negligible part of the occupants of the new Townview housing in Mountainview are UT students); given the price escalation in Fort Sanders, it is likely that new housing would be both price and quality competitive, without any need for subsidization*.

At the same time, we have identified areas for as many as 2,000 new housing units within or adjacent to downtown Knoxville, including:

- 500 or more as part of the Expo site reuse program
- 500 in Summit Hill
- 250 or more in Maplehurst
- Substantial numbers potentially available through conversion and reuse of center city buildings, including the upper floors of buildings now used for

^{*}We do not suggest that all 15,000 students are potential candidates for center city housing; indeed, if that were the case, the strategy proposed here would be unfeasible. The action demand, however, may be as much as 5,000 students.

retail on the ground floor only.

Substantial acreage north of the Expo site, including possibly the railroad yards north of the site, Western Avenue immediately below the Interstate, or Grand Avenue *.

Housing should be constructed in these areas in a manner to manimize student demand for new housing. The objectives would be threefold:

- To accelerate the increase in center city population through increasing the center city student population.
- To provide sound housing for students.
- To relieve the pressure created by student housing demand on the Fort Sanders area.

The development of this housing should be carefully phased in increments of 300 to 500 units, so that housing production does not seriously exceed demand. At the same time, it is necessary carefully to monitor continued demand levels, crowding, and prices in the Fort Sanders area. At such time as evidence indicates that demand pressure has significantly abated in the Fort Sanders area, it would be appropriate

for the city to undertake a significant program to restore the residential character of the area, possibly including:

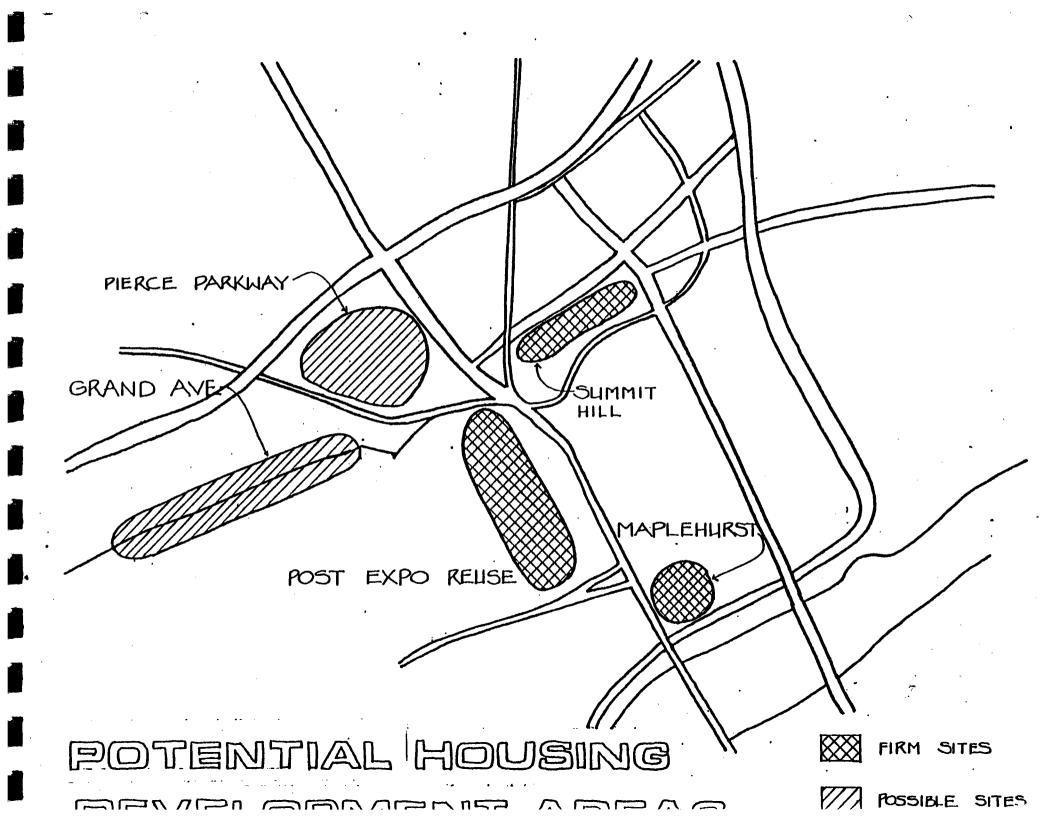
- Significantly reducing permissable zoning densities.
- Regulating conversion, but encouraging reconversion of units; e.g., from three to two, or one, unit structures.
- Strict code enforcement on absentee owned structures.
- Incentives, possibly including low interest loans, for rehabilitation activity.

This is not a short-term program, but one that could easily require as many as ten years to be carried out. The implementation of the proposed reuse plan for the Expo site, with its substantial housing increment as well as its link to downtown, would be an important element in such an undertaking.

3. The Balance of the Inner City

Another issue that has been raised is the effect of Expo on other inner city neighborhoods in Knoxville, including areas such as Mechanicsville, Beaumont, and Fourth & Gill. It is difficult, however, to identify specific effects, either positive or negative, that are likely to be readily apparent in these neighborhoods, either as a result of the conduct of Expo or the

^{*} These sites have not been investigated in detail. They are mentioned here only as possibilities to consider.



implementation of the reuse plan. The apparent physical proximity of these areas to the Expo site is misleading, in that significant barriers, particularly Interstate highways and railroad lines, effectively separate them from the site and from most direct impacts.

To say this is not to underestimate the very real problems facing these neighborhoods, all of which are seriously deficient, particularly Mechanicsville, in terms of housing quality, infrastructure (street quality, curbs, gutters, public open space) and public services. There is, furthermore, the very real possibility that needs in these areas are not, and will not be during the next few years, addressed by city government. If this is true, however, it is debatable whether it can be attributable to Expo. In the same vein, it was noted that the process of "gentrification", or the pressure on inner city housing stock by affluent households, may be beginning in the 4th & Gill area, if not elsewhere (this is very different from the pressures being experienced in Fort Sanders). Again, it is difficult to draw a connection between this and Expo. In the event that Expo is successful, and results in significant economic improvement in the community, these pressures may increase. We urge the city to work with neighborhood organizations to monitor such changes, and if appropriate, undertake activities to enable less affluent households to remain in their communities and benefit from upgrading of their neighborhoods.

As presently constituted, the existence of the aforementioned barriers also precludes these neighborhoods from benefiting from Expo, or from the reuse of the site. In the event that the reuse of the Expo site triggers a revival of housing and commercial activity in center city, it will then become essential for the city to remove these barriers to the degree possible, so that these neighborhoods will be able to develop links to downtown Knoxville, to take advantage of increased shopping and employment opportunities, and to become more attractive for appropriate redevelopment and housing construction activities.

4. The Regional Context

There is little question that the region surrounding Knoxville will be affected by Expo; during the six-month period from March 31 to October 31, 1982, the demands of visitors and tourists will affect the highway system, as well as the available hotels, motels, campgrounds, and in Knoxville, parking areas. At the same time, the region can anticipate benefits, both in terms of the employment provided before and during the Expo*, and, it is hoped, in the form of economic growth and activity triggered by Expo. Although hardly certain, such an effect could well take place.

These effects would be the same, of course, for any major exhibition, construction project, and the like; what we must ask is whether the unique

and significant aspect of Energy Expo 82, namely the drawing of national and local attention to the issue of energy, will also have some significant effect on the region in which it is taking place. Put differently, will the future of the region reflect the impact of the increase in awareness which is at least part of the purpose of Expo 82?

If Knoxville is to become the energy capital of the world, in the way in which we have proposed the term be used, it is hoped that the political and civic leadership of all parts of the region will share in this activity - implementation of energy conservation measures, energy education, all of the many steps which can be carried out toward that end.

Beyond this, however, the presence of the Tennessee Valley Authority in this community and region provides a particular opportunity for the region as a whole. One can imagine the facilities and activities of TVA, distributed across the area, as a regional "Expo", which could take place simultaneously and continue after the six month Expo in Knoxville had come and gone. By focusing attention on the unique energy resource and history of the region, a permanent contribution could be made.

Finally, perhaps the most significant issue in this regard is that of the future settlement pattern of the area; will the region continue to grow in a casual, decentralized pattern of sprawl, which is inherently and extremely wasteful of all energy resources, or will the region

reappraise its patterns of growth and settlement. and begin the process by which a more compact, energy efficient, pattern can be achieved? In many ways, the manner in which commercial development is controlled is a crucial test of such a resolve; if Downtown Knoxville is to be revised, it cannot take place only at the behest of the City of Knoxville and its concerned citizens -- people outside the city must play a part, by redirecting growth back toward the center city. To do so is not likely to be the most convenient thing for suburban local officials, but it is likely to be the right thing. In the long run, the revitalization of central Knoxville will be an event that will benefit the entire region.

"Expo is overshadowing the fact that this is a public redevelopment project. There is a profound distrust of the whole decision making process that's taking place----and right now there has been, to the best of my knowledge, no public process of programming for the residuals of Expo and that is a process in which I think there could be public participation. Not in planning for Expo, but in planning for the redevelopment that will take place after Expo."

III F. RESEARCH/ACTION: U.S. PAVILION

It is essential that residual use plans for the U. S. Expo '82 Pavilion fit the concept of a town-in-town demonstration experiment in energy efficient urban living. Current specifications call for use of the Pavilion exclusively as an energy-related research unit to be operated by the Energy Opportunities Consortium. While basic research should certainly be a part of the residual use function of the U. S. Pavilion, other functions are equally important if the broader issues related to energy-efficient education and public service are to be addressed.

Specifically, we suggest that the Pavilion house on a continuing basis the following functions: (1) an energy aid clinic that would provide assistance to citizens on energy related problems; (2) a community energy education center; (3) an energy policy studies institute; and (4) an energy museum.

In keeping with these multiple uses, the residual center should be the Energy Efficient Education and Research Service Center. The center should have a strong linkage with TVA, UT, KC, ORNL and with other related non-profit community service agencies interested in energy efficiency and energy policies. The center should serve the entire TVA region and should establish a linkage with agricultural extension agencies throughout the TVA region.

Given its location in the town-in-town demonstration experiment in energy efficient urban living, one of the activities of the research component of the center would be to monitor, assess, revise and develop energy efficient means for operating town-in-town. Town-in-town would, so to speak, be the laboratory for the urban research arm of the center.

CONCLUSIONS.

Symbols express, articulate and participate in the reality they represent. Authentic symbols represent truth. Inauthentic symbols represent deception.

Truth or deception: put starkly, that is the choice humankind confronts as we face the challenge of energy in relation to habitat, work and life-style in the closing decades of the twentieth century.

The city has long been a symbol of human-kind's capacity to cooperate in fostering and preserving a habitat enhancing human satisfactions, reducing human frustration, and liberating human creativity. The city, the architect's supreme creation, and the planner's major challenge, is the preeminent symbol of civilization.

Can the city survive? Can civilization survive? Rather suddenly of late, we have recognized that these are not fanciful questions.

A demonstration town-in-town that would be energy efficient and ecologically sound would be a powerful symbol for humankind in the critical decades remaining in the twentieth century.

If Expo'82 can assist in the creation of that powerful symbol, can nurture the cooperative spirit and hope that will give birth to that symbol, then Expo '82 may not have been a success only according to the criteria of attendance, financing, etc., normally used to assess such projects, but will indeed have been a success for humankind.

But given the radical energy issues facing humankind today, an international energy exposition that trades on the need for new energy policies simply to achieve an ordinary success, but refuses to make a true commitment to ways of actually addressing the energy crisis our citied civilization confronts will, in fact, experience a deceptive success, and ironically may become the symbol of humankind's pride and folly.

In challenging Knoxville's citizens to think big about the symbolic significance of Expo '82, we are only requesting that the theme adopted for the exposition be given its due. Energy can be treated lightly in today's world only at our own peril--and at the peril of civilization as developed in our citied traditions.



WHO'S WHO: R/UDAT

J. J. CHAMPEAUX, AIA -- TEAM CHAIRMAN

An architect/urban planner from Lake Charles, La., Joe headed his fourth R/UDAT study in Knoxville--others were St. Louis' Forest Park, Jersey City's Liberty State Park, and Wichita Falls, Tex. He received his B. Arch. degree from Tulane and his masters in city planning from Rice. From 1968 to 1972, Joe served as city planning director of Lake Charles. His firm has been involved in architectural/urban design projects in several southern cities and in Buenos Aires. Recently, Joe was named to address the U.S.-Japanese seismic design conference in Tokyo this May.

JOHN ANDREW GALLERY

An architect/urban designer/planner, John is currently Philadelphia's director of housing and community development. He was previously acting dean of the University of Texas School of Architecture and Planning in Austin and director of the university's graduate program in community and regional planning. John gained extensive exposition experience while serving as coordinator of physical development and later as executive director and vice president for development of the Philadelphia 1976 Bicentenniel Corporation. A native of Boston, John earned his B.A. (cum laude) from Harvard and his M. Arch. from Harvard's Graduate School of Design,

DAN M. GATENS

A transportation specialist from Boulder, Colo., Dan has been involved in a wide range of analytic studies on transportation alternatives, operations, and impact of transportation systems, development of parking programs, and strategies for implementation—all useful to R/UDAT. As vice president of Transportation Development Associates, Dan has provided transportation planning services to commercial and recreational developers in several western states. He is a civil engineering graduate of the University of Washington where he earned his masters degree in transportation planning.

PERCIVAL GOODMAN, FAIA

A distinguished New York City planner/architect/ humanist/author/educator, Percival has designed buildings in 13 states, has written numerous articles on art, architecture, and planning, and has taught at Columbia University's School of Architecture and Planning since 1947. He received his professional education at Ecole des Beaux Arts in Paris and established his architectural practice in 1936. His planning studies include Breakthrough To The Hudson (covering 30 miles on the Hudson from Yonkers to Peekskill); Manhattanville; Welfare Island; Queensborough. In addition, Percival has designed "futuristic" projects ranging from City of Efficient Consumption (1933) to the Double E (1976), published into a book recommending ways of planning for a world with limited resources and expanding populations.

FRANK S. KELLY, AIA

A Houston architect/urban designer, Frank is principal in charge of design for Sikes, Jennings, Kelly. Before moving to Texas, he spent several years—from 1967 to 1970—on the faculty of the University of Tennessee School of Architecture. Frank has designed projects that include programming, planning, architecture, interiors, and other large—scale commercial works. Before starting his own partnership, he was with 3D/International Houston and Omniplan / Architects Harrell & Hamilton. Frank also has served as consultant to the National Endowment for the Arts and as chairman of the National Council of Architectural Registration Board's exam committee design section.

ALAN MALLACH

An economic and social planner in Philadelphia, Alan is president of Alan Mallach Associates, a consulting firm with offices in Trenton. His work has ranged from economic planning and impact studies to development of federally assisted housing for nonprofit community groups. He was previously research director for the New Jersey County & Municipal Government Study Commission, assistant professor of planning at New Jersey's Stockton State College, and director of program development for the New Jersey Department of Community Affairs. He is the author of Economic, Fiscal, and Social Assessment Handbook, and Housing & Suburbs: Fiscal and Social Impact of Multifamily Development, as well as articles on housing, zoning law, and economic impact analysis. He received his B.A. from Yale. In 1977, Alan participated in the Liberty Park R/UDAT in Jersey City.

PETE McCALL

An editor for the American Institute of Architects in Washington, D.C., Pete joined the R/UDAT after coming to Knoxville to cover "After-Expo" for AIA. No stranger to Knoxville, Pete attended the University of Tennessee here and in Chattanooga. He was a reporter for a Chattanooga newspaper before going to Washington as press secretary to Rep. E. LaMar Baker (R-Tenn) in 1970. He was a government public relations specialist and editor of the Bicentenniel News Service before joining AIA two years ago as editor of its newsletter, MEMO. He also edits a community newspaper on Capitol Hill.

PETER ROTHSCHILD

A landscape architect/environmental planner in New York City, Peter is partner in Quennell/Rothschild & Assoc. He was formerly a visiting lecturer at England's University of Newcastle-on-Tyne and assistant professor of landscape architecture at the University of Oregon. Since joining Quennell in 1970, he has directed preparation of environmental impact studies for new communities in California and Georgia and for the 3,800-mile-long Canada Natural Gas Pipeline. Peter received his B.A. in architectural science from Harvard and his masters from Oregon in landscape architecture,

WHO'S WHO: THE HUMANISTS

Dr. Charles H. Reynolds (Ph.D., Harvard) is associate professor of religious studies at UTK. His special field of interest is religious ethics, and at present is serving as editor of Journal of Religious Ethics.

Dr. Michael J. McDonald (Ph.D., Pennsylvania) is associate professor of history at UTK. He is about to complete a book on the orgin of TVA in the Norris Region and is working on a book on the history of modern Knoxville.

Dr. William Bruce Wheeler (Ph.D., Virginia) is associate professor of history at UTK. He is presently completing a book on pre-industrial American cities and is working with Dr. McDonald on an economic history of modern Knoxville.

Dr. William MacArthur (Ph.D., Tennessee) is director of the McClung Collection of the Lawson-McGhee Library. He has recently completed "Knoxville's History: An interpretation" in the East Tennessee Historical Society's Heart of the Valley: A History of Knoxville, Tennessee (1976).

Dr. Riggins Earl (Ph.D., Vanderbilt) is assistant professor of religious studies at UTK. His special interest is in social ethics and is currently a Lilly Foundation Fellow.

Dr. Ferdinand Alexi Hilenski (Ph.D., Tennessee) is assistant to the dean, College of Liberal Arts. One of his primary interests is the injection of humanistic considerations into public policy decision-making. He has recently completed an essay on Knoxville as seen in literature.

Dr. Marian Scott Moffett (Ph.D., Mass. Institute of Technology) is assistant professor of architecture. Her chief interest is architectural history.

The Rev. Reynell Parkins (J.D., New York University) is professor of architecture at UTK and is director of the Housing Research Center of the College of Architecture.



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