

Comprehensive Plan

Including 1988
Update



**oak
ridge**
Tennessee

RESOLUTION

WHEREAS, with increases in telecommunications technology, the demand for additional telecommunication tower and antennae sites, is greatly increasing; and

WHEREAS, as such towers and antennae can have a significant visual impact on the City skyline, proposed locations need careful review; and

WHEREAS, Section 6-403 of the Zoning Ordinance requires that the Board of Zoning Appeals must approve all such towers which exceed maximum height limits, with the exception of towers proposed in Zoning Districts O-2, P, B-2, IND-2, and E which do not have height limits; and

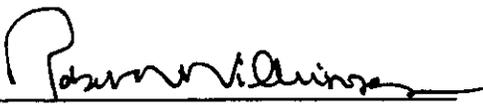
WHEREAS, the Oak Ridge Regional Planning Commission held a public hearing on this amendment on February 27, 1997, and subsequently adopted said amendment, and is recommending ratification of said amendment by City Council.

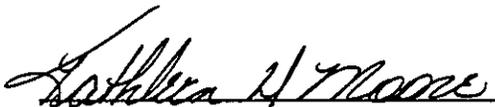
NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCILMEN OF THE CITY OF OAK RIDGE, TENNESSEE:

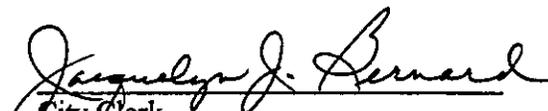
That the Comprehensive Plan of the City of Oak Ridge is hereby amended by adding new Policy L-21 (attached) to the Section titled "Urban Design and Environmental Protection."

This the 24th day of March 1997.

APPROVED AS TO FORM
AND LEGALITY:


City Attorney


Mayor


City Clerk

AMENDMENT TO ADD POLICY L-21 TO OAK RIDGE COMPREHENSIVE PLAN
Add new Policy L-21 to the section titled "Urban Design and Environmental Protection".

With increases in telecommunications technology, the demand for additional telecommunication tower and antennae sites, is greatly increasing. Section 6-403 of the Zoning Ordinance requires that the Board of Zoning Appeals must approve all such towers which exceed maximum height limits, with the exception of towers proposed in Zoning Districts O-2, P, B-2, IND-2, and E which do not have height limits (in R-4-C any tower over 120 feet high would go to the BZA).

POLICY L-21: Proposals for new tower locations taller than the height maximum permitted in the tower site zoning district should be evaluated against the following criteria:

1. First priority for location of new towers shall be in non-residential areas.
2. Consolidation or co-location on or next to existing public and private tower sites should be a priority for where to locate new towers; arguments against co-location on existing towers and existing sites should be based on more than merely economics.
3. New towers should be set back from existing residences or from the center of vacant subdivided residential lots by at least two feet for each one foot of excessive height above the maximum height allowed in the zoning district where the tower is located.
4. It is the provision of the service that must be allowed, not the siting of the facility in a particular location (e.g. alternative siting studies may be required by the City).
5. Minimize visual impacts of the tower through:
 - a. Choice of tower height and location should be designed to minimize the visibility of the tower from long distances.
 - b. Screen from public view by means of land forms and vegetation, as much as feasible.
 - c. Avoid bulky towers, like lattice-type towers, unless this is offset by other advantages like co-location.
 - d. Avoid sites where FAA requires bright colors.
6. Applicant shall present master plan for service coverage of the entire community, so that the tower being permitted can be reviewed in the context of the applicant's overall program.
7. Replacement towers shall meet the standards of Policy L-21, although exceptions may be necessary when service area coverage reductions require additional tower height.
8. For towers replaced under existing licenses, the current height is grandfathered.

DEVELOPMENT IMPLEMENTATION MEMORANDUM
97-39

DATE: March 19, 1997

TO: Robert T. McDaniel, City Manager

THROUGH: Paul Boyer, Assistant City Manager *MB*

FROM: William E. Issel, Development Implementation Director

RE: **TOWER AMENDMENT TO THE COMPREHENSIVE PLAN**

An item for the March 24, 1997 agenda of City Council is an amendment to the Comprehensive Plan which will give the Board of Zoning Appeals (BZA) additional criteria to use in reviewing future requests for communication towers in Oak Ridge. The tele-communications industry is rapidly expanding and changing and the City can expect additional requests for new towers in the future. Therefore, the Planning Commission and staff are trying to position the City to be prepared to review these proposals and guide them into the most aesthetically and visually acceptable locations on the Oak Ridge skyline, while still allowing the companies to provide their important communication services.

The criteria include incentives to consolidate towers and co-locate on existing towers as a first priority unless new sites are the only way to serve their customers. Another criteria steers the towers toward non-residential areas first and, if it is necessary to locate in a residential zone, it provides for setbacks from houses and subdivided vacant lots proportional to the height of the tower. It includes methods for minimizing the visual impact and includes a requirement for the applicant to show how the tower fits into the context of their master plan for serving all of Oak Ridge. It provides that replacement towers should meet these same standards unless service area coverage is impacted and it grandfathers the height of existing towers being replaced, to lessen the need for new sites. Finally, the Commission and staff discussed the value of putting this amendment in the Zoning Ordinance versus in the Comprehensive Plan and, as a first step, this amendment to the Comprehensive Plan is judged to be an appropriate measure.

This amendment has been formulated over five months in which work sessions were held every month with the public and with tele-communications business representatives who were present to explain their concerns about this amendment. A sincere attempt has been made to accommodate all valid concerns about this amendment.

The Planning Commission voted 9-0 to adopt this amendment and recommend it to City Council for ratification. The staff also recommends approval of this amendment.

William E. Issel

William E. Issel

City Manager's Comments:

I have reviewed the above issue and recommend Council action as outlined in this document.

Rob. Daniel
Robert T. McDaniel

3/20/97
Date

CITY OF OAK RIDGE



POST OFFICE BOX 1 • OAK RIDGE, TENNESSEE 37831-0001

March 17, 1997

Honorable Mayor and
Members of City Council
City of Oak Ridge
Oak Ridge, Tennessee 37831

Attention: Robert T. McDaniel, City Manager

Re: Tower Land Use Policies

Dear Members of City Council:

At their regular meeting on February 27, 1997, the Oak Ridge Regional Planning Commission by a vote of 9-0 adopted an amendment to the Comprehensive Plan to provide policies related to the placement of towers. The adopted amendment adds Policy L-21, providing criteria for evaluating new tower locations that require review by the Board of Zoning Appeals. This amendment was adopted after researching the issue, and after discussion at several meetings with input from citizens and other interested parties, resulting in many changes from the original draft. Final comments were received at the public hearing on February 27, 1997. The resulting policy provides general guidance to the Board of Zoning Appeals, and to applicants seeking a tower site, with regards to priorities, preferences and requirements. The Planning Commission is submitting this amendment to the City Council for ratification.

Respectfully submitted,

Terry C. Domm (k.a.)

Terry C. Domm, Chairman
Oak Ridge Regional Planning Commission

OAK RIDGE

TENNESSEE

CITY OF OAK RIDGE
MUNICIPAL BUILDING
POST OFFICE BOX 1 37831-0001
TELEPHONE: (615) 482-8316

February 20, 1989

Honorable Mayor and
Members of City Council
City of Oak Ridge
Oak Ridge, Tennessee

Dear Members of Council:

This 1988 Update to the Comprehensive Plan reviews in summary form the first three years of achievement, development, opportunity, and change which have dynamically reshaped the Comprehensive Plan since its adoption in 1985.

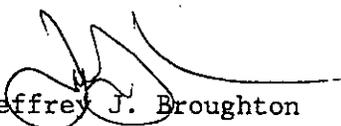
Included in this document is the 1988 Update to the Plan (tan pages), a Summary of the 1988 Policy Changes (yellow pages), and the text of the 1985 Comprehensive Plan (white pages). The 1988 changes were recommended by the Oak Ridge Regional Planning Commission and were subsequently adopted by the City Council on May 16, 1988.

This formal review and update was undertaken in recognition that the Comprehensive Plan is a living document that is continually being reshaped by the actions of City Council in response to new challenges and opportunities which arise within our community. The Plan continues to be utilized by the City for guidance in our efforts to achieve quality growth and development within the community.

As can be noted on the pages to follow, significant progress has been recorded in addressing the key issues of Housing and Population, Employment and Economic Development, General Development, and Quality of Life. This direction, in concert with our service mission as established annually in our Goals and Objectives Program and our economic mission as embodied in the SCORE! Plan, will continue to serve as the foundation for future direction and action in achieving the long-term goals of the City.

A summary of actions or factors which have reshaped the Comprehensive Plan will be annually prepared for incorporation into the Plan to assure that the Plan remains current and that community issues are adequately addressed through its policies and procedures.

Very truly yours,


Jeffrey J. Broughton
City Manager

COMPREHENSIVE PLAN UPDATE TEAM
CITY OF OAK RIDGE, TENNESSEE

May 1988

Oak Ridge City Council

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John D. Bryant	W. Wilson Pitt, Jr.	Ernest C. Willoughby
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Oak Ridge Regional Planning Commission

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John E. Wagner, Electric Department Director
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Jacquelyn J. Bernard, City Clerk
Jerry E. Gibbons, Office Services Coordinator
R. Vivian Sargent, Secretary
Jerri S. H. Hsu, Word Processing

1985 Plan Consultant Team

William Weber, AICP; BRW, Inc.	Robert Einsweiler, AICP
Craig Amundsen, AICP, AIA; BRW, Inc.	David Folz, AICP
Howard Preston, PE; BRW, Inc.	George Bowen

R E S O L U T I O N

WHEREAS, the City of Oak Ridge by Resolution 5-52-85 has adopted a Comprehensive Plan to serve as a guide to address the community's major concerns, and to promote and achieve quality community growth and development, and

WHEREAS, the Plan provides for the periodic review and amendment of the information, policy statements and proposed actions contained therein, as warranted by the various topic areas or by changing conditions, and

WHEREAS, such review has been completed by the Oak Ridge Regional Planning Commission, with input from the Planning Commission and the City staff, reflecting actions and events since the previous adoption of such Plan, and

WHEREAS, the City Manager recommends adoption of the 1988 Comprehensive Plan Update.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCILMEN OF THE CITY OF OAK RIDGE, TENNESSEE:

That the recommendation of the City Manager is approved and the 1988 Comprehensive Plan Update is hereby approved with such update to be used for guidance by the City in its efforts to achieve quality growth and development, and that the Comprehensive Plan shall be modified to reflect these updates.

BE IT FURTHER RESOLVED that the City Manager shall annually prepare summaries of these actions or factors which may have impacted the Comprehensive Plan during the previous year in order to allow incorporation into the Plan such modifications as may be appropriate to assure that the Plan remains current and that community issues are adequately addressed through its policies and programs.

This the 16th day of May 1988.

APPROVED AS TO FORM
AND LEGALITY:

William E. Santif
City Attorney

Ray J. Smith
Mayor



Jaquelyn J. Bernard
City Clerk

CITY OF OAK RIDGE



COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION

POST OFFICE BOX 1 • OAK RIDGE, TENNESSEE 37831-0001

April 25, 1988

Honorable Mayor and
Members of City Council
City of Oak Ridge
Oak Ridge, TN 37830

Attention: Jeffrey J. Broughton
City Manager

Re: Recommended 1988 Update to
1985 Comprehensive Plan

Dear Members of City Council:

At its regular meeting on March 24, 1988, the Oak Ridge Regional Planning Commission voted 9-0 to recommend to City Council the accompanying update to the 1985 Comprehensive Plan, for adoption.

This document includes input from the City's operating departments, the Community Development Department, the City Manager, and the Planning Commission. It is intended that this insert, with a revised table of contents, replace the initial 25-page Summary (with Roman page numerals) of the 1985 Plan. The list of City Council members, Planning Commissioners and City department heads would similarly be updated, and the entire Plan be re-issued with an updated cover, for public availability.

Planning Commission members would be pleased to review this update with the City Council at a work session.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Lynn Noey", is written over the typed name.

Lynn Noey, Chairman
Oak Ridge Regional Planning Commission

Attachment: Draft 1988 Update to 1985 Comprehensive Plan

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	(Omitted in 1985 Draft; Capital Improvements Program, FY 1990 - 1995, 148 pages, is available as a separate document)	

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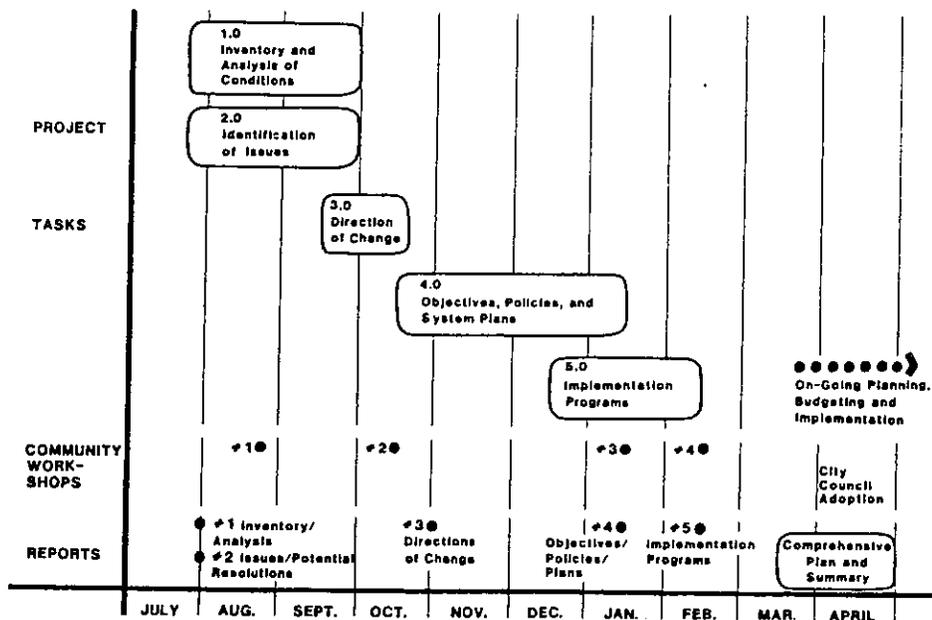
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The Initial Planning Process

The Oak Ridge Comprehensive Plan was initially prepared under the direction of the City Manager's Office with the significant assistance of a team of experienced urban planning consultants. (The word "initially" is employed to indicate that the Plan is expected to undergo periodic revisions to maintain its relevance.) The consultant team was led by BRW, Inc., of Minneapolis, Minnesota, who provided overall direction and coordination, and handled population and housing, land use, transportation, facilities, parks, quality of life, and plan implementation topics. Robert C. Einsweiler, also of Minneapolis, lent his considerable expertise in issue identification and citizen participation. David Folz and George Bowen, both of Knoxville, prepared the Economic Development Plan. The Oak Ridge City staff was in charge of project management, information input, document review and refinement, and citizen participation.

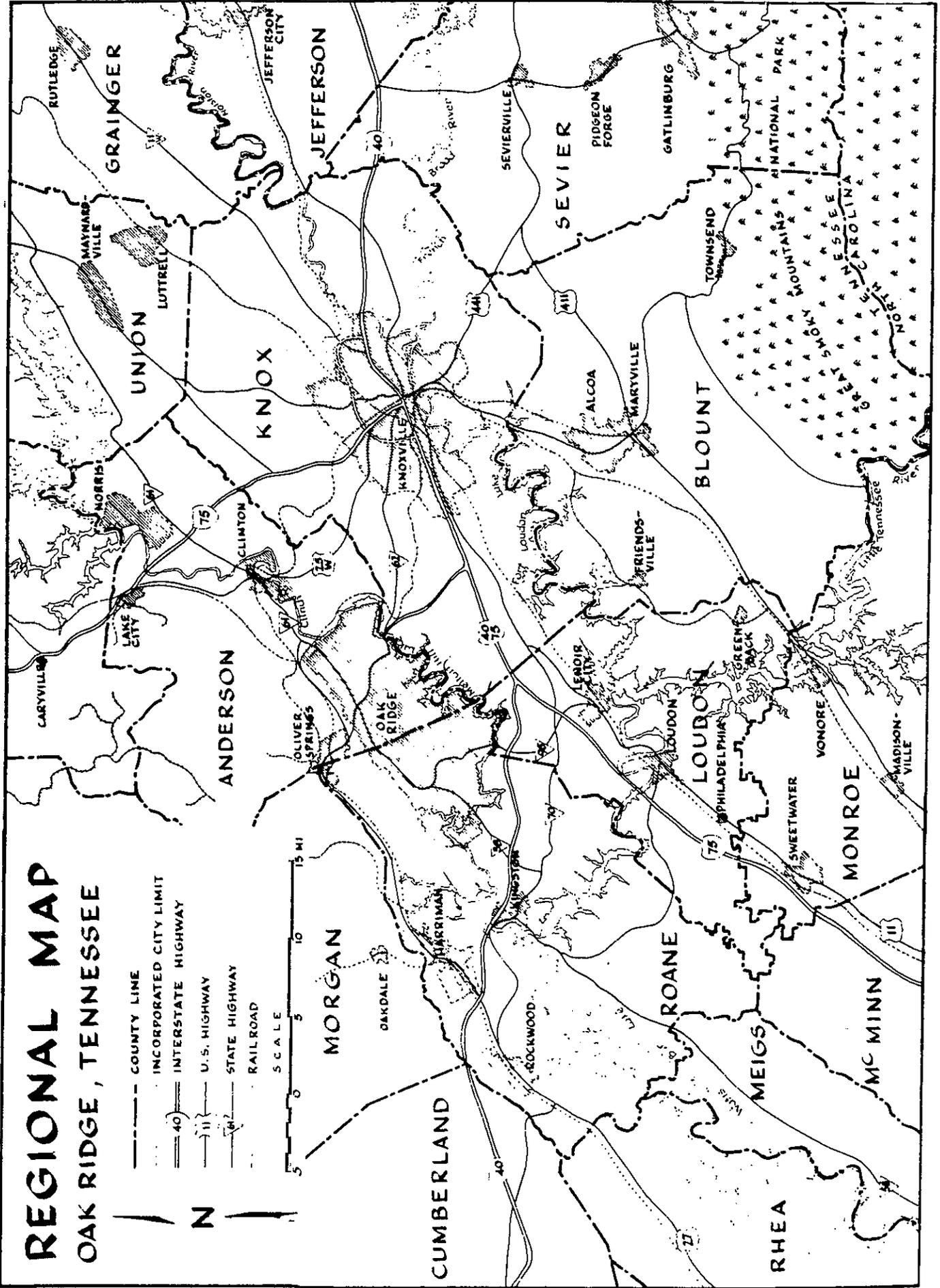
The planning process was conducted from July, 1984, to May, 1985, and is illustrated in conceptual form by the nearby chart. During each stage of the process, a considerable amount of interaction occurred among the City staff, consultant team, and the citizens and businesspeople of Oak Ridge. There were meetings with numerous interest groups; community workshops and information meetings were held in August, November, and January with total attendance near 1,000 persons; smaller neighborhood reaction meetings were also conducted in December and February; the Planning Commission and City Council each held two all-day workshops; the Oak Ridger reported on the process and explained nearly every point in the Plan; and, finally, hundreds of copies of the various preliminary documents were distributed for information and reaction. The quality and quantity of citizen participation in the initial planning process was remarkable and helped ensure that the Plan truly represents a consensus of community opinions.

CITY OF OAK RIDGE COMPREHENSIVE PLAN:
PROJECT SCHEDULE



REGIONAL MAP OAK RIDGE, TENNESSEE

--- COUNTY LINE
 - - - INCORPORATED CITY LIMIT
 == INTERSTATE HIGHWAY
 --- U.S. HIGHWAY
 --- STATE HIGHWAY
 --- RAILROAD
 SCALE
 0 5 10 15 MI



May 16, 1988

1988 UPDATE TO 1985 COMPREHENSIVE PLAN
Approved by Oak Ridge City Council, Resolution 5-64-88

INTRODUCTION

The revisions to the Comprehensive Plan in this section include input from the Oak Ridge Regional Planning Commission and the operating departments of the City of Oak Ridge. The 1985 Comprehensive Plan dealt with most aspects of the economy, population, physical arrangement and local government of the City of Oak Ridge, Tennessee. The major changes from within and from outside the City that have taken place are summarized here. Revisions to the major recommendations from the 1985 Plan, suggested by those changes and by the City's experience with its plan, are shown in **bold type**.

SUMMARY - OAK RIDGE IN 1988

The Population

The population of the City of Oak Ridge in 1985 was estimated at 28,300 persons, up from the 1980 level of 27,662 but only equal to the 1970 population. Although the number of households had increased between 1970 and 1985, a **reduction in average household size, typical of the entire region, cancelled any equivalent population increase**. The growth in the proportion of older adults and the relative stasis of the population became sources of concern for some members of the community.

The members of the Oak Ridge community are typically well educated (81 percent are high school graduates, 34 percent are college graduates), well employed (35 percent are executives or professionals), and well paid (average household income in 1980 was \$23,150). These figures reflect the fact that Oak Ridge was created as and remains a location of world-class scientific and technical research and production. The education, experience, and income of the Oak Ridge community set it apart from most others and promote social, cultural, and civic vitality remarkable for a city of this size.

Population Update: The City's estimated population in 1987 was about 28,700. This compares with the 1985 Plan's estimate for 1987 of 28,421. No more accurate figure will be available until the 1990 Census, when house-by-house counts will yield up-to-date figures about the number of occupants per household.

The Economy

The economy of Oak Ridge is dominated by the research and production activities of the U.S. Department of Energy (DOE) as conducted by its lead contractor, Martin Marietta Energy Systems, Inc. The major DOE employment centers include the National Laboratory, the Gaseous Diffusion Plant (enriched uranium production), and the Y-12 Plant (production of nuclear weapons).

Although these federal facilities have sustained Oak Ridge since the completion of the Manhattan Project, the local economy rises and falls with the shifting policies and appropriations of Congress. This periodically generates some uncertainty and trepidation among employees as well as potential employers. Addressing this issue became the primary concern of the Economic Development Plan and is also a major element of the community involvement proposal presented in 1984 by the Martin-Marietta Corporation, the prime DOE contractor in Oak Ridge.

Economy Update: Net DOE/Contractor employment was up from 17,000 at the end of 1984 to 17,700 in 1986, but will continue to fluctuate. The Oak Ridge Gaseous Diffusion Plant (K-25), placed on standby in 1986, will be closed and decommissioned over the next several years. Construction has begun on Boeing Tennessee, Inc.'s Oak Ridge test facility, part of a planned \$50 million expansion that will add about 500 new jobs. Smaller enterprises continue to move into existing industrial parks.

Economic issues in addition to economic diversity and self-sufficiency include the need to capture a larger share of the Oak Ridge employees as community residents, the need to ensure the adequacy and reliability of the City's traffic and utility systems for industrial production, and the **definition** of an appropriate role for the municipal government in the economic development process.

Some of the key economic development functions undertaken by the City government include:

1. Development of new industrial parks;
2. Improvement of infrastructure to existing industrial parks;
3. Construction and leasing of an industrial "incubator" building targeted to "start-up" industries;
4. Completion of capital improvements programs, a DOE property acquisition plan, an annexation plan, and a Comprehensive Plan;
5. Funding of an industrial development grant program; and
6. Financial support for the Oak Ridge Chamber of Commerce, the Tourism Bureau, and other organizations which encourage growth within the local economy.

Other major, positive steps include: DOE's lump-sum award of \$22.4 million to the City for self-sufficiency, ending the earlier program of annual payments; the City's enactment of a local option sales tax, allowing reduction of the property tax by 55%, which has stimulated construction of new retail centers, industrial parks, and housing; and DOE's October 1987 approval of the City's request that DOE lands transferred for self-sufficiency purposes could be used for residences as well as for commerce and industry.

The arrival of the Martin Marietta Corporation as the operating contractor for DOE's Oak Ridge facilities was accompanied by significant activities and projects related to the area's economic development. Among the major facets of this sterling example of active corporate citizenship were:

1. Announcement of plans for a 295-acre business park near Union Valley and Bethel Valley Roads which will seek to attract headquarters of major technological corporations. Martin Marietta's Commerce Park was dedicated late in 1987.
2. Development of the Tennessee Innovation Center, which is designed as an incubator for high-tech businesses and spin-off industries from ORNL research and development projects. The for-profit Innovation Center, a subsidiary of Martin Marietta Corporation of Bethesda, Maryland, opened on September 18, 1984, and moved in October, 1986 to a new 50,000-square-foot building. It has helped start up 12 new businesses to date. Ten of these are currently active, providing a total of about 100 new jobs. Sales of the 10 current companies in 1987 totaled \$7.5 million.
3. Investment of 10 percent of Martin Marietta's annual fee as new venture capital in Oak Ridge.
4. Placement of \$15 million of corporate procurement in East Tennessee.
5. Investment of over \$1 million locally in joint university/government/industry research.
6. Sponsorship of a center for manufacturing systems engineering.
7. Promotion of Oak Ridge as a place of residence for its employees.
8. Promotion of industrial sponsorship of the American Museum of Science and Energy, and contributions to local educational, cultural, civic, health and welfare organizations.

Quality of Life

The quality of life in Oak Ridge is generally regarded as being high. Most residents feel it is a good place to live, work, and raise a family. However, there are some shortcomings which are identified below. The unique economy and history of Oak Ridge seem to be the source of what is valued about this City as well as what is not.

Physical Factors:

Oak Ridge residents continue to enjoy fine police and fire services and good public utilities. There are very good regional outdoor recreation opportunities available, and the local park and recreation system is superior to most other southeast cities of comparable size. **Despite continuing, modest diversity in housing types,** more diversity is still needed in types, sizes, styles and prices of housing. An often-mentioned deficiency of Oak Ridge is the range of goods and services available, which forces many residents to shop elsewhere.

Update: Since 1985 the community has worked with the private sector to seek an increase in the range of goods and services available within the City. This will increase the volume of shopping within the City by its residents. The effort included agreement late in 1987 to sell a 92-acre City-owned site near the Federal Office Building to a major national developer for construction of a new, state of the art, 550,000-square-foot shopping and mixed-use center. In addition, the City has supported rezoning for other retail centers.

Social Factors:

Oak Ridge consists, generally, of well educated and culturally aware people who have a wealth of personal interests to share. Learning and personal improvement are lifelong aims of a large portion of the population. Therefore, Oak Ridge has an **unusually large** number of clubs, organizations, and cultural resources. Social opportunities for those aged 30 to 55 are generally adequate. The Oak Ridge school system is one of the best in the nation.

However, many of the City's residents have lived in Oak Ridge for most of their lives, which brings stability but also risks stagnation or a closed attitude. The average age is above the national average, and the proportion of young adults and small children is rather low. Social opportunities for young, unmarried people are said to be available, but more difficult to achieve than in other communities; and there is a need for more opportunities for social interaction among senior citizens and among teenagers. Finally, there is a general demand for more and better restaurants, taverns, other places of entertainment, and public places to gather, stroll, and watch others.

Update: Opportunities for social interaction have improved through such facilities as an attractive waterfront restaurant overlooking the Olympic-quality rowing course near the Marina, the new 168-room Garden Plaza Hotel, and improvements to Bissell Park at the Civic Center. The Parks and Recreation Department has broadened its Taxi Coupon program, lowering the eligible age group from 60+ to 55+ and opening it up for the handicapped of any age between 18 and 55. Also, the Senior Center is more available to groups that serve the general public, as well as seniors; and several recent City programs promote interaction between senior citizens and youth or other non-senior groups.

Environmental Factors:

Oak Ridge enjoys a mild climate, and air and water quality are good. However, there has been concern about mercury contamination along East Fork Poplar Creek, and about proposals for interim storage of consolidated wastes and spent nuclear fuel on the DOE reservation.

Oak Ridge desires greater definition of the city center concept that was put forth in the 1948 plan for the City. Desired is a "town square" site where people can gather and which may become the focus of civic pride. Several elements of that goal are already in place, but further work is necessary.

Other elements of community charm could be improved, as with many cities. Signs and "strip" commercial development have eroded the pleasant appearances of Oak Ridge Turnpike. Trees are major visual elements that have matured in residential areas and along Lafayette Drive since the City's wartime beginnings. Street trees are lacking along the Turnpike and Illinois Avenue. Once-popular overlooks are now gone; ironically, some have been obscured by tree growth. The entryways to the City do not present the best possible image to visitors and potential residents.

Environmental Update: Factors such as tree-lined streets, overlooks, and the appearance of major entrances to the City have not changed significantly, but funds are budgeted in Fiscal 1988 to begin renovation of entry signs and other measures. A revised sign ordinance was enacted in 1986 which limits the height and size of signs for all new businesses. Both the City and private businesses have planted street trees along Illinois Avenue (State Route 62) and elsewhere, and new landscaping efforts are evident.

Less visibly, concern for water quality in East Fork Poplar Creek, the City's major drainage way, has subsided to a great extent as remedial measures have been taken at the Y-12 plant to greatly reduce discharges into the creek, and as research to date has found little or no public health hazards. DOE's progress, and commitment to innovative management of the wastes on its reservation, has attracted favorable national attention as a model other communities might follow. After thorough review and public as well as expert input, proposals by private businesses as well as DOE to handle and treat safely a variety of hazardous wastes are moving forward.

Labor Factors:

The quality of work life in Oak Ridge is generally quite high due to the many non-routine scientific and technical positions available at the DOE plants and laboratories. Other "high-tech" firms are beginning to move to Oak Ridge and the vicinity, adding to the quality of the job market. However, much more economic and employment diversity is needed in order to provide additional entry-level jobs, more positions which do not require a college degree, and more opportunities for mobility for those scientific and technical personnel now employed by the DOE contractors.

The 1985 call for more diversity in employment still needs major efforts, since even substantial private investments will not be sufficient to offset future major reductions in DOE/contractor employment. However, three existing industrial parks are now fully committed: sites in the Municipal Industrial Park and Valley Industrial Park have all been sold or optioned, and IT Corporation is working with TVA on a \$17 million expansion in the Clinch River Industrial Park. Two new major employment centers are nearing completion: Commerce Park under a subsidiary of Martin Marietta; and the City's Bethel Valley Industrial Park. A former private industrial park is being refurbished as the 17-acre Melton Lake Industrial Park. Also, Boeing's planned multi-year expansion is getting under way.

Land Development

The principal land use and development issues include resolving the appropriate role of the City, providing additional residential land, protecting established neighborhoods, promoting city center growth, and improving appearances.

Land Development Update: By approving a local sales tax and reducing the property tax by 55%, Oak Ridgers made the City much more competitive with its neighbors, a major factor in urban development. Since July of 1985 the City has annexed two areas with strong housing potential, extended utilities to serve a remote internal site, and secured a ruling from the Department of Energy that housing, as well as business and industry, may be built on lands that DOE may declare to be available. Rezoning for a third major retail/office site off the Jackson Square-Downtown business axis is stimulating business growth in the central area. And several projects, contracts, and ordinance amendments strengthen City and private efforts to improve community appearance.

Housing

The Oak Ridge housing stock is characterized chiefly by the high proportion of units built prior to 1950. Many of these buildings have been modernized and well maintained and, thus, remain attractive. But most of the very early multiple-family buildings are exhibiting signs of physical deterioration.

Due primarily to its origins, Oak Ridge offers a narrower range of types, sizes, and prices of housing than many of its neighboring communities. Its primary housing needs are for additional moderately-priced single-family units for first-time buyers, housing designed for the elderly, and decent housing for those of very low income.

Housing Update: The City completed its Housing Assistance Plan, and is participating in the Tennessee Housing Development Agency's special Rural and Inner City home ownership program. A short-term grant program of the City's encouraged the new 130-unit British Woods Apartments, which opened in 1986. Several hundred of the former Moore Apartments, now under Realty Manage-

ment, Inc. were modernized and remodelled in 1986-87. Also, in 1987 an area of 92 deteriorating apartments built about 1952 was rezoned to allow commercial re-use of the site.

Traffic

The 1985 Plan noted that the Oak Ridge street system functioned fairly well but suffered peak-hour problems on major streets, due to early design deficiencies, subsequent land access design, and the constraints imposed by topography and the linear urban pattern. The major traffic system issues are identified below, with remedial actions noted as appropriate:

1. Peak-hour traffic flow on Oak Ridge Turnpike and, to a lesser extent, South Illinois Avenue, was becoming increasingly inconvenient and hazardous. Highway widening, protected left turn lanes, intersection and signal improvements along both the Turnpike and Illinois Avenue were well along in 1987, and should help significantly with peak hour congestion when finished.
2. East-west traffic movement on roadways other than Oak Ridge Turnpike was difficult due to curves, hills, narrow pavement, and poorly-designed intersections. The proposed Capital Improvements Program for Fiscal 1989 through 1994 addresses the most urgent of these locations.
3. Access to the western end of the urban area from the central part of the Oak Ridge urban area is limited to Oak Ridge Turnpike and West Outer Drive. Access to the far west end of Oak Ridge has been improved since the new Wisconsin Avenue route, begun late in 1987, was opened to traffic. Engineering design for intersection improvements along the west end of the Turnpike are already under way, with funding provided through a recently-approved municipal bond issue.
4. Residential parking in the oldest sections of Oak Ridge was inadequate. Private construction of off-street spaces continues, where residents desire and where terrain permits.
5. Traffic capacity between Pellissippi Parkway and South Illinois Avenue needs to be upgraded to accommodate the increase in vehicles anticipated from Martin-Marietta's Commerce Park, the City's Bethel Valley Industrial Park, and other nearby areas proposed for industrial and residential development. Discussions are under way with the Tennessee Department of Transportation for improvements to SR 62 between Solway Bridge and Lafayette Drive, planned for completion in the early 1990's. Other improvements are budgeted.
6. Widening of Emory Valley Road from Lafayette Drive to Dana Drive, with a connection northward from the west end of Briarcliff Avenue to Fairbanks Road, will relieve growing congestion. The far-sighted acquisition of right-of-way during the development of Emory Valley as a growing residential area will reduce the cost and dislocation of this improvement.

General Management and Implementation

It became apparent that a complete review of the entire Comprehensive Plan, each and every year, is not cost-effective in terms of the time of staff, advisory boards, and citizens, relative to benefits. The Plan's overall direction for actions of the City, are sufficiently clear that periodic review within a five-year framework should suffice. On an annual basis, the staff will prepare for the Planning Commission's consideration a summary of City Council actions and other, outside factors which have impacted the Comprehensive Plan during the previous year.

POPULATION AND HOUSING PLAN

The City of Oak Ridge has established the following broad objectives to guide the development and occasional amendment of its housing policies and programs:

1. Gradually and consistently increase the City's population;
2. Expand the selection of housing in terms of styles, location, and costs;
3. Improve the condition of existing housing; and
4. Provide decent housing for those who cannot provide it for themselves.

To move toward achievement of those objectives, the City of Oak Ridge will work according to the following policies and carry out the stated programs and activities within the ever-changing limitations of its financial resources.

Population Size and Composition

POLICY P-1: The City will attempt to achieve a moderate and steady growth in households and population.

POLICY P-2: While the Oak Ridge population should continue to be distinguished by its relatively high proportion of persons who have skilled, technical, scientific, professional, and managerial occupations, there must be an increase in the diversity of occupations and incomes from present levels.

POLICY P-3: The City will attempt to increase the percentage of municipal, school, DOE contractor, and other employees who live in Oak Ridge by attracting new and relocated employees, particularly young adults.

PROGRAMS/TOOLS:

1. Establish and follow the Land Use Plan.
2. Bond for public improvements.
3. Assist resident recruitment.
4. Execute the Economic Development Plan.

New Housing

POLICY P-4: The City will use land use planning, zoning and subdivision regulations, and available governmental and private financial means to increase the supply of new detached housing units which are priced to attract the first-time buyer.

POLICY P-5: The City will attempt to increase the supply of attached housing units for rental and sale according to market demand, emphasizing attractive architecture and site planning, as well as neighborhood compatibility.

POLICY P-6: The City will ensure that attached housing is not restricted to a particular geographic sector of the city, but is integrated throughout the community in an appropriate and compatible manner consistent with adopted land use policies and zoning regulations.

POLICY P-7: The City will promote the availability of housing alternatives for elderly and "empty nester" homeowners and others who may desire them.

PROGRAMS/TOOLS:

1. Administrator contemporary, flexible land development regulations.

Housing Condition

POLICY P-8: The City will assist in the stabilization of housing which is in "good" or "fair" condition and the improvement of housing which is in "poor" condition through code enforcement, public education, technical assistance, and limited financial assistance.

POLICY P-9: As a last resort, the City will encourage the removal and replacement of housing which, because of its "deteriorated" condition is not economical to rehabilitate.

POLICY P-10: The City will promote the gradual replacement of deteriorating multiple-family (3 or more dwelling unit) housing remaining from the 1941-1945 period with other housing or other appropriate development.

POLICY P-11: The City will attempt to stabilize or improve the physical condition of post-war, multiple-family housing through regulatory means.

POLICY P-12: The City will support the maintenance of neighborhood quality through the provision of sound public utilities, streets, and other public facilities.

POLICY P-13: The City will cooperate with organizations which will play an active role in neighborhood activities and, thus, promote neighborhood quality.

POLICY P-14: The City will encourage sensitive redevelopment of deteriorated neighborhoods by increasing land values through

regulatory changes which allow more intensive but compatible residential development.

POLICY P-15: The City will eliminate or reduce **land use conflicts** through strict enforcement of the Zoning Ordinance and by following the Oak Ridge Land Use Plan.

PROGRAMS/TOOLS:

1. Housing Rehabilitation Loan Program.
2. Housing Rehabilitation Grant Program.
3. Scattered-Site redevelopment assistance.
4. Housing design and maintenance standards.
5. Maintenance of public facilities.
6. Advisory housing inspections.

Housing Assistance for the Needy

POLICY P-16: The City will continue to convey federal rent assistance to that portion of the community which cannot afford decent housing and will promote with federal, state, and local resources the development or rehabilitation of housing designed for and affordable to those of low and moderate income. To the extent possible, such housing will be distributed throughout the community.

POLICY P-17: The City will explore means of developing new housing, or rehabilitating existing owner-occupied housing, for low-income persons.

PROGRAMS/TOOLS:

1. Rent assistance.
2. Subsidized housing for the elderly.

ECONOMIC DEVELOPMENT PLAN

The City of Oak Ridge has established the following aims for its Economic Development Plan:

1. Alleviate the image and source of the perception that the future prospects for Oak Ridge are uncertain;
2. Encourage growth which capitalizes on the assets of Oak Ridge while at the same time preserving and enhancing the high quality of life found in the community;
3. Attract new businesses and residents; and
4. Clearly define the local government's role and approach to economic development activities.

Improving Economic Confidence

POLICIES E-1 AND E-2 are deleted, since their purposes were achieved with the DOE's lump-sum payment of \$22.4 million to support the City's self-sufficiency work, and with the successful referendum to increase sales taxes, which allowed a 55% reduction in property taxes. This greatly strengthened efforts at economic diversification.

Achieving Desired Development

POLICY E-3: The City will attempt to strengthen a coordinated, business-like, public-private approach to retain, develop, and recruit targeted businesses that broaden the tax base, particularly those which maintain or increase per capita and median family income.

PROGRAMS/TOOLS:

1. Coordinate key groups.
2. Retain existing businesses with technical and financial assistance.

POLICY E-4: In a joint public-private partnership approach, the City will work with the community to nurture spin-off industries and stimulate the formation of affinity industries in Oak Ridge.

PROGRAMS/TOOLS:

1. Assist new business formation through existing and expanded "incubator" facilities and programs.
2. Help finance business development using all available resources.

3. Develop new industrial sites.

POLICY E-5: The City will promote the use of contemporary architectural design, site planning, access control, sign standards, and landscaping techniques for new and redeveloped commercial and industrial properties so as to protect and improve the aesthetic and natural environment of the City.

PROGRAMS/TOOLS:

1. Utilize site review process to guide development.
2. Transfer City industrial property with restrictive covenants.

POLICY E-6: The City will support the growth and diversification of retail and service establishments to better serve resident consumers and broaden the city's regional shopping center function.

PROGRAMS/TOOLS:

1. Establish business improvement district(s) and use public financial and other powers to leverage private investment.

POLICY E-7: The City will support public-private efforts to increase local convention and tourism business.

PROGRAMS/TOOLS:

1. Develop tourism plan.

POLICY E-8: The City will increase contact and participation on economic development projects with governmental jurisdictions.

POLICY E-9: The City is committed to serving as the anchor to the Tennessee Technology Corridor (a concept including Oak Ridge National Laboratory, the University of Tennessee, and a concentration of other institutions and resources for technology transfer, development, and economic growth, sometimes referred to as the "Tennessee Resource Valley") and working with other governmental jurisdictions to promote economic development which is beneficial to area residents.

PROGRAMS/TOOLS:

1. Coordinate efforts with those of the Tennessee Technology Corridor Foundation and related bodies.

LAND USE AND DEVELOPMENT PLAN

Through the following policies, programs, and plans, the City of Oak Ridge will guide wise land use and promote residential, commercial, and industrial development while protecting established neighborhood and environmental quality.

Comprehensive Land Use Planning

POLICY L-1: The City will formulate and adopt a generalized land use plan which designates land use categories and intensities of development and use this plan with land use policies and development standards.

POLICY L-2: The City will encourage more centralized growth while allowing development to occur elsewhere when services can be made available in a cost-effective manner and when traffic can be properly managed.

PROGRAMS/TOOLS:

1. Adopt and follow Land Use Plan (see Figure 9).

Role of the City in Urban Growth

POLICY L-3: The City will facilitate land development, road improvements, and utility extensions so as to create a community which grows in a logical, cost-effective, environmentally-sensitive pattern.

POLICY L-4: While retaining planned open space, the City will guide and promote the development of major vacant land parcels in the vicinity of the city center, along major thoroughfares, in industrial parks, and in residential areas through business-like financial leveraging, regulatory incentives, and/or detailed planning and design coordination, as appropriate.

PROGRAMS/TOOLS:

1. Utility standards.
2. Land development regulations.
3. Infrastructure financing.
4. Development of DOE land.
5. Establishing partnerships in special opportunity areas.

POLICY L-5: The City will consider the annexation of land if careful study indicates that the long-term benefits to the City outweigh the long-term costs. Benefits to the City may include tax-base enhancement, accommodating population growth, improving traffic access, protecting neighborhood quality, controlling fringe growth, and fully utilizing investments in utility systems.

POLICY L-6: The City, when considering a request to annex land for residential purposes, will judge whether or not land exists within the municipality which is equally feasible to develop and whether or not that land exists in sufficient quantity to meet the foreseeable needs of the City.

Commercial and Industrial Development

POLICY L-7: To the extent possible, commercial development which is located along Oak Ridge's Arterial Streets will be in unified centers with shared access to those roadways.

POLICY L-8: The City will promote the location of intensively-designed retail, service, office, hotel, multiple-family residential, and civic activities in the Turnpike-Illinois-Rutgers vicinity and in the Jackson Square - Jackson Plaza vicinity while allowing appropriately located and designed neighborhood shopping centers.

POLICY L-9: The City will also allow community-scale retail development on appropriately-zoned sites having good traffic access and proper buffering from residential areas.

POLICY L-10: The City will promote three distinctive types of industrial areas: (1) technology, research and corporate headquarters, (2) traditional industries, and (3) special materials industries.

POLICY L-11: The City will locate new industrial and office areas and enforce site design standards to ensure that residential neighborhoods are protected from the adverse effects of those activities.

Residential Development

POLICY L-12: The City will allow a variety of housing types and densities in each sector of Oak Ridge, as long as existing single-family areas are adequately protected.

POLICY L-13: The City will promote redevelopment of deteriorated housing, where applicable, within the north-central area of the City through small scale, increased density developments that are

compatible with remaining housing.

PROGRAMS/TOOLS:

1. Maintenance of streets and utilities.
2. Housing rehabilitation.
3. Housing maintenance ordinance.
4. Land Use Plan and Zoning Ordinance.
5. Rehabilitation of viable commercial areas.
6. New commercial structures in permitted locations.
7. Redevelopment to housing of non-viable commercial sites.

Urban Design and Environmental Protection

- POLICY L-14: The City will attempt to create a dominant city center which is visually and psychologically strong through the encouragement of retail, office, hotel, and restaurant development, high-density housing, major public facilities, public gathering spaces, pedestrian and bicyclist paths, and landscaping.
- POLICY L-15: The City will seek to maintain a strong retail base at the larger, viable neighborhood commercial centers, but allow smaller, less viable neighborhood centers to be replaced by housing or other development if the private market sees fit.
- POLICY L-16: The City will strive to identify, maintain, or introduce a children's playground area (public park and/or school yard) within a reasonable distance of all housing. Specialized recreation facilities, such as tennis courts, may be more widely scattered.
- POLICY L-17: The City will continue to use public and private landscaping, sign control, and site plan reviews to achieve a pleasing and distinctive visual image throughout the city.
- POLICY L-18: In all retail centers, the City will promote designs which emphasizes pedestrian amenities, human scale, abundant landscaping, and distinctive architecture.
- POLICY L-19: The City will encourage well-planned development of hillside areas, while preserving wooded slopes and ridge tops of significant visual appeal to the extent possible and protecting against undue erosion, excessive utility costs, and hazardous roadway alignments.

POLICY L-20: The City will continue to protect and preserve the functional and aesthetic features of its flood-plains, drainage ways, and river shorelines.

TRANSPORTATION PLAN

The Oak Ridge Transportation Plan establishes policies, standards, and guidelines for the on-going design of specific segments of the system. This plan sets forth an overall framework into which projects such as the 1985 Street Network Study (BRW, Inc., December, 1985) fit.

Municipal Thoroughfare Plan

POLICY T-1: The City will revise and implement a municipal thoroughfare plan which classifies roadways according to their function so that they are designed according to their intended use.

POLICY T-2: The City will investigate means of providing additional access to the western end of the urban area.

POLICY T-3: The City will continue to pursue means of improving access to the federal highway system.

PROGRAMS/TOOLS:

1. Functional classification system of roadways (see Figure 12).
2. Roadway design standards.

POLICY T-4: The City of Oak Ridge thoroughfare plan will address physical facility improvements and traffic management techniques in order to alleviate current and forecast street capacity and safety problems. Following completion of State-financed improvements on Illinois Avenue, highest priority will be given to traffic safety and flow improvements on Oak Ridge Turnpike. The City will consider every financing alternative available to fund necessary Turnpike improvements, including continuation of the municipal sales tax.

POLICY T-5: The City will improve and protect the through traffic function of Oak Ridge Turnpike and South Illinois Avenue by means of zoning of adjacent lands, access controls, and roadway design.

POLICY T-6: The City will work to improve intracity movement on roadways other than Oak Ridge Turnpike and Illinois Avenue.

POLICY T-7: The City will identify, design, and rank in order of priority the intersection improvements needed on the arterial and collector street systems.

PROGRAMS/TOOLS:

1. Design improvements.
2. Operational improvements.

Alternative Transportation Modes

POLICY T-8: The City will continue to replace severely deteriorated sidewalks according to need. Such costs will be shared with benefitting landowners where appropriate, except that Community Development Block Grant funds may be used to assist in designated neighborhoods.

POLICY T-9: The City will continue the municipal program of subsidizing taxi fares for the elderly.

POLICY T-10: The City will make regular investments in a long-term program to build a city-wide bicycle system which links major commercial areas, parks, schools and residential areas.

POLICY T-11: The City will upgrade existing streets according to need and based upon a regular inspection program.

POLICY T-12: The City will maintain proper coordination between the Transportation Plan and other elements of the Oak Ridge Comprehensive Plan to aid in proper planning, coordinated capital improvements programming, and ease in plan implementation.

POLICY T-13: The City will continue to strive to maximize the use of outside funds for traffic system improvements.

PROGRAMS/TOOLS:

1. Traffic system surveys.
2. Coordination among City staff functions.
3. Thoroughfare and Intersection Design Study.
4. Capital Improvements Program.

MUNICIPAL FACILITIES AND UTILITIES PLAN

General Development of Facilities

POLICY F-1: The City will continue to provide a high level of municipal services and facilities in a cost-effective manner.

POLICY F-2: The City will promote and guide urban development through streets and utilities financing practices.

Water Distribution System Plan

POLICY F-3: The City will continue to maintain and operate an efficient and adequate water distribution system.

POLICY F-4: The City will equitably distribute costs for system-wide operations and improvements to all users.

POLICY F-5: The City will efficiently provide water service to new users.

PROGRAMS/TOOLS:

1. Municipal Facilities and Utilities Plan (see Figure 16).
2. Capital Improvements Program.
3. System standards.

Sanitary Sewer System Plan

POLICY F-6: The City will attempt to achieve reductions to inflow and infiltration to the sanitary sewer system.

POLICY F-7: The City will operate and expand the system in a cost-effective and equitable manner.

PROGRAMS/TOOLS:

1. Municipal Facilities and Utilities Plan (Figure 16).
2. Capital Improvement Program.
3. System standards.

Surface Water Drainage System Plan

POLICY F-8: The City will maintain and expand the surface water drainage system in a cost-effective manner.

PROGRAMS/TOOLS:

1. Capital Improvements Program
2. System standards.

Electricity Distribution System Plan

POLICY F-9: The City will manage the electricity distribution system so as to provide reliable power at cost-competitive rates.

Library Plan

POLICY F-10: The City will continue to gradually expand and improve the resources and services of the Oak Ridge Public Library.

PROGRAMS/TOOLS:

1. Annual Operational Budget.

City Buildings Plan

POLICY F-11: The City will modernize the Municipal Building in its present location through the Capital Improvements Program process, basing changes on a space needs study and coordinating with other efforts to enhance a "city center" effect in this vicinity.

POLICY F-12: The City will anticipate long-term modernization and relocation of the public works complex.

POLICY F-13: The City will consider replacement of the central fire station and the possible addition of a fourth station to serve developing, more remote areas to the south.

PROGRAMS/TOOLS:

1. Capital Improvements Program.
2. Municipal Facilities and Utilities Plan (Figure 16).

Schools Property Plan

POLICY F-14: The City will continue to develop the Elm Grove and Cedar Hill School sites as neighborhood parks using extensive neighborhood participation in the design process.

POLICY F-15: The City of Oak Ridge and the Oak Ridge Schools will continue to collaborate each year on the review and revision (if necessary) of short-range and long-range population forecasting as a means of planning for facilities and programs.

POLICY F-16: The City of Oak Ridge will continue to provide full support and cooperation to the Oak Ridge Schools in its efforts to deliver the highest quality of education possible.

PROGRAMS/TOOLS:

1. Neighborhood design participation.
2. Population and enrollment forecasting.

Industrial Parks Plan

POLICY F-17: The City will use the in-lieu-of-tax funds secured from DOE according to criteria established in this Comprehensive Plan for public involvement in development projects and in accord with the sound financial principles stated in the Multi-year Budget Management Plan.

POLICY F-18: The City will promote industrial development through the installation and cost recovery of industrial park infrastructure and through the assembly and sale of new land.

PARKS AND RECREATION PLAN

The Oak Ridge Parks and Recreation Plan is intended to continue the City's tradition of high-quality park facilities which are so valued by its residents. Special attention is given to redesigning and rebuilding parks to serve users better. New parks are proposed for future neighborhoods and a greenbelt-bicyclist trail is proposed along East Fork Poplar Creek. Figure 3, Municipal Facilities and Utilities Plan, illustrates the major park system changes.

Public-Private Partnership Approach

POLICY PK-1: The City will establish, support and work cooperatively with a Community Recreation Council (CRC).

PROGRAMS/TOOLS:

1. Community Recreation Council.
2. Grants and low-cost loans to non-profit organizations for facility development.

The City has a long tradition of working with various recreation groups. However, a more formal approach will be required in the future in order to meet the community's needs. The City will work with interested individuals and groups within the community to establish a Community Recreation Council (CRC) composed of representatives from the City and Schools, youth organizations, and adult organizations involved in sports related recreation programs and facilities in Oak Ridge.

The CRC will promote recreation in Oak Ridge in terms of the direct value of these activities in contributing to "The Vision Lives On." The purpose of the CRC will be to collect and evaluate information and to serve as a community sounding board on generic issues relating to recreation facilities, programs, and policies. When appropriate the CRC will establish task forces and make recommendations to City staff, City Council, and other groups concerning these recreation issues. The City also will work with leisure oriented clubs and performing arts groups such as the Arts Council to better coordinate provision of activities and facilities by these groups.

Park System Improvement Activities

POLICY PK-2: The City will support a system of public and private recreational facilities and open space appropriately located, designed, maintained, and coordinated so as to closely meet the needs of the community. On-going analysis will be undertaken by the City to assure that municipal facilities and programs are provided in a way that complements, rather than duplicates, those furnished by other providers.

POLICY PK-3: The City will work toward achieving more diversity in its park system as conditions permit, analyzing recreation deficiencies on a neighborhood basis, and scheduling improvements through the capital improvements program. Site plans will be prepared for the ultimate development of each park with the participation of neighborhood residents and other interested citizens. Major improvements will be made to one park at a time, rather than scattering the efforts, so as to achieve a noticeable impact.

POLICY PK-4: The City will, to the extent that suitable land and funding are available, develop park and recreational facilities to serve residential neighborhoods located in excess of one-half mile from a public park or school yard.

POLICY PK-5: The City will improve A. K. Bissell Park as a centralized recreation facility more strongly oriented towards community events, strolling, and passive or informal recreation.

POLICY PK-6: As new residential neighborhoods are established, the City will require developers to dedicate land or an equivalent amount of cash for public neighborhood park and recreation facilities. The amount of land or cash to be set aside shall be based upon the density and acreage of land developed, as described in amendments to the City's Subdivision Regulations.

POLICY PK-7: The City will hold Haw Ridge Park for long-term recreation needs (camping, hiking, nature interpretation, picnics, etc.) and will hold the Marina site for long-term use for waterfront access, including rowing.

PROGRAMS/TOOLS:

1. Site plans for individual parks based on citizens' suggestions.
2. Capital Improvements Program.
3. Local park development standards.
4. New or redesigned parks in established neighborhoods: Elm Grove, Cedar Hill, West Ridge, Emory Valley, and A. K. Bissell Parks. (Refer to Figure 16 for locations).
5. Park dedication standards in Subdivision Regulations.
6. Parks in new neighborhoods: Oak Hills and Gamble Valley Parks. (Refer to Figure 16).
7. State Park System funding (Haw Ridge Park).

Maintaining and Expanding Public Open Space

POLICY PK-8: The City will maintain, expand, and provide improved access to its public greenbelts.

PROGRAMS/TOOLS:

1. Greenbelt dedication standards.
2. Public-private cooperation on trail maintenance.
3. DOE/Superfund assistance in land acquisition along East Fork Poplar Creek.

Recreation Program Improvement Activities

POLICY PK-9: The City will seek methods to improve recreational opportunities for teenagers and the elderly.

PROGRAMS/TOOLS:

1. Task forces including pertinent group representatives.

QUALITY OF LIFE PLAN

Quality of life is already considered to be quite good in Oak Ridge by many residents, and this Plan will help fill a few critical gaps. Many of the programs utilized in this Plan are elements of other sections of the Comprehensive Plan which will be "custom-fitted" during the Plan implementation process to achieve the direction established in the following policies.

Social and Cultural Needs

POLICY Q-1: The City will strive to enhance Oak Ridge population diversity (age, marital status, income, occupation) by **continuing to promote (a) new industrial and commercial opportunities, (b) more new mid-priced owner- and renter-occupied housing, and (c) increased housing alternatives for elderly homeowners.**

POLICY Q-2: The City will attempt to increase social interaction opportunities in Oak Ridge by promoting the development of additional commercial entertainment and by making maximum use of such community facilities as parks, community centers, and schools.

POLICY Q-3: The City will continue to promote racial integration, following equal opportunity guidelines in all local public hiring, housing assistance, and service provision practices.

PROGRAMS/TOOLS:

1. Economic Development Plan.
2. Housing Plan.
3. Parks and Recreation Plan.
4. Land Use and Development Plan.

Economic and Physical Needs

POLICY Q-4: The City will attempt to improve employment opportunities, security, and diversity by promoting the development of new businesses and industry in Oak Ridge and by promoting the community as a desirable place to live and work.

POLICY Q-5: The City will attempt to increase public financial "leveraging" in land development and redevelopment with careful attention to cost-effectiveness.

POLICY Q-6: The City will maintain or improve the quality of public facilities and services in Oak Ridge and use this asset to market Oak Ridge to prospective residents and businesses.

POLICY Q-7: The City will promote housing development and rehabilitation activities in the Community Development Block Grant target area in coordination with the upgrading of streets, utilities, parks, and community centers.

PROGRAMS/TOOLS:

1. Economic Development Plan.
2. Local statutory financial powers.
3. Outside financial assistance.
4. Private investment.
5. Housing Plan.

Environmental Needs

POLICY Q-8: The City will improve, protect, and publicize the image of Oak Ridge as a clean, safe, and attractive environment.

POLICY Q-9: The City will aggressively promote Oak Ridge as a "center of excellence" reflecting not only the City's tradition as a location of technological advancement, but also as a progressive community rich in outstanding natural beauty, unique social and cultural heritage and amenities, and favorable quality of life.

POLICY Q-10: The City will develop and ~~implement~~ a plan for landscaping and continue to ~~implement~~ the sign control ordinance so as to ~~improve~~ the aesthetics of the City's major thoroughfares and entry points of the community.

POLICY Q-11: The City will promote community pride and identity.

POLICY Q-12: The City will seek to further enhance its commercial-civic-recreational-educational City Center through an urban design master plan, proper zoning for new retail, office, hotel and entertainment activities, improved park space, pedestrian and bicyclist amenities, landscaping, and possibly, expanded educational facilities.

POLICY M-7. Proposed projects will move up and down in the capital improvements program sequence based on urgency of need related to City policies or on cost-effectiveness criteria related to the timing and coordination of department operations and funding.

POLICY M-8. In general, all items in the City's annual capital budget should have previously appeared in the City's six-year capital improvements program.

Government Structure and Operation

POLICY M-9. All departments of the City will continue periodically to examine and effect changes in responsibilities or management which would improve productivity, lower costs, enhance service, and further communication with the public. The City will maintain a Department of Community Development, including functions of code enforcement, economic development, community development, engineering and municipal planning, for a coordinated and effective interaction between the City, public utility extensions, the private development sector and related activities. This carries out the "one-stop shop" concept.

POLICY M-10. The City will periodically evaluate the function of and relationship among the Planning Commission, Board of Zoning Appeals, and City Council to determine if land development decisions are being made efficiently.

POLICY M-11. The City will pursue aggressively action by all other levels of government which may contribute to the policies and programs of the Comprehensive Plan.

Human Resources

POLICY M-12. The City will continue actions to ensure that all City staff are sensitive to the special needs of the community and its citizens.

POLICY M-13. The City will take steps to continue and increase citizen involvement in the ongoing planning, programming and budgeting process.

POLICY M-14. The City will maintain liaison with key citizen groups and provide recognition to those residents who contribute to the improvement of Oak Ridge with little or no public compensation.

POLICY M-15. The City will continue to provide progressive career development programs for all employees and improve the skills of all supervisory personnel.

Plan Adoption, Review and Amendment

POLICY M-16. The City staff will review programs and projects on at least an annual basis to ensure their efficiency and conformity with the Comprehensive Plan.

POLICY M-17. The City periodically will review and amend the Comprehensive Plan so that each section of the Plan is thoroughly updated at least every five years. More frequent reviews and amendments should occur when warranted by the nature of the topic area or by changing conditions.

SUMMARY OF POLICY CHANGES, 1988

Policy statements have been reassessed in the light of established goals, recent changes, and the City's current needs. The Planning Commission recommends that almost all of the 1985 policies, with the minor changes listed below, be retained as part of the Comprehensive Plan.

POPULATION & HOUSING:

1. Revise Policy P-15 to aim at reducing all land use conflicts, not just those that affect housing.

ECONOMIC DEVELOPMENT:

1. Policies E-1 and E-2 are deleted, since their purposes were achieved.
2. Under Policy E-7, delete Program/Tool No.1, since the proposed retail market study has been carried out.
3. Revise Policy E-9 to reflect the current term for "Tennessee Technology Corridor", renamed "Oak Ridge Corridor" and now, more broadly, "Tennessee Resource Valley."
4. Delete Policy E-10, since a decision was made to proceed no further towards building a general aviation airport.

LAND USE AND DEVELOPMENT:

1. Policy L-7 has been broadened to ask that commercial development along all arterial routes, not just the Turnpike and Illinois Avenue, be in unified centers with shared access.
2. Policy L-17 has been revised to note the continuing efforts to achieve a pleasing and distinctive appearance throughout the city.

TRANSPORTATION SYSTEM:

1. Policy T-1 is revised to delete the term "adopt" with reference to a thoroughfare plan.
2. Delete Policy T-14, which repeats former Policy E-10 regarding a general aviation airport, following the decision to drop that project.

MUNICIPAL FACILITIES & UTILITIES:

1. Add to Policy F-13 the possibility of a fourth fire station to serve developing areas that are remote from the present stations.

2. Policy F-14 to reflect that both Elm Grove and Cedar Hill elementary schools have been closed, and that both sites have been cleared and begun to be redeveloped as neighborhood parks.
3. Policy F-15 is revised to note that City-Schools collaboration regarding population forecasts as a basis for facility and program planning is a continuing activity.
4. Policy F-17 to reflect that DOE's lump sum assistance payment was in fact secured; and that a multi-year budget management plan for application of these funds was developed, including support of industrial parks and other projects that meet the City's criteria, and will be followed and updated.

PARKS AND RECREATION:

1. Under Policy PK-1, the Planning Commission recommends a Community Recreation Council as a tool or program in more detail. The City through its Parks and Recreation Department will continue to work with leisure oriented clubs and performing arts groups as well as sports-related recreation providers and others, as described in the policy.
2. Policy PK-5 is revised to emphasize that Bissell Park is a facility primarily for community events, strolling, and informal games or passive recreation, but not for scheduled athletics. It still calls for its improvement as a central recreation facility.
3. Policy PK-7 is revised to delete a reference to Chestnut Ridge Park, which has been sold for residential development, and to emphasize retention of the Marina site for long term waterfront access, including rowing.

QUALITY OF LIFE:

1. Policy Q-1 is reworded to state that the City will continue to promote business opportunities, mid-priced housing, and alternative housing for elderly homeowners.
2. Policy Q-3 is simplified by deleting the words "to work" in the phrase, ". . . will continue to work to promote . . ."
3. Policy Q-10 is reworded to state that the City will implement, as well as plan, landscaping and sign controls along its major thoroughfares and entry points.

GENERAL MANAGEMENT & IMPLEMENTATION:

The policies from this section have been added to the summary, so as to update and keep current the way the Comprehensive Plan is used.

1. Policy M-9 is reworded to add a description of the current Department of Community Development, a recommendation of the 1985 Plan.
2. Policy M-15 is worded more broadly to state that training is intended to improve the skills of supervisory personnel; previous wording focussed only on leadership, motivational and communication skills.
3. Policy M-17 is rewritten to delete the phrase "on a regularly scheduled basis." It still calls for "periodic review" of each component of the Comprehensive Plan at least every five years, and more often when appropriate.

POPULATION AND HOUSING

Population and Housing Analysis

This chapter of the Oak Ridge Comprehensive Plan addresses population and housing and handles them in tandem because they are so closely related to one another. This Analysis of Conditions documents and analyzes the current factors and trends which affect population and housing in Oak Ridge, explains how these and other variables are interrelated, and sets forth the major issues to be addressed by the Plan. The topic of population and housing is analyzed according to the following sequence:

- Social and economic characteristics
- General description of the housing stock
- Public housing assistance

SOCIAL AND ECONOMIC CHARACTERISTICS

This section analyzes the key social, economic, and housing characteristics of Oak Ridge as a basis for a subsequent summary of housing problems and issues in the City. Table 1 lists the key social and economic characteristics of the City of Oak Ridge. These and other more detailed data will be analyzed in subsequent pages.

Population Growth and Decline

The growth and development in Oak Ridge has been significantly different from most cities in East Tennessee due to its "new town" heritage. Shortly after the establishment of the Manhattan District, the Oak Ridge community had a population of some 20,000 scientists, engineers, and maintenance workers. By July, 1944, the population increased to 50,000 and peaked at 75,000 in 1945. With the completion of the major construction projects and a shift in programmatic emphasis following World War II, the population declined to 30,229 by 1950. Shortly after Oak Ridge became an incorporated community in 1959, the population numbered 27,169.

During the 1960-1980 period, the Oak Ridge population total fluctuated slightly and averaged about 27,700. (Refer to Table 2.) However, nearby communities grew substantially, particularly during the 1970's. This disparity has been a source of great concern in Oak Ridge, as some residents view this lack of growth as an indication of long-term economic stagnation or decline. The loss of 657 persons in Oak Ridge from 1970 (28,319 persons) to 1980 (27,662 persons) is especially disturbing in light of the fact that employment at the Department of Energy and its contractor facilities increased by over 4,000 people during the same period.

A summary of population change in Oak Ridge and nearby Counties is shown by Table 2 for the period 1950 to 1980.

TABLE 1

Selected Social and Economic Characteristics,
City of Oak Ridge and State of Tennessee

<u>Characteristic</u>	<u>City of Oak Ridge</u>		<u>State of Tennessee</u>
Population			
1980	27,662	- 2.3%	+17.0%
1970	28,319		
Population by Gender, 1980			
Male	13,266	48.0%	46.8%
Female	14,396	52.0%	53.2%
Number of Households			
1980	11,021	+16.8%	+24.4%
1970	9,434		
Number of Families			
1980	7,991	+ 2.5%	+18.2%
1970	7,797		
Mean Number of Persons per Household			
1980	2.50		2.84
1970	3.00		3.02
Median Age			
1980	35.2		30.1
1970	29.7		28.1
Number of Families with Children Under 18 Years of Age, 1980			
Total	3,798	47.5%	50.2%
Single Parent	615	7.7%	11.0%
Number of Households with Persons 65 and over, 1980	2,115	19.1%	19.3%
Marital Status, 1980 (Persons over 15)			
Married	6,810	85.2%	60.4%
Single, Divorced, Separated, Widowed	1,181	14.8%	39.6%
Minority Racial Group Members, 1980			
Black	1,938	7.0%	15.7%
Other	541	1.9%	1.2%

TABLE 1 (Continued)

<u>Characteristic</u>	<u>City of Oak Ridge</u>		<u>State of Tennessee</u>
High School Graduates, 1980 (Persons 25+ Years of Age)	14,451	80.7%	56.1%
Percentage of Labor Force Unemployed		5.6	7.4
Income of Households, 1979			
Mean	\$23,150		\$17,462
Median	\$19,770		\$14,152
Households with Incomes below Poverty Level, 1980			
Families	487	6.1	10.1%
Unrelated Individuals	74	21.2	34.0%
Occupation, 1980			
Managerial, Professional	4,701	35.4	19.7%
Technical, Sales, Clerical	4,548	34.3	28.0%
Service	1,341	10.1	12.1%
Farming, Forestry	112	0.8	2.6%
Precision Production	1,442	10.9	13.3%
Operators, Fabricators, Laborers	1,117	8.4	24.3%

Source: U.S. Census, 1970 and 1980

The most interesting statistics from Table 1 are those addressing population change and household and family change. The population of Oak Ridge shrank by 2.3 percent from 1970 to 1980 but the number of households increased by 16.8 percent and the number of families by 2.5 percent. This indicates that many people did move into Oak Ridge during that decade but they were predominantly single. This gain was more than offset by the exodus of members of families. That combination of effects reduced the average household size from 3.0 to 2.5 persons.

TABLE 2
Population Change in Oak Ridge
and Surrounding Counties, 1950-1980

<u>Place</u>	<u>1950</u>	<u>1960</u>	<u>Percent- age Change 1950-1960</u>	<u>1970</u>	<u>Percent- age Change 1960-1970</u>	<u>1980</u>	<u>Percent- age Change 1970-1980</u>	<u>Average House- hold Size 1980</u>
Oak Ridge	30,229	27,169	-10.10	28,319	4.20	27,662	-2.30	2.5
Anderson County	59,407	60,032	1.05	60,300	.45	67,346	11.70	2.74
Knox County	223,007	250,523	12.30	276,293	10.30	319,694	15.70	2.72
Roane County	31,665	39,133	23.60	38,881	-.64	48,425	24.50	2.83

Source: U.S. Census of Population, 1950, 1960, 1970, and 1980.

The 1970-1980 population loss in Oak Ridge was due primarily to a reduction in the average household size, which was 3.00 persons in 1970 but only 2.50 persons in 1980 (See Table 3). The number of households actually increased from 9,434 to 11,021 but was more than offset by the decline in average size. This decline in household size in Oak Ridge is significant because the 1980 Census of Population would have shown an increase of 2,539 persons had the average household size remained constant at 2.8 persons.

TABLE 3
Household Characteristics of Oak Ridge
and Surrounding Counties, 1980

<u>Place</u>	<u>Number of Households</u>	<u>Average Household Size</u>
Oak Ridge	11,021	2.50
Anderson County	24,687	2.74
Knox County	117,631	2.72
Roane County	17,078	2.83

Source: U.S. Census of Population, 1980.

For Oak Ridge to have sustained its 1970 population level, assuming a constant housing vacancy rate of 5.0 percent, an additional 276 housing units (and households) would have been required. Production of 276 housing units less than necessary for maintenance of a stable population total does not seem to indicate an inherent defect in the operations of the actors involved in the local housing market, considering that almost half of all Tennessee cities between 15,000 and 55,000 population declined in population size during 1970-1980. Nonetheless, knowledge of these factors hardly mitigates the local concern that Oak Ridge is one of just six cities in the 16-county East Tennessee region to have lost population over the last decade.

The Census Neighborhoods with the smallest average household sizes in 1980 were #4, 5, 6 and 12. The percentage of single-person households, particularly persons over age 65, is quite high in these neighborhoods. (Refer to Figure 3, Census Neighborhoods, for the boundaries of the thirteen neighborhoods defined by the U.S. Bureau of Census in 1980).

Age Distribution

Oak Ridge has experienced a dramatic increase in the median age of its population since 1960. The population of its residents over age 35, and particularly the population over age 55, has increased, while the population under age 16 has declined. This pattern of aging is shown by Table 4. Note that the median age of the Oak Ridge population has increased from 27.2 years in 1960 to 29.7 years in 1970 to 35.2 years in 1980.

The Census data seem to indicate that many "Baby Boom" children have grown and left the community while new households include a high proportion of single people and couples who have delayed childbearing. The median age of the community can, thus, be expected to continue to rise for at least another ten years. This is part of a natural cycle for a maturing community.

TABLE 4

Population Age Distribution in
Oak Ridge and Tennessee, 1960-1980,
(Expressed as Percentages)

<u>Age</u>	<u>City of Oak Ridge</u>			<u>State of</u>
	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>Tennessee</u>
Under 5	11.9	7.5	5.4	7.3
5-9	12.2	9.8	6.6	4.8
10-15	13.0	13.0	9.6	10.2
16-19	5.1	6.8	6.6	7.8
20-24	4.8	6.6	7.1	9.5
25-34	15.7	12.6	14.5	16.7
35-44	19.0	13.4	12.8	12.0
45-54	12.1	16.3	12.8	10.4
55-64	4.2	9.3	14.4	9.7
65 & Over	2.1	4.7	10.2	11.6

TABLE 4 (Continued)

<u>Age</u>	<u>City of Oak Ridge</u>			<u>State of Tennessee</u>
	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1980</u>
Under 16	37.0	30.3	21.6	22.4
Over 35	37.4	29.7	50.2	43.6
Over 45	18.4	30.3	37.4	31.7
Over 55	6.3	14.0	24.5	21.3
Over 65	2.1	4.7	10.2	11.6
Median Age	27.2	29.7	35.2	30.1

Source: U.S. Census of Population, 1960, 1970, 1980.

This pattern, along with a lack of local housing alternatives for the elderly, has contributed to fewer of the older housing units in Oak Ridge being placed on the market, especially in the Anderson County portion of Oak Ridge. Consequently, fewer houses have been made available in the lower price range for younger households. Other effects include decreased need for schools, less demand for playgrounds but more demand for senior citizens' recreation programs, and possibly, a more conservative attitude toward municipal expenditures.

The Census Neighborhoods with the highest median age were #4 (45.7 years), #5 (42.5 years), #1 (39.2 years), and #3 (38.0 years). Neighborhoods having the lowest percentages of families with children under age 18 were #13 (69.1 percent), #10 (64.7 percent), #9 (57.3 percent), and #8 (55.2 percent).

Education, Race, Income, and Employment

In addition to the population age distribution, several other characteristics distinguish the Oak Ridge population from the surrounding area. Among these are the levels of educational attainment by the Oak Ridge population, the percentage of the population which is nonwhite, and family income.

Education:

The education level of Oak Ridge citizens is dramatically higher than in surrounding areas. As indicated in Tables 1 and 5, over 80 percent of the population over 25 years has completed high school, and about one-third of the population has four or more years of college. In fact, Oak Ridge has one of the highest per capita ratios of Ph.D's of any city in the United States. Nearly 1,000 of these highly-trained residents work at the Oak Ridge National Laboratory (ORNL) and many more are employed at K-25, Oak Ridge Gaseous Diffusion Plant, Y-12, O.R.A.U., and D.O.E.

The percentage of white residents who have completed four years of college is 34 percent compared to only 15 percent for black residents. The Census Neighborhoods with the lowest percentages of residents completing high school were Neighborhoods #4, 5, 6, 7 and 12 (refer to Figure 3).

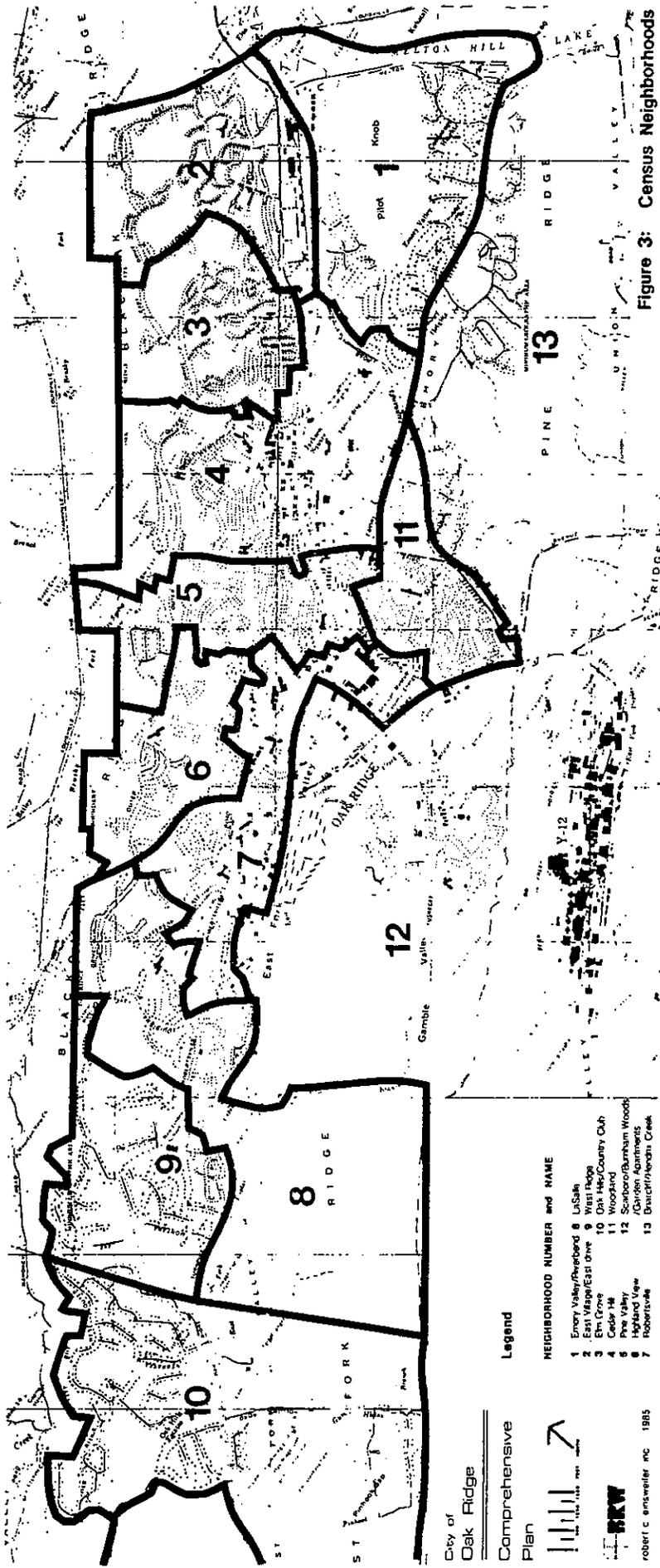


Figure 3: Census Neighborhoods

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TABLE 5

Education, Race, and Income Characteristics
of Oak Ridge and Surrounding Counties

<u>Place</u>	<u>School Graduates</u>	<u>With 4 or More Years of College</u>	<u>Percentage Nonwhite</u>	<u>Per Capita Income</u>	<u>Median Family Income</u>
Oak Ridge	80.1	34.3	9.0	\$ 10,106	\$ 24,872
Anderson County	62.2	18.2	4.9	\$ 7,438	\$ 18,754
Roane County	54.1	10.6	3.5	\$ 6,286	\$ 17,594
Knox County	64.4	18.8	9.5	\$ 6,908	\$ 18,055

Source: U.S. Census of Population, 1980.

Race:

Oak Ridge has a higher proportion of non-white residents than the remainder of either Anderson or Roane Counties. As indicated in Tables 1 and 5, approximately 9 percent of the Oak Ridge population is non-White, compared to 4.9 percent for Anderson County, 3.5 percent for Roane County, and 9.5 percent for Knox County. Census Neighborhood #12 (Scarboro) has by far the highest percentage of Black residents, at 46 percent. Neighborhood #6 is the next highest with 6.3 percent of its residents Black.

Income:

Two measures of the relative wealth of the population, median family income and per capita income are also significantly higher for Oak Ridge than surrounding counties. The 1980 Oak Ridge per capita income of \$10,196 represents a 173 percent increase since 1970 and indicates a significant growth in the general wealth of the population, even when inflation and population decline are taken into account. Also, the 1980 Oak Ridge median family income of \$24,872 was 15.5 percent higher than the 1980 U.S. median family income of \$21,023.

However, not all Oak Ridge residents enjoy a high income. A total of 6.1 percent of all Oak Ridge families and 21.2 percent of unrelated individuals have an annual income below the federally-defined poverty level. Poverty among families is most likely concentrated in Census Neighborhoods #5, 6, 7 and 12. Also, Neighborhood #4 has a very high incidence (26.7 percent) of unrelated individuals with incomes below the poverty level. The average annual family income of whites in 1979 was \$29,648 but for blacks was only \$15,576.

The following table indicates the number of Oak Ridge households in various income categories in 1979.

TABLE 6

Oak Ridge Household Incomes, 1979

<u>Income Range</u>	<u>Number of Households</u>	<u>Percentage of Households</u>
Less than \$5,000	1,138	10.3
\$5,000 to \$9,999	1,539	13.9
\$10,000 to \$15,000	1,494	13.5
\$15,000 to \$19,999	1,420	12.8
\$20,000 to \$24,999	1,187	10.7
\$25,000 to \$34,999	2,039	18.4
\$35,000 to \$49,999	1,481	13.4
\$50,000 or more	760	7.0
Median	\$19,770	
Mean	\$23,150	

Source: U.S. Census of Population and Housing, 1980.

Employment:

Occupations in Oak Ridge are primarily professional, administrative, and skilled technical or production. Table 7 indicates the distribution of occupation by category.

TABLE 7

Occupation by Category, 1980

<u>Category</u>	<u>City of Oak Ridge</u>		<u>Tennessee</u>
	<u>Number</u>	<u>Percentage</u>	<u>Percentage</u>
Executive, Administrative, Managerial	1,344	10.1	8.9
Professional	3,357	25.3	10.8
Technicians and Related Support	1,457	11.0	3.0
Administrative Support, Clerical	2,184	16.5	15.4
Sales	907	6.8	9.6
Service (Except Household and Protective)	1,019	7.7	10.0
Precision Production, Craft, Repair	1,442	10.9	13.3
Machine Operators, Assemblers, Inspectors	702	5.3	13.7
Others	<u>849</u>	<u>6.4</u>	<u>15.3</u>
TOTAL	<u>13,261</u>	<u>100.0</u>	<u>100.0</u>

Source: U.S. Census of Population, 1980.

The average rate of unemployment in 1980 in Oak Ridge was 5.6 percent. The Census Neighborhoods with the highest unemployment rates were #6 (9.5 percent), #2 (9.2 percent), #4 (6.3 percent), and #12 (5.9 percent). The unemployment rate was 6.7 percent for whites and 10.8 percent for blacks.

Housing Affordability

The number of families in each income range is important because it can be used as an indicator of what housing price ranges and rents Oak Ridge families can afford. The Oak Ridge family income distribution has shifted upward significantly during the 1969-1979 period. However, the simultaneous rise in housing prices put the median-priced home out of reach for about 45 percent of the Oak Ridge population in 1980.

Nonetheless, households in Knox County and most other locations in the U.S. are even less able to afford housing. Since 49 percent of all Oak Ridge households earn over \$25,000 per year, compared to only 4 percent of all Knox County households, more Oak Ridge households can afford a median-priced home than can Knox County households.

Not surprisingly, one of the larger potential groups of consumers of newer housing in Knox County consists of Oak Ridge employees. Given the generally wider selection of housing types and locations in Knox County, because it is larger, and the generally higher level of competition for business among developers and realtors in that area (compared to Oak Ridge), one could expect that a large proportion of Oak Ridge employees would choose to purchase housing in Knox County rather than in Oak Ridge. When tax differentials and ease of accessibility to places of employment in the Oak Ridge area are considered, and when differences in municipal service levels are ignored, the relative attractiveness of West Knox County housing becomes apparent.

However, an analysis of comparable homeowner costs in Oak Ridge, Farragut, and the Cedar Bluff and West Hills areas of Knox County conducted in 1984 by City staff indicated that net expenditures for Oak Ridge families are slightly lower than those paid by residents in West Knox County and Knoxville. Although Oak Ridge residents pay more for City and County property taxes, they also realize significant savings through lower electric, water and sewer rates, no refuse collection or fire protection charges, lower homeowner and auto insurance premiums, lower sales tax and transportation costs, and greater deductions from Federal income taxes. And, importantly, from a service delivery standpoint, Oak Ridge residents clearly receive superior services, particularly when compared to those in Knox County.

Apparently, several factors may be at work in people's decisions to reside elsewhere even though they work in Oak Ridge. These factors may include: 1) the importance of the size of the monthly principal-interest-taxes-insurance payment, 2) misconceptions about the true economy of home ownership in Oak Ridge, 3) insufficient variety and supply in the Oak Ridge housing stock, 4) insufficient amenities in Oak Ridge, such as shopping or entertainment, 5) other attitudes about Oak Ridge (e.g., too "elitist"), and 6) desire to live in a larger community or for a more rural lifestyle.

(For further detail on the topic of housing affordability, the reader may refer to Oak Ridge Housing Strategies, City of Oak Ridge, 1983, pages 25-27.)

Recent Trends in DOE Employee Residency

As stated previously, the population of Oak Ridge declined slightly from 1970 to 1980 even though employment at its primary (78 percent) work place (DOE plants) increased by more than 4,000 positions. New employees tended to have or find residences in Knoxville and Knox County. A decline since 1981 in employment at DOE facilities happened to affect Oak Ridge quite sharply. The result of these circumstances is that there are, for the first time, more DOE facility workers living in Knoxville than Oak Ridge. (Refer also to Tables 24, 25, and 26 found in the Economic Development chapter of this Plan.)

GENERAL DESCRIPTION OF THE HOUSING STOCK

Several key housing-related characteristics are presented in Table 8 for Oak Ridge, and Anderson, Roane, and Knox Counties. Compared with these surrounding jurisdictions, Oak Ridge has the lowest overall vacancy rate (4.05 percent), the highest median home value (\$42,500), and the largest proportion (47 percent) of its housing stock constructed before 1949. Oak Ridge also has the smallest proportion (9.3 percent) of newer housing (constructed since 1975) of these jurisdictions. The proportions of owner- and renter-occupied units, median contract rent, and the percentages of structure types more closely resemble Knox County (which is primarily urban) than either Anderson or Roane Counties (which are primarily rural).

TABLE 8
Selected 1980 Housing-Related Characteristics
for Oak Ridge and Surrounding Counties

Characteristic	Jurisdiction			
	Oak Ridge	Anderson County	Roane County	Knox County
Number of Housing Units	11,487	25,849	18,526	125,883
	Percentage			
Overall Vacancy Rate	4.05	4.50	7.80	6.50
Owner-Occupied	64.30	75.70	77.50	66.70
Renter-Occupied	35.70	24.30	22.50	33.30
	Percentage			
Homeowner Vacancy Rate (Vacant Units for Sale)	1.40	---	1.80	---
Rental Vacancy Rate	5.60	7.20	11.10	9.10
Median House Value	\$ 42,500	\$ 36,400	\$ 33,100	\$ 40,900
Median Contract Rent Per Month	\$ 164	\$ 152	\$ 107	\$ 166

TABLE 8 (Continued)

<u>Type of Structure</u>	<u>Percentage</u>			
Detached	70.5	75.4	79.1	69.6
Duplex	6.5	3.9	2.7	3.2
Three- and Four-Unit	6.8	3.7	2.2	3.5
Five- or More-Unit	16.0	8.9	6.2	19.7
Mobile Home/Trailer	.2	8.0	9.8	4.0

<u>Year Structure Built</u>	<u>Percentage</u>			
1979-March 1980	2.7	3.3	4.1	4.7
1974-1978	6.6	9.8	16.5	11.3
1970-1974	5.8	11.2	14.6	15.0
1960-1969	16.4	16.7	19.9	21.5
1950-1959	21.6	20.1	19.2	17.3
1940-1949	45.9	27.9	10.6	13.1
1939 or Earlier	1.1	10.9	15.2	17.2

Source: U.S. Census of Population and Housing, 1980.

Design and Construction Characteristics

For the most part, housing in Oak Ridge is unique in America in the 1980's. Most of the housing north of Oak Ridge Turnpike was built during World War II as temporary shelter. Thus, many shortcuts were taken in materials, construction techniques, and design.

Detached housing of that era had outer walls prefabricated from fiber board with cement-asbestos bonded to each side, a material known as "cemesto." Houses were set twelve feet back from the curb, but individually sited. Houses were often set diagonally to the street so that windows looked past each other rather than directly into one another. Service areas were located in pairs for more efficient garbage collection and meter reading. There were ten different cemesto designs, each intended to last about 25 years.

Most of the detached cemestos are still occupied, although many improvements have been made by homeowners in the structures' mechanical systems, roofing, siding, insulation, and foundations.

The next most common kinds of wartime housing still available are the cemesto duplexes and four-family buildings. The condition of these structures is usually not as good as that of the single-family cemestos. Most of these two- and four-family buildings are located between Pennsylvania and Louisiana Avenues, although large areas were cleared in the fifties and many post-sixties homes were built on the pre-platted lots.

This unusual collection of housing styles puts Oak Ridge at a competitive disadvantage when compared to many nearby communities, especially western Knox County. In those locations, potential buyers may choose from products which are far more conventional than many available in Oak Ridge.

Fortunately, the cost of comparable existing housing in Oak Ridge and Knox County is approximately equal. New housing is slightly more expensive in Oak Ridge, however.

Other types of early housing still in use to varying degrees are the four-family "E" apartment building, the asbestos-shingle "flattop" (all having peak roofs added in the 1950's), and the dormitory (now converted to apartments).

Of course, not all of the housing in Oak Ridge is left over from the days of the Manhattan Project. During the 1950's, there were approximately 1,500 detached units built, many near the west end of the City, and a large percentage of apartment buildings. Some of the apartments in the vicinity of Virginia Avenue are quite striking. In the 1960's, 70's, and 80's, a variety of single-family structures were added to the community. These homes are comparable in design, size, and materials to any of the better housing found in surrounding communities. Some attached housing was also constructed during this era, although in this category Oak Ridge has slipped far behind its neighbors in architecture, site planning, variety, and quantity.

Probably the most attractive feature of housing in Oak Ridge is its remarkable natural setting. The steep hills and lush vegetation soften the appearance of the older housing and add considerably to the charm of the older, as well as the newer neighborhoods.

Housing Availability, Cost, and Features

Vacancy Rate:

The comparatively low 1980 housing vacancy rate in Oak Ridge (4.05 percent) is an indication that either the choice of housing, especially for single-family homes, was not as wide as in surrounding jurisdictions, or that housing demand is high. However, an examination of the comparative percentages for the age categories of structures built in each jurisdiction shows that Oak Ridge failed to keep pace with the rates of construction experienced by surrounding counties during the 1970's. This depression in residential construction activity was especially marked from 1974 through 1980 and partially explains why Oak Ridge's vacancy rate is so low compared with other communities.

Turnover:

Another aspect of the Oak Ridge housing stock that affects the choice and availability of dwellings is the very high proportion (45.9 percent) of the supply which was constructed between 1940 and 1949. While normally housing of that age (especially the variety constructed in Oak Ridge) would make excellent "starter homes" for younger families, the rate of turnover of this housing is fairly low, according to 1980 U.S. Census data. A low turn-over rate inflates the price of those homes that do make it to the market. With higher prices for these older units and more competition for those units that do become available, prospective Oak Ridge residents find the Knoxville housing market more attractive.

Apparently, large numbers of elderly residents have decided to remain in dwellings which are paid for and which are small enough to maintain easily. This characteristic, combined with the housing preferences of the managerial and white-collar workers at federal facilities, has suppressed the rate of residential real estate activity in Oak Ridge. The generally higher comparative value (cost) of housing in Oak Ridge is also believed to have adversely affected the housing market in Oak Ridge.

Cost and Features:

A detailed review of the types and prices of housing marketed in 1983 in Oak Ridge and West Knoxville/West Knox County was presented in Oak Ridge Housing Strategies (pages 40-43). The report concluded that, compared to West Knoxville/West Knox County, Oak Ridge does not appear to offer an adequate supply and choice of housing affordable to buyers with incomes of \$20,000 to \$30,000 per year. This market segment is primarily comprised of households in the 24-44 age group, who are the most mobile of the population. Compared to its largest competitor, Oak Ridge does offer a large proportion of its housing stock to households with incomes of \$20,000 or less, based upon a review of the 1983 data.

The median housing value in Oak Ridge was \$42,500 in 1980, according to the U.S. Census of Population and Housing. However, there was a sharp difference between the housing values of the older portions of the City and the newer portions. Census Neighborhoods #2-7 and #11 and 12 (see Figure 3) all had median housing values between \$30,000 and \$40,000. Neighborhoods #1, 9, 10, and 13, on the other hand, had median values in the \$65,900-91,000 range. Thus, Oak Ridge housing tends to be at one end or the other of the cost spectrum.

Moreover, Oak Ridge Housing Strategies concludes that Oak Ridge's competitors offer more home value for the dollar in the starter home price brackets. A buyer can purchase a house in Oak Ridge for less than \$40,000, but due to its age, size, and amenities it may not be as attractive as comparably priced housing nearby. The housing industry in Knox and Blount Counties is currently producing a variety of designs on small lots with desirable amenities priced to attract the first-time buyer.

Thus, many of the young households which Oak Ridge needs to sustain its social, civic, and cultural vitality are almost forced to reside elsewhere. (Travel time to certain DOE plants is actually less from some other locations than from Oak Ridge, too.) Oak Ridge needs to build more new housing units affordable to first-time buyers while simultaneously preserving the quality of its large supply of older housing (principally the "cements").

If it can do so, the community in twenty years will be more heterogeneous in age and income than it is now, especially if local taxes remain reasonable.

One final note: Oak Ridge realtors have allegedly failed to take full advantage of the Knoxville advertising media for marketing the community and

have participated in the Multiple Listing Service for only the past few years. Thus, some first-time buyers are not fully aware of the opportunities Oak Ridge has to offer.

New Construction:

Despite the decline in population during the 1970 through 1980 period, the number of housing units and households in Oak Ridge increased during this time. Between 1970 and 1980, 1,515 new housing units were constructed, which represents a 15.2 percent increase. The actual number of households increased by 16.7 percent (9,440 to 11,021) during this period. The housing market in Oak Ridge was not been stagnant during the last decade.

However, the growth in housing units and households in Oak Ridge was not large enough to offset the declining average number of people in each household. Anderson County, Roane County, and Knox County, on the other hand, each sustained a high enough growth in housing units to offset declining household sizes which produced a net increase in population for those jurisdictions. During 1970 through 1980, Anderson County's housing stock increased by 26.6 percent, Roane County's housing stock increased by 42.0 percent, and Knox County's housing stock increased by 35.3 percent.

Although Oak Ridge has lagged behind most Knoxville suburban communities in the rate of attached housing construction, recent years have witnessed a sharp increase in the number and percentage of such housing units built in Oak Ridge. Still, the percentage of attached housing units in Oak Ridge is about half of what might normally be expected in a community of this size. To their credit, however, developers have recently made increasing use of the planned-unit development approach in some multiple-family site designs, which may attract the interest of additional investors.

The 1983 distribution of housing units by type in Oak Ridge is shown by the following table.

TABLE 9
Distribution of Housing Units by Type, 1983

<u>Type of Structure (Unit per Structure)</u>	<u>1983</u>	
	<u>Number</u>	<u>Percentage</u>
Single Unit	8,326	69.6
Duplex	755	6.3
Three- and Four-Unit	902	7.5
Five- or More-Unit	1,969	16.4
Mobile Homes & Trailers	19	.2
Total	<u>11,971</u>	<u>100.0</u>

Source: Oak Ridge Housing Strategies, City of Oak Ridge, 1984.

Rental Rates and Costs

In 1980, rental housing accounted for 35.7 percent of the Oak Ridge housing stock. The Census Neighborhoods with the highest percentage of rental occupancy were #12 (70.1 percent), #6 (63.5 percent), #7 (52.6 percent), and #4 (46.3 percent).

The median monthly rental cost in 1979 was \$164.00. Census Neighborhoods with the lowest rental costs were #4, 7 and 6. Census Neighborhood #12, which has the greatest number of rental housing units and relative poor housing conditions, was well above the median monthly rent for Oak Ridge at \$216.00.

Housing Conditions

The physical condition of a large portion of the Oak Ridge housing stock is starting to become a source of concern in the community. Some of the war-time residential structures, particularly those which are renter-occupied, are showing signs of exterior deterioration. A small percentage are characterized by major deterioration, but very few are so dilapidated as to be a threat to health and safety, uninhabitable, or uneconomic to rehabilitate. The 1980 U.S. Census indicated that 20 owner-occupied housing units and 113 renter-occupied units were substandard, meaning they had either no complete kitchen facilities or no complete bathroom.

It is felt that a true picture of the condition of the Oak Ridge housing stock is somewhat worse than a review of exterior deterioration and the simple standards of the U.S. Census would reveal. Interior structural problems and electrical or plumbing problems are easily overlooked and are difficult to correct due to the techniques of the original construction of the war-time housing.

Since 47 percent of the Oak Ridge housing stock was built before 1949 and most of that was built during the war, there are a large number of units at the same stage in their life cycle and with similar deficiencies in design and construction. Widespread major deterioration has probably only been averted by three factors: (1) an aggressive municipal inspection program aimed at structural and Building Code defects, (2) by the Building Code improvements made by the Atomic Energy Commission in these structures before they were sold to private citizens in 1959, and (3) by the fact that substantial improvements have been added to these "temporary" structures by their owners.

As ownership of these homes passes on to other occupants or non-resident owners, households, modernization and repair efforts may diminish. New owners may not be able to afford the improvements or may not judge that it is economic or otherwise desirable to invest the required funds in a structure of dated architecture and site planning. At that point, the community may experience the phenomenon of neighborhood decline and disinvestment typical of older, central areas. The prospect of such an occurrence should alert local decision makers to the need to examine ways to stabilize or revitalize some residential areas.

PUBLIC HOUSING ASSISTANCE

The Oak Ridge Housing Authority administers a variety of housing assistance programs in the City of Oak Ridge. This section describes the need for housing assistance in Oak Ridge, what assistance programs are currently in operation, and the Housing Authority's short-term plans for further activity area.

Housing Assistance Needs

The City's 1984-1986 Housing Assistance Plan as submitted to the U.S. Department of Housing and Urban Development (HUD) indicated that the housing stock conditions were as described in the following table.

TABLE 10

Oak Ridge Housing Stock Conditions, 1984

Tenure Type	<u>Standard Units</u>		<u>Substandard Units</u>		<u>Substandard Units Suitable for Rehabilitation</u>		
	<u>Occupied</u>	<u>Vacant</u>	<u>Occupied</u>	<u>Vacant</u>	<u>Occupied</u>		
					<u>Total</u>	<u>Lower Income</u>	<u>Vacant</u>
Owner	7,062	161	20	7	20	20	7
Renter	3,826	256	113	42	0	0	0

Source: City of Oak Ridge Housing Assistance Plan, 1984.

For purposes of the Housing Assistance Plan, and in the absence of other identified substandard conditions in Oak Ridge, the number of units quantified in the 1980 U.S. Census as having either no complete kitchen facilities or no bathroom or only a half-bath has been used as a measure to indicate the number of substandard housing units in Oak Ridge. A more thorough analysis of Oak Ridge housing conditions would probably reveal more need for housing rehabilitation assistance, however.

All 27 owner-occupied substandard dwelling units listed as lacking complete kitchen or bathroom facilities were considered to be suitable for rehabilitation. However, none of the units have been targeted for rehabilitation by the City. It was felt that expenditures allocated toward these few homes, given their limited deterioration, would be out of proportion relative to other needs of the community.

Of the 155 renter-occupied dwelling units listed in the U.S. Census as lacking complete kitchen or bathroom facilities, it was believed that a majority are in dormitory-type buildings built in the early 1940's to provide temporary housing. None of these units was considered suitable for rehabilitation. Removal and redevelopment would be a better solution for such housing.

The City also estimated the number of households needing housing assistance as follows.

TABLE 11

Number of Lower Income Households, 1984

<u>Income Level</u>	<u>Elderly</u>	<u>Small Family</u>	<u>Large Family</u>	<u>TOTAL</u>
Very Low Income	219	564	56	839
	26%	67%	7%	100%
Other Low Income	31	70	7	108
	<u>29%</u>	<u>65%</u>	<u>7%</u>	<u>100%</u>
TOTAL	289	728	104	1,121
	26%	65%	9%	100%

Source: Oak Ridge Housing Assistance Plan, 1984.

These figures were derived using 1980 U.S. Census data, the HUD definition of very low and low income, and the proportions of the various household types in the total City population.

From the preceding tables, it can be recognized that the housing assistance needs in Oak Ridge are primarily among the rented dwelling units and the very low income small family and elderly households. It was further estimated that, of the households requiring assistance, 295 (26 percent) are black, and 82 percent of those were small families.

Current Housing Assistance Programs

The Oak Ridge Housing Authority currently administers HUD-assisted programs for which it anticipates that subsidies will continue to be provided. The locations of assisted housing units (with the exception of the scattered-site Section 8 rent assistance units) are described by Table 12.

There are currently no local, state, or federal programs being administered in Oak Ridge which assist in the exterior or interior rehabilitation of existing housing units.

Additional Planned Housing Assistance

The Oak Ridge Housing Authority proposed in 1984 to provide the following housing assistance contingent upon availability of funding by HUD. At this point, however, expansion of the federal rent assistance and public housing programs is seen as unlikely.

TABLE 12

Oak Ridge Housing Assistance Programs, 1984

<u>Program</u>	<u>Elderly and Handicapped</u>	<u>Small Family</u>	<u>Large Family</u>	<u>TOTAL</u>
• Existing Public Housing	12	29	9	50
• Callaghan Towers (Section 8 Elderly)*	110	0	0	110
• Fairview Apartments (Section 8)*	18	78	4	100
• Kareday Apartments (Elderly and Handicapped)	56	0	0	56
• Scattered-Site Section 8 Rent Assistance*	19	70	19	108
	—	—	—	—
TOTALS	215	177	32	424

* The U.S. Department of Housing and Urban Development Section 8 Program provides rent assistance to lower-income households. Callaghan Towers, Fairview Apartments, Kareday Apartments, and the scattered units are privately owned and managed.

Source: Oak Ridge Housing Assistance Plan, 1984.

TABLE 13

Three-Year Housing Assistance Goals, 1984

<u>Program</u>	<u>Elderly</u>	<u>Small Family</u>	<u>Large Family</u>	<u>Total</u>
New Construction of Public Housing	32	23	23	78
Section 8 Existing Housing Rent Assistance	0	48	0	48
	—	—	—	—
TOTAL	32	71	23	126
	25%	56%	19%	100%

Source: Oak Ridge Housing Assistance Plan, 1984.

The City has made land available for two of the six sites needed for the new public housing construction and aided the approval process; four of the sites were privately purchased. Construction was underway in late 1984. Upon completion of the new public housing, 45 percent of the total identified need would be satisfied (85 percent of the elderly, 27 percent of the small family, and 53 percent of the large family). The Section 8 goal would address the need for rent assistance for small families.

Population and Housing Plan

This section of the Population and Housing Chapter of the Oak Ridge Comprehensive Plan identifies the major issues and concerns of this topic and establishes Plan policies, programs, and activities. Issues were identified through both informal and structured sessions with various local interest groups (including residents, housing developers and agents, and social service personnel), discussions with City staff, a review of documents, and inspections of the various neighborhoods. Policies and programs or activities were initially formulated by the project consultant team and subsequently refined by members of the public, City staff, and City Council and Planning Commission.

The City of Oak Ridge has established the following broad objectives to guide the development and occasional amendment of its housing policies and programs:

1. To gradually and consistently increase the City's population;
2. To expand the selection of housing in terms of styles, location, and costs;
3. To improve the condition of existing housing; and
4. To provide decent housing for those who cannot provide for themselves.

To move toward achievement of those objectives, the City of Oak Ridge will work according to the following policies and carry out the stated programs and activities within the ever-changing limitations of its financial resources. The City acknowledges that the provision of housing is chiefly the responsibility of the private housing construction industry. However, it also recognizes that there are gaps in that industry's ability to meet the needs all of sectors of the market or to overcome in a timely manner certain economic forces which govern our urban areas and guide our personal investment decisions. Therefore, the City of Oak Ridge has decided to adopt a "facilitator" role in the housing development process.

In this role, the City will use its regulatory and financial powers to provide strategic incentives for the private housing industry to achieve defined public objectives. The City itself will not act as a housing developer unless absolutely necessary, as, perhaps, in an instance of providing housing through its Housing Authority for the poorest of the community--an activity which the private market is not capable of doing. In all instances, the City will first seek to discover whether private industry can accomplish a policy most effectively through positive inducement before relying on direct public intervention or restrictive regulation. The City will not, however, merely stand back and leave all housing activity to the private market, nor will it just adopt and enforce local regulations

affecting housing. The City will take an affirmative role which involves some degree of risk and intervention, for it feels that housing needs in Oak Ridge warrant this approach.

Also in the facilitator role, the City regards it as its duty to:

1. Coordinate the efficient delivery of public facilities and services which support neighborhood livability,
2. "Leverage" substantial private investment through strategic financial investments or risk-sharing (especially in economically marginal locations which are of long-range importance),
3. Capture any available federal or state housing assistance resources which further municipal objectives, and
4. Assist in the creation and operation of quasi-public organizations which will further public policy.

POPULATION SIZE AND COMPOSITION

Some Oak Ridge residents view the decline of the City's population which occurred during the 1970's with alarm, believing that population growth is good economically and socially. The recent population loss may be explained principally by the declining birth rate and postponed child-bearing (national phenomena) and to a lesser extent by a net loss of young adults. Although many residents view growth positively, some fear overcrowding, the loss of small town atmosphere, or other problems.

Oak Ridge has been moving from a suburban population age profile (high percentages of young and middle-aged adults, high percentages of children, and low percentages of elderly persons) to a central city population profile (more elderly, fewer children, and a less dominant percentage of young and middle-aged adults). This is consistent with the normal maturation process of a community and with national trends for marriage and childbearing. It is expected that the Oak Ridge population profile will begin to stabilize in another decade with a slightly higher percentage of elderly persons than presently unless significant changes occur in migration into or out of the community. Although many children move out of the community after high school, they seem to be replaced by other young adults. These young adults are postponing childbearing and having fewer children than their earlier counterparts did, however, and this is having an effect on the composition of the community. In summary, Oak Ridge has evolved from an unusual to a more normal population age profile. This should not be a source of great local concern but services will continue to have to be adjusted to meet this change.

Oak Ridge exhibits other attributes of a central place or central city. This is not necessarily undesirable, but policy-makers should be aware of it, for it affects many systems and may predispose the City to more success in one course of action than in another. One's understanding of how Oak Ridge works may be heightened if this analogy is kept in mind.

In addition to a declining average household size, relatively large percentage of "empty-nesters" and elderly persons, the City has complete and sophisticated public services and facilities, a relatively high tax rate, a rich choice of social and cultural opportunities, active government, civicly-involved residents and business people, corporate headquarters, highly specialized jobs, and non-typical housing which is relatively high in cost.

Oak Ridge may not be geared to compete with other medium-sized East Tennessee communities when it comes to certain kinds of industrial recruitment, retail selection, home buyers, tax rate, etc. But it may be able to compete with larger cities if it continues to attract the population characteristics which sets it apart from its neighbors, specifically education and income.

POLICY PH-1: The City will attempt to achieve a moderate and steady growth in households and population.

POLICY PH-2: While the Oak Ridge population should continue to be distinguished by its relatively high proportion of persons who have skilled, technical, scientific, professional, and managerial occupations, there must be an increase in the diversity of occupations and incomes from present levels.

Oak Ridge has, since its inception, lost opportunities to increase its population and build civic spirit, as most newly-hired workers at DOE plants have decided to live in other communities.

POLICY PH-3: The City will attempt to increase the percentage of municipal, school, DOE contractor, and other employees who live in Oak Ridge by attracting new and relocated employees, particularly young adults.

Growth Forecast

The Oak Ridge population is expected to undergo a steady increase over the next 20 years and reach approximately 34,500 persons by 2005. The forecast is based on the following assumptions:

1. A 1985 population of 28,881 persons;
2. Approximately 2,800 new full-time jobs in the Martin-Marietta Technology Center, 750 additional jobs in the existing municipal industrial parks and 1,065 other new jobs in retail, service, professional and other supportive industries;

3. That the percentage of these new employees who reside in Oak Ridge will increase from the City-wide average of 39 percent in 1985 to 50 percent in 2005;
4. That the ratio of new jobs to new population will be 1:2.1;
5. That two percent of all DOE/Contractor positions will annually cause an employee to move out of the region and a new employee to move into the region;
6. That the percentage of these replacement DOE/Contractor employees who reside in Oak Ridge rises from 27 percent in 1985 to 47 percent in 2005;
7. That 1,000 industrial jobs are lost and not replaced during the forecast period; and
8. That the rate of natural increase (births over deaths) in Oak Ridge will be 0.15 percent per year in the 1986-1990 period and increase to 0.25 percent per year by the 1996-2000 period.

The number of households is expected to increase from approximately 11,380 in 1985 to 14,216 in 2005, an increase of 2,836 households. The number of school-age children (ages 6 through 18) is expected to increase by 427 by 2005. This forecast increase in population and households should be easily attainable at the rate of housing construction experienced in Oak Ridge during the 1980-1985 period.

A complete description of the Oak Ridge population forecast is presented in Appendix B of this document.

Land Use Plan

The Oak Ridge Land Use Plan (illustrated by Figures 9 and 10) provides opportunities for new residential development, both on the periphery of the urban area as well as on vacant land in mostly-established neighborhoods. The growth forecast (presented above) made reasoned assumptions about the absorption of available residential land which resulted in a modest growth trend. Specific activities of the Land Use Plan should promote population expansion. The forecast population can easily be accommodated in the growth areas of the Land Use Plan and leave room for additional growth.

Infrastructure Financing

The City of Oak Ridge will, after further detailed study, amend its practices and policies relating to the financing and extension of public streets and utilities in a way that is more supportive of residential developers. This topic is described in more detail in the Municipal Facilities and Services Plan of the General Development Chapter.

Resident Recruitment

In cooperation with Martin-Marietta Energy Systems, Inc., the City of Oak Ridge will aggressively market housing opportunities to newly-hired employees at DOE facilities and other businesses and industries of the community.

Martin-Marietta recently established a Welcome Center at the Museum of Science and Energy which will present all of its new employees with housing and other information about Oak Ridge in a manner conducive to gaining their residency. All top executives of the corporation live in Oak Ridge to set the desired example for others.

In a similar manner, the City will work with other major corporations and any other interested firm to attract new (or current) employees. The City will package an attractive collection of materials on housing, shopping, schools, churches, recreation, and social organizations, the arts, and City services and facilities and make this available at no cost to anyone who might be able to use it. The City will concentrate on promoting the fine quality of life features of the community and its high-quality municipal services.

Economic Development Plan

The foundation of the City's efforts to carry out the above policies is its Economic Development Plan as contained in this Comprehensive Plan. Those policies and programs, together with the significant industrial development contributions expected to be made by Martin-Marietta Energy Systems, Inc., are expected to draw numerous additional employees and potential residents to Oak Ridge (refer to Growth Forecast, above).

NEW HOUSING

Oak Ridge does not currently offer sufficient variety, quality, and value in its housing stock to attract a balanced population. A large percentage of its housing stock was built during the war. Many of those units have been modernized and well-maintained but due to their original design, basic features, and other reasons, may not offer equal value to comparably-priced housing in neighboring communities. Some potential buyers of cements may be fearful of not recouping their original investment, or not keeping pace with general increases in housing value, particularly if rehabilitation costs are required.

Housing built in the 1960's, 1970's and 1980's tended to be single-family detached units in the higher price ranges; insufficient numbers of attractive, attached units or lower-priced detached units were built relative to the demand. Adequate expansion of the Oak Ridge housing stock may have been constrained by the City's relatively isolated location which restricts a builder's market; a limited supply of easily developable sites due to the hilly terrain; landowners holding sites off the market; the market's perception of social life, shopping, and taxes in Oak Ridge, which may not be as attractive as Knoxville, its suburbs, or other nearby communities; and vigorous objections to apartment site rezoning by nearby residents in the

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1960's, 1970's, and early 1980's. A relatively low "turnover" rate of owner-occupied housing has also tended to limit the selection of housing units available on the market.

If the City chooses to attempt to attract more young adults, particularly those of higher educational levels, it will need more new housing, affordably priced, and designed according to contemporary urban standards as may be found in large, progressive communities.

POLICY PH-4: The City will use land use planning, zoning and subdivision regulations, and available governmental and private financial means to increase the supply of new detached housing units which are priced to primarily attract the first-time buyer.

POLICY PH-5: The City will attempt to increase the supply of attached housing units for rental and sale according to a market demand, emphasizing attractive architecture and site planning, as well as neighborhood compatibility.

Oak Ridge can greatly affect the appearance and function of its community by where various types of housing are located. The City will retain its suburban-style nature but will limit its marketability if attached housing is restricted tightly to central locations. Or, it can become somewhat more cosmopolitan and promote neighborhood redevelopment if multiple-family housing is sensitively integrated throughout the City.

POLICY PH-6: The City will ensure that attached housing is not restricted to a particular geographic sector of the city, but is integrated throughout the community in an appropriate and compatible manner consistent with adopted land use policies and zoning regulations.

Many mature Oak Ridge residents are very satisfied with their wartime housing. These older units can continue to be attractive and livable if regularly maintained and if confidence in neighborhood vitality is sustained. However, many current residents of older neighborhoods are now approaching the age where a new style of accommodation is desired, although not currently available in Oak Ridge.

POLICY PH-7: The City will promote the availability of housing alternatives for elderly and "empty nester" homeowners and others who may desire them.

Development Opportunities

Just as the Land Use Plan is expected to contribute to an overall increase in population, it is also expected to broaden the supply of housing in terms of types, sizes, locations, and prices. The Land Use Plan will provide a variety of development opportunities for the entire range of housing types, from single-family detached to apartments. Existing neighborhoods in the southeast, southwest, and west will be expanded, and new residential areas

will be created south of East Fork Poplar Creek and in the southwest quadrant. Other new neighborhoods along the southern lakefront area will be developed if DOE transfers additional land to the City. The use of the planned-unit approach to site design will be promoted so as to improve appearances while making efficient use of land. Affordable detached houses will be encouraged by amending the Zoning Ordinance to allow smaller lot sizes than presently possible in the medium-and high-density zones. The Zoning Ordinance will also be amended to allow duplexes in the single-family Zoning Districts under special conditions. Of course, both owner-occupied and rental housing should be available among new developments.

There are some sizable residential tracts available in neighborhoods which are mostly developed. The City will cooperate with interested landowners to find ways to bring such land into productive use while balancing the interests of present residents. Small-lot single-family, two-family, four-family, or townhouse buildings are suggested for such sites by the Land Use Plan to aid economic viability while making a smooth transition to older homes.

Finally, the Land Use Plan will expand housing choice by allowing and encouraging on a limited basis the redevelopment to a higher density of severely deteriorated housing in the north-central portion of Oak Ridge (see Figure 9 and 10). Only a very small number of severely deteriorated housing units exist in Oak Ridge, so infill redevelopment will not be widespread. Also, site planning for housing redevelopment will be done very sensitively and will involve nearby residents. More detail on infill development is presented under the Land Use Plan.

Infrastructure Financing

The City will become somewhat more liberal in its policy toward infrastructure financing, as described in the Municipal Facilities and Services Plan. There will be increased use of general obligation bonding and assessment districts to promote housing development by providing less expensive money and spreading the risk across property tax payers. For privately-financed infrastructure, the City will amend its procedure for charging utility tap-on fees to either allow the fee to be paid by the lot purchaser at the time an occupancy permit is issued or else over a period of time.

Development of DOE Land

Participation with selected developers in the acquisition, resale, design and infrastructure financing of land of which the DOE is willing to dispose is one means of increasing the selection of housing in Oak Ridge. One possible location for such activity is "Site A", shown on Figure 4, Housing Plan. The City may utilize Self-Sufficiency Funds supplied by the DOE to make such developments economically attractive to private market. However, the City will carefully evaluate such investments in relation to the return that may be received by using the same funds to leverage private investment in other difficult sites which are not owned by the DOE. The City will also carefully evaluate the possibility of using density and/or financial

incentives for construction of owner-occupied housing priced at the lower end of the prevailing cost range.

Development of City Land

In conjunction with its housing policies, the City will market a portion of its current property, as well as that acquired in the future from DOE, to address measurable deficiencies in the private sector housing development market. Use of City property for residential purposes will emphasize owner-occupied units in sites designed as Planned Unit Developments under the provisions of the modified Zoning Ordinance described in the Land Use Plan section of this document. In the case of large parcels such as the Federal Office Building Site and Site A, renter-occupied housing units and/or commercial structures may be incorporated with owner-occupied housing into overall site designs. In marketing land for housing development, the City will exercise its authority as property owner to impose appropriate deed restrictions relating to design and construction standards. In the development of each site, the City will take care to introduce housing that is compatible with adjacent residential development in terms of scale, style, and pricing. Moreover, the City will provide residents of adjoining neighborhoods full access to the planning process before marketing activities are undertaken. All site designs for development of City-owned land will appropriately take into account the need for neighborhood park space.

Private Housing for the Elderly

Just as the City will actively promote increased resident recruitment and new housing development, it will also take steps to encourage the private construction of attractively-designed and competitively-priced housing for the elderly. By encouraging those over age 60 to invest in these alternative housing opportunities, the City will accomplish several important objectives: (1) provide housing that requires little personal maintenance, (2) provide social opportunities and sense of community for the elderly (especially singles), (3) retain members of the community, and (4) stimulate the sale of large, single-family homes to younger families with children.

The City will identify potential sites for such housing and contact business-people and non-profit development organizations which have successfully completed such projects in the Oak Ridge/Knoxville metropolitan area. Prior to discussions, the City will have established a set of design objectives with the assistance of gerontology experts, will have done some preliminary investigation into the availability and asking price of the candidate sites, and will have determined what incentives it may potentially offer to the successful developer. Possible incentives include revenue bonding for mortgage financing, "write-down" of land price using Community Development Block Grant funds (tied to eligibility requirements for a portion of the dwelling units), increased zoning density, and decreased parking requirements. If a single candidate site can be identified and an option to purchase obtained, a design and price competition can be conducted among solicited developers. Throughout the process, the City will remain mindful that it is offering a profit-making opportunity with public objectives, not developing subsidized housing, and will conduct the negotiations accordingly.

Housing Development Information

The City of Oak Ridge will establish and regularly update a base of housing and land development information for Oak Ridge along with a clear and understandable description of the municipal approvals process in Oak Ridge. The land development information will be the same as that described under the Land Use Plan and may be utilized for any development effort. Such information will be made available to any interested developer, realtor, or citizen as a means of promoting investment in the City. The City will also distribute monthly or quarterly statistical summaries to local financial institutions, realty office, and corporate personnel offices. Examples of the information to be collected will include but not be limited to:

- Land Use Plan Map and Zoning Map,
- Utilities and roads maps,
- Existing land use map,
- Topographic map,
- Map and listing of public properties for sale,
- Building permit activity, and
- Other information as contained in the City of Oak Ridge Development Handbook (1984).

Mortgage Revenue Bonds

The City of Oak Ridge will encourage all local lending institutions to participate in Tennessee Housing Development Authority programs which create pools of below-market rate home mortgage money for first-time buyers and builders. Participation in a State Mortgage Revenue Bond program is judged to be more cost effective than mounting such a program locally. Should state action not be forthcoming, the City will review the feasibility or other mortgage revenue bond alternatives.

HOUSING CONDITION

Oak Ridge does not have any residential neighborhoods that may be characterized as blighted, thanks to remodeling, regular maintenance, and inspections. However, a portion of the wartime housing, particularly the "flattops" and the attached housing located in the north-central portion of the community, exhibits minor deterioration and some scattered major deterioration. Large segments of the housing stock are liable to slip at one time into conditions of major deterioration, vacancy, and abandonment due to the age of this housing, its construction techniques, its site features, the average income of its residents, and its high percentage of rental occupancy. Perhaps the major stabilizing force in these neighborhoods is their long-time residents, who, of course, cannot be counted on to maintain their homes forever.

There have not been publicly-assisted programs of housing improvement or maintenance in effect in Oak Ridge other than Building Code inspection and voluntary compliance. Neither has there been an aggressive public program to remove severely dilapidated structures except for that conducted by the Atomic Energy Commission prior to sale of land in the 1950's.

Advantages of municipal financial assistance in housing rehabilitation include protection of major public and private investments, increased confidence in older housing as an investment (particularly for first-time buyers), and the provision of decent housing for the less fortunate. The older residential areas of the city are an essential resource which must be carefully managed for long-term quality. These homes and their occasional replacements can remain highly desirable to young and old families alike with proper community involvement.

POLICY PH-8: The City will assist in the stabilization of housing which is in "good" or "fair" condition and the improvement of housing which is in "poor" condition through code enforcement, public education, technical assistance, and limited financial assistance.

POLICY PH-9: As a last resort, the City will encourage the removal and replacement of housing which, because of its "deteriorated" condition is not economical to rehabilitate.

POLICY PH-10: The City will promote the gradual replacement of deteriorating multiple-family (3 or more dwelling unit) housing remaining from the 1941-1945 period with other housing or other appropriate development.

POLICY PH-11: The City will attempt to stabilize or improve the physical condition of post-war, multiple-family housing through regulatory means.

Other public investments in neighborhoods can also promote or enhance private residential spending for rehabilitation. Such investments indicate that local government is concerned about residential stability and has not abandoned a neighborhood.

POLICY PH-12: The City will support the maintenance of neighborhood quality through the provision of sound public utilities, streets, and other public facilities.

POLICY PH-13: The City will cooperate with organizations which will play an active role in neighborhood activities and, thus, promote neighborhood quality.

Local regulatory mechanisms can also encourage or depress private investment in rehabilitation, redevelopment, and/or new development at little direct cost to the City. Such regulations must be consistent with the City's overall strategy for an area. The land use plan and zoning ordinance may be used effectively, but care must be taken that neighborhood evolution is orderly and sensitive to the housing worth preserving.

POLICY PH-14: The City will encourage sensitive redevelopment of deteriorated neighborhoods by increasing land values through regulatory changes which allow more intensive but compatible residential development.

POLICY PH-15: The City will increase compatibility through strict enforcement of the Oak Ridge Land Use Plan and Zoning Ordinance, land use conflicts which negatively affect housing.

Housing Rehabilitation Loan Program

The City of Oak Ridge will use a portion of its annual Community Development Block Grant (CDBG) funds to subsidize the interest on bank loans used for housing rehabilitation. This program will be made available in the CDBG Target Areas (see Figure 4, Housing Plan) to owner-occupants who meet City-defined income guidelines which are consistent with the intent of the CDBG Program. Allowable improvements to be financed by loan proceeds will be those relating to the City's Building Code as identified by inspections of applicant's structures performed by City personnel. A single payment for each loan will be made by the City to participating banks to reduce the interest rate on each approved loan from the market rate to some level substantially less. (The actual subsidy rate has yet to be determined.) Completed work will be inspected by the City before issuing lien waivers to contractors. The City will supply a list of approved, reputable contractors to facilitate obtaining bids for the work identified by the City inspection.

Homeowners may use the loan proceeds to purchase materials and do part or all of the work themselves within the restrictions of the Building Code. These loans may be packaged with Housing Rehabilitation Grants, described below.

The timing for the initiation of the Housing Rehabilitation Loan Program (as well as the Housing Rehabilitation Grant Program), its budgetary commitment, and its target area will be based upon further research into housing conditions. Possible methods of housing condition evaluation include exterior surveys, the ongoing Advisory Housing Inspections, and, possibly, a comprehensive Certificate of Re-occupancy program involving periodic interior inspections.

If the Tennessee Housing Development Authority or any other agency of the State should ever create a similar housing rehabilitation loan program, the City shall publicize it locally and integrate it with its own efforts.

Finally, should outside funding sources for this program, such as the CDBG program, be eliminated or reduced to the point of ineffectiveness, the City will investigate the use of alternative financial mechanisms, such as revenue bonds.

Housing Rehabilitation Grant Program

A portion of the City's annual CDBG Funds will be used to provide grants to low-income owner-occupants to perform Building Code related improvements within the CDBG Target area. This program may be used either by itself or as a supplement to the Housing Rehabilitation Loan Program when a participating bank determines that an applicant's income does not qualify him for an interest-subsidized loan of sufficient amount to accomplish the approved repairs, the cost of which has been estimated by contractors' bids. The

intent of this program is to serve homeowners who need home improvements but are not financially capable of obtaining a home rehabilitation loan. Restrictions on the use of grant funds would be similar to those described relative to the grant program.

Scattered-Site Redevelopment Assistance

Tennessee law grants considerable autonomy to local housing authorities, limiting the role of municipal government to that of approving general redevelopment plans. The City could not, therefore, direct the Oak Ridge Housing Authority to address specific components of the Comprehensive Plan. It should, however, coordinate its efforts with the Authority and encourage that agency to make full use of programs available to meet the housing needs of low and moderate income citizens.

The City will encourage the Oak Ridge Housing Authority to promote the redevelopment of dilapidated or otherwise "blighted" residential land by private profit-making or not-for-profit organizations. The Oak Ridge Housing Authority could "leverage" private investment in new housing development on such sites by working in a partnership role with developers. The Housing Authority could provide a variety of forms of assistance as individual circumstances may suggest. Broadly, these may include:

1. Assembly of blighted properties (as defined by State Statutes) in order to form suitable development sites,
2. Preparation of the site or adjacent public facilities,
3. Land price "write-down", and
4. Land resale with contingencies. Potential funding sources include Community Development Block Grant funds, the "tax increment financing" provisions of the Housing Authorities Statute (Chapter 8, Section 13-817(c), Tennessee Statutes), revenue bonds, general revenues, and utility funds.

Such direct financial participation in redevelopment projects is intended to supplement and assist but not replace the entirely private housing redevelopment which is to be encouraged by allowing selective density increases in the north-central portion of the City when replacing blighted housing. The criteria for promoting private redevelopment of severely deteriorated housing are listed in the Land Use Plan. These two approaches may be utilized concurrently.

The Oak Ridge Housing Authority could regularly identify a range of possible redevelopment projects and actively market these partnership possibilities to organizations which have a track record of successful small-site projects, particularly projects involving a government agency in a redevelopment function. Small, local builders with good reputations and a willingness to work through the details of such a business transaction will not be overlooked. Non-profit housing development organizations from the Knoxville area or nearby should be especially sought.

Beyond coordination with the Housing Authority, the City will consider other mechanisms to address the need for scattered-site redevelopment assistance. For example, the City's Industrial Development Board will be encouraged to favorably consider proposals from private developers for residential and/or commercial redevelopment.

If private organizations cannot be found who are interested in building the sort of products in the price range desired by the Housing Authority, the City will consider establishing a task force of local realtors, bankers, and citizen activists who will pursue the creation of a local non-profit community development corporation.

That semi-public organization, authorized under Chapter 53 of Tennessee Statutes and having a board of directors of local citizens, will seek to identify viable business opportunities (which are coincident with local needs) that are not being taken advantage of by other enterprises or the City of Oak Ridge. The community development corporation will perpetuate itself by forming temporary business relationships with the City of Oak Ridge and if advisable, other nearby communities; by securing additional federal or state funding through these municipal corporations; and also by securing private foundation grants. The creation of such an organization is viewed as a long-term objective of Oak Ridge. It would be undertaken if other partnerships are not readily forthcoming to meet affordable housing development needs.

Design and Maintenance Standards for Housing

The City of Oak Ridge will promulgate and adopt a certificate of re-occupancy ordinance regulating the minimum design and maintenance of dwelling units. This ordinance will be intended to assure at the point of dwelling occupancy that the residents may enjoy minimum health and safety standards.

Maintenance of Public Facilities in Existing Neighborhoods

The City of Oak Ridge will support investor and resident confidence in older neighborhoods by continuing its high standards of maintenance for streets, utilities, and parks. Lower-income areas will not be neglected in this regard. In fact, they will receive special attention because the City is aware of the importance of public investments in supporting neighborhood stability. Moreover, in identified neighborhoods, the City will continue to supply financial assistance to the extent possible for maintenance costs which are normally charged to property assessments or utility bills.

Advisory Housing Inspections

The City of Oak Ridge will provide inspections of housing conditions and advice regarding needed rehabilitation or energy conservation, local contractors, local "how-to" classes and financial assistance. This service will be widely advertised as a means of promoting interest in housing maintenance and long-term cost savings. No improvements will be forced upon property owners as a result of this program.

HOUSING ASSISTANCE FOR THE NEEDY

A substantial portion of the total number of low-income householders in Oak Ridge are living in deteriorated housing and paying an abnormally high percentage of their income to do so. The City, with the considerable assistance of the federal government, already assists about 25 percent of the needy families and about 75 percent of the needy elderly households. Further assistance is limited by financial resources. The City continues to seek increasing housing assistance from the federal government through established programs.

One sign of an advanced society is the care shown toward those members who cannot fully care for themselves. In today's housing market, private interests are almost never able or willing to supply decent housing for the poor.

POLICY PH-16: The City will continue to support federal rent assistance to that portion of the community which cannot afford decent housing and will promote with federal, state, and local resources the development or rehabilitation of housing designed for and affordable to those of low and moderate income. To the extent possible, such housing will be distributed throughout the community.

POLICY PH-17: The City will explore means of developing new housing, or rehabilitating existing owner-occupied housing, for low-income persons.

Rent Assistance

The Oak Ridge Housing Authority will be encouraged to continue to provide rent assistance through the federal Section 8 Rental Housing Assistance Program as that funding is available. Additionally, the Housing Authority will be encouraged to continue to conduct research and establish housing assistance goals, seeking outside financial assistance to meet them as it has done in the past. These goals may address public housing, leased housing, and subsidized housing for the elderly or handicapped.

Subsidized Housing for the Elderly

Special attention should be paid by the Oak Ridge Housing Authority to the housing needs of the elderly. Available federal and state programs should be used to complement local efforts to construct alternative housing opportunities for the elderly who may not otherwise be able to afford decent housing. Local efforts to develop such housing will utilize revenue bonds, tax increment financing, CDBG funds, revenue sharing funds, and other local resources in conjunction with federal rent assistance monies to leverage private investment through non-profit housing development corporations. Alternatively, the Oak Ridge Housing Authority may develop, own, and manage such housing.

Research and Monitoring Efforts

The City staff will monitor on a regular basis:

- housing conditions,
- housing prices,
- housing rehabilitation,
- housing needs by household type,
- displacement of low-income households (if any),
- housing vacancy by type,
- housing development by price range,
- housing land availability, and changes in federal or state regulations pertaining to rent assistance, subsidized housing development, housing rehabilitation, and revenue bonding.

Some of this material will be published as part of the City's land development and housing resources data service.

HOUSING PROGRAM MANAGEMENT

A number of City and Housing Authority staff members will be involved to varying degrees in the implementation of the Housing Plan because the Plan's policies and programs involve a wide range of different activities and municipal functions. The various activities are categorized below.

Planning and Research

- Research and monitoring.
- Preparation of statistics and reports.
- Preparation, administration, and interpretation of housing surveys.
- Preparation of Housing Assistance Programs or other housing objectives.
- Amendments to the Housing Plan.
- Review and improvement of site plans, subdivisions, special use permits, and, planned-unit developments.
- Revisions to and interpretation of the Land Use Plan.
- Research into available local financing mechanisms for housing assistance (e.g., revenue bonds, tax increment financing).

Ordinances and Regulations

- Preparation of ordinances pertaining to housing maintenance standards and housing discrimination; enforcement of same.
- Revisions to infrastructure financing practices.
- Revisions to zoning and subdivision ordinances.

Finance and Budgeting

- Preparation of capital improvements programs and annual budgets.
- Financing of all forms of housing development and redevelopment in which the City may be involved.

Development Administration

- Housing for the elderly.
- Publicly-assisted infill and redevelopment.
- Public housing.

Other Housing Administration

- Loan and grant programs.
- Rent assistance programs.
- Public Housing.

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ECONOMIC DEVELOPMENT



Economic Development Analysis

The purpose of this chapter of the Oak Ridge Comprehensive Plan is to review the major issues and problems related to the City's economic development, analyze their causes, and develop strategies which specify how local government will assist and interact with the key actors in the economic development process. The overarching intent of this plan component is to provide the community and local decision-makers with firm direction for future economic development.

The economic development component of the Comprehensive Plan is an effort to construct a realistic set of strategies intended to bridge the gap between idealistic visions of a future Oak Ridge and limited available local government resources. As subsequent sections illustrate, there is a rich composite of human and capital resources in the community which can be used to construct foundations for a long-term public-private partnership in economic development. The continuing challenge is to identify these resources and develop mechanisms for coordinating and applying them to business recruitment, retention, and expansion in a way that maximizes local assets and helps to resolve common concerns with the City's image, environmental quality, and overall quality of life.

The Analysis of Conditions is presented according to the following sections:

- Economic Issues and Problems in Oak Ridge,
- Key Actors and Their Roles, and
- Employment and Economic Base Characteristics

This plan should not be expected to specify exactly what type of industry should be situated on a specific parcel nor should it be expected to prescribe what sort of landscaping treatment is most aesthetically appropriate for a particular commercial site. Those sorts of decisions may be guided by the policies of this plan but determined in the final analysis by the tools for implementing this plan, such as the City's Zoning Ordinance or industrial park design plans.

The continuing vitality of this plan will require continual adjustment and fine-tuning to adapt to inevitable change in the community. Such adjustments to the strategies finally agreed upon are essential not only to renew their usefulness as expressions of how to implement the community's highest hopes and aspirations but also to overcome the obviously limited clairvoyance of the plan authors.

ISSUES AND PROBLEMS IN THE ECONOMIC DEVELOPMENT OF OAK RIDGE

A series of meetings attended by many Oak Ridge residents, members of community organizations, and local business and area industries produced several economic development issues and problems of common concern. These commonly shared concerns line up along four basic issue dimensions:

1. Uncertainty surrounding the future of the city;
2. Conflicting attitudes within the community about the desirability and nature of future economic development;
3. Concern about capturing a larger share of Oak Ridge employees who also reside in the city, attracting a larger variety of employers to promote a more balanced economy and enhancing efforts to become a more self-sufficient city; and
4. Need to define the appropriate local government role in the economic development process.

The theme common to all of the major issues identified is the essential concern about enhancing the future economic and social vitality of the community while preserving those features unique to the community that contribute to a very pleasant, distinct quality of life. Underlying this common theme is the tacit recognition by many citizens that contemporary economic development issues and problems are intertwined in a complex web of historical, social, and economic factors--many of which are beyond the power of local government alone to change or control. Nonetheless, it is incumbent upon those who seek to prepare for and shape the future of the city to analyze some of the causes of the perceived economic problems in Oak Ridge, sift through the findings on the character and composition of the local economy, and act to mitigate weaknesses and capitalize on the considerable strengths of the community.

Uncertainty

One of the most ethereal yet persistent issues related to the Oak Ridge economy is that of uncertainty about the future economic viability of the city. There are several reasons for this. One is the city's historical dependence on the federal government which is perceived to make the city more vulnerable to the vagaries of national level politics. This perceived vulnerability allegedly dampens investment in the community, raises the specter of a potentially massive shift in tax burden to private individuals, businesses, and industries, and clouds the city's competitive position, vis-a-vis surrounding jurisdictions, for new economic development.

There is little doubt about the deleterious effects that would occur if this "Hong Kong syndrome" is realized. Therefore, the pathology of this issue should be traced and fully analyzed.

Federal Government Influence

Several factors have affected the rate and character of growth in Oak Ridge as well as the city's competitive position in attracting industrial, commercial, and residential development. One of the most obvious factors is that Oak Ridge was created by the federal government and therefore the purpose, location, physical design and economic base were predetermined according to federal criteria. Many of the features that made Oak Ridge an ideal site for the federal government's Manhattan Engineering District--its isolation, rough terrain, and sparse population--have served to deter the city's economic growth through more customary means. While most cities develop as a result of proximity to transportation networks, natural resources, markets or a combination of all of these, Oak Ridge was created for a single purpose--the defense and security of the United States. Therefore the growth and development of the city has been dependent not on typical market forces of supply and demand, but instead upon the federal government's research, development, and production activities, all of which have strongly influenced the city's physical, social and economic environment.

Past federal government management practices have dampened the city's competitive position for new developments. During the 1940's and 1950's, when the Army and the Atomic Energy Commission maintained full ownership and control of the city, little was done to encourage the development of privately-owned urban facilities such as churches, shopping centers, private industries, and recreation areas. In fact, the early planners of Oak Ridge did not envision much more than a temporary bedroom community to house project-related personnel. Privately-owned heavy industries were not planned to be a part of an incorporated Oak Ridge. Consequently, when the City was incorporated in 1959, a private-sector industrial base along with supportive industrial service firms were nonexistent.

The legacy inherited from the federal government is considered by many to be a mixed blessing. Beyond the limitations related to location, topography and land availability, the single most significant deterrent to attaining greater self-sufficiency and reducing anxiety about the future of the city is the fundamental weakness in the City's tax base and structure. On the other hand, the large federal investment, payroll and service requirements over the last 30 years have afforded the community a level of economic stability and prosperity, and quality of urban services unrivaled by most cities of similar size in the region and state.

On the negative side, over 60 percent of the land area of the City consists of nontaxable federal properties. Moreover, the disparity between current federal in-lieu-of-tax formula payments and the revenue that would be realized if the federal government paid full tax equivalency is still very large despite an increase in the FY 1985 payment. (Oak Ridge received approximately \$3.5 million in FY 1985, up from \$2.7 million in FY 1984.) This large disparity has produced one of the highest effective tax rates in the State of Tennessee.

Although this high tax rate is partially a function of the 0.75 cent sales tax compared with the 2.25 cent local sales tax common in other jurisdictions, Table 14 clearly illustrates that the effective tax rate in Oak Ridge is much higher than jurisdictions of similar size in Tennessee. In addition, Table 15 clearly shows that the Oak Ridge tax structure more closely resembles that of a suburban bedroom community (i.e., Germantown, Bartlett, or Hendersonville). The high proportion of revenue derived from residential and farm property indicates that Oak Ridge residents pay a disproportionately higher share of property taxes than their counterparts in many other cities of similar size. The uncertainty surrounding the amount and duration of federal "in-lieu-of-tax" payments heightens concerns about the city's ability to break-out of the cycle of dependency engendered by the disincentives inherent in federal underpayments. As many citizens noted in public meetings, the best way to resolve this uncertainty is to arrange an equitable, long-term payment schedule with DOE and Congress. However, as Table 16 indicates, federal payments as a proportion of the total budget continues to decline. This fact underscores the inequity of the current arrangement.

On the other hand, the large federal payroll and urban service requirements of DOE and its employees have produced a solid record of relatively stable population and employment levels, high incomes, and a high quality of urban services. Over the past 30 years, federal projects and activities have afforded the community a relatively high level of economic stability and prosperity. The City has experienced relatively stable employment during 1960 to 1980. Likewise, there has been stable, yet consistently superior median family income for Oak Ridge compared to surrounding jurisdictions and the state between 1969 and 1979.

This economic stability has persisted despite fluctuations in employment at various DOE facilities and despite the loss of several major new projects such as the Clinch River Breeder Reactor. In fact, Oak Ridge has had more reason to be confident about its economic viability than many other towns dominated by single durable goods industries such as auto products, machinery, appliances or steel which are more closely tied to fluctuations in the national economy. This is not to say that the national and international market for enriched uranium does not affect, for instance, employment levels at K-25. It merely points out the historical fact that decline of employment at one facility has been compensated for by employment increases at other facilities.

TABLE 14

Municipal Tax Rates for Selected Jurisdictions in Tennessee

<u>Jurisdiction</u>	<u>Actual Tax Rate (Per \$100 Assessed Valuation)</u>	X	<u>1982 Appraisal Ratio (Percentage)</u>	=	<u>Effective Tax Rate (Per \$100 Assessed Valuation)</u>
Bartlett	\$ 2.00		82.95%		\$ 1.65
Bristol	3.63		58.93		2.13
Cleveland	2.00		54.88		1.09
Columbia	2.05		41.65		.85
Cookeville	1.20		53.54		.64
Dyersburg	2.50		60.22		1.50
East Ridge	.70		95.12		.66
Gallatin	2.10		51.97		1.09
Germantown	2.16		82.95		1.79
Hendersonville	.90		51.97		.46
Johnson City	3.74		41.93		1.56
Kingsport	2.80		58.93		1.65
Maryville	4.14		51.58		2.13
Millington	2.00		82.95		1.65
Morristown	4.85		44.83		2.17
Murfreesboro	3.10		50.60		1.56
Tullahoma	1.73		93.66		1.62
Knoxville*	2.98		100		2.98
Knox County*	2.17		100		2.17
Anderson County*	3.58		100		3.58
Roane County*	3.48		60		2.09
OAK RIDGE*	3.51		100		3.51

* 1983 Tax Rates

Source: State Board of Equalization, 1982 Tax Aggregate Report of Tennessee. April 1983.

TABLE 15

Distribution of Total Assessed Property
Tennessee Cities of Between 15,000
and 45,000 Population, 1982

<u>City</u>	<u>Industrial & Commercial</u>	<u>Residential & Farm</u>	<u>Personal Tangible</u>	<u>Greenbelt Properties</u>	<u>Public Utilities</u>
Bartlett	12.0%	76.5%	2.8%	.200 %	8.5%
Bristol	34.3	42.4	11.8	.050	11.3
Cleveland	42.6	33.3	18.8	.040	5.7
Columbia	39.6	44.6	9.5	.130	7.2
Cookeville	41.7	33.6	15.5	--	9.2
Dyersburg	38.9	42.4	12.0	.130	6.4
East Ridge	40.8	53.3	3.2	--	2.8
Gallatin	41.0	41.4	13.3	.540	3.8
Germantown	9.8	85.0	1.9	.290	3.0
Hendersonville	24.6	66.9	5.2	.100	3.2
Johnson City	42.3	34.4	15.6	.050	7.5
Kingsport	42.4	29.7	20.8	.270	7.0
Maryville	36.4	53.0	5.3	--	5.4
Millington	39.4	37.4	11.8	.170	11.1
Morristown	43.6	23.0	25.7	.005	7.5
Murfreesboro	46.8	33.9	14.0	.150	5.2
OAK RIDGE	30.2	57.8	3.1	--	9.0
Tullahoma	35.0	50.4	8.6	1.100	4.9

Source: Tennessee Taxpayers Association. The 1983 Annual Survey of State and Local Government in Tennessee. November 1, 1983.

TABLE 16

General Fund Revenues,
Property Taxes, and In-Lieu-Of-Tax Payments

Fiscal Year	Total General Fund Revenue ¹	Federal In-Lieu- of-Tax Payments ²	General Property Taxes	Percentage of General Fund	
				Federal In Lieu of Taxes	Property Taxes
1960	\$ 1,482,829	\$ 1,247,000	*	84.1	*
1961	3,750,686	2,472,106	736,608	65.9	19.6
1962	2,677,419	1,238,740	859,495	46.3	32.1
1963	2,833,336	1,228,740	905,239	43.4	31.9
1964	2,935,969	1,230,000	953,528	41.9	32.5
1965	3,040,704	1,252,000	1,023,770	41.2	33.7
1966	3,250,012	1,302,480	1,110,685	40.1	34.2
1967	3,487,499	1,373,160	1,233,909	39.4	35.4
1968	3,967,383	1,474,130	1,626,905	37.2	41.0
1969	4,507,116	1,524,613	1,776,562	33.8	39.4
1970	4,824,880	1,534,710	1,911,726	31.8	39.6
1971	5,222,889	1,701,305	2,186,613	32.6	41.9
1972	4,968,444	1,771,984	2,347,199	35.7	47.2
1973	5,501,317	1,787,129	2,488,278	32.5	45.2
1974	5,964,333	1,927,479	2,859,954	32.3	48.0
1975	6,479,352	1,976,946	2,909,762	30.5	44.9
1976	7,205,966	2,096,585	2,989,900	29.1	41.5
1977	7,024,040	1,819,443	3,218,653	25.9	45.8
1978	8,384,011	2,538,473	3,412,674	30.6	40.7
1979	8,649,033	2,204,636	3,919,197	25.5	45.3
1980	9,557,382	2,090,245	4,330,030	21.9	45.3
1981	10,250,395	1,959,863	4,409,152	19.1	43.0
1982	11,501,619	2,381,775	5,232,064	20.7	45.5
1983	11,419,492	1,933,386	5,918,760	16.0	51.8
Budget 1984	12,361,634	2,168,913	6,215,258	17.5	50.3
Budget 1985	13,562,728	2,143,577	6,478,424	15.8	47.8

¹Does not include \$2,250,000 received from the Japanese Uranium Settlement during FY 1971 - 1980.

²Includes P.L. 81-874 funds received by the Oak Ridge Schools in FY 1976.

Source: City of Oak Ridge Budgets 1960 - 1985.

This same tendency may hold true if the K-25 enrichment activities are discontinued. A draft report released in January, 1985, by Science Applications International suggests that job losses at K-25 and Boeing, coupled with secondary employment reductions, could result in more than 3,000 lost jobs. The loss of 1,200 to 1,700 employees at K-25 may at least be partially offset by absorbing perhaps 40 to 50 percent of these employees at other plants and facilities. Thus, the direct effects of employment and income loss could be somewhat mitigated while also deflecting adverse indirect impacts. The loss of jobs at Oak Ridge facilities will have a definite impact on the region. However, if just 40 percent of the K-25 workers are transferred to other DOE facilities, this means that closure of a major portion of K-25 operations will affect 1,020 employees, 25 percent of which are Oak Ridge residents (on the average). This loss of 255 local employees may translate into approximately 330 other lost jobs. One could conclude, based on these assumptions, that the direct and indirect employment and income loss, while significant, will probably not devastate the local economy.

The continued emphasis on national defense and security, the likely appearance of other new federal research and development projects to replace some current K-25 operations, if they are lost, and the possibility of a long-term, equitable federal payment schedule with the City are reasons for instilling confidence and optimism in the vitality of the local economy. From this perspective, potential investors in the community can be provided with a record of local stability, and welcomed by a receptive development climate that reflects justifiable optimism for the future growth and development of the city. Development of strategies designed to capitalize on the community's strong points and for securing a long-term, equitable financial arrangement with DOE should be an integral part of the economic development plan.

Access and Land Development Constraints

From a locational standpoint, the urban center of Oak Ridge is now ten miles from the nearest interstate highway and about a 45-minute drive from the closest commercial airport. However, the city is served by an excellent primary transportation system which connects the city with outlying areas. Consequently, commuters from West Knox County and elsewhere can travel to the Department of Energy facilities in Oak Ridge in less time than some Oak Ridge residents living at the far eastern end of the city. As explained in the housing component of the Comprehensive Plan, these factors have contributed to the locational noncompetitiveness of Oak Ridge as a place of residence for employees at the Department of Energy and contractor facilities. This in turn has implications for commuter patterns, the local tax base, the proportion of income spent within the city, and the demand for local service and commercial developments. The cause for concern is that Oak Ridge is not capturing a large enough share of resident employees and consequently is not capitalizing on the full, positive economic potential of new job generation in the community. It is argued that one factor in the employee's residence location decision may be the uncertainty associated with the potential difficulty and possible value lost in home resale due to the uncertainty of future federal funding of some DOE operations.

In contrast to outlying areas, the land within the corporate boundaries of Oak Ridge has limited suitability for many types of development. Higher site preparation and engineering costs, and distance from the interstate and a commercial airport are factors which act in concert to diminish the city's immediate potential for attracting some types of residential, business, and industrial developments for which these factors have high priority in the locational decision process.

Conflicting Attitudes About Economic Development

Another issue identified in the community meetings concerned the apparent tension between certain factions in the community. This is usually erroneously framed in terms of a conflict between proponents of the status quo and advocates of growth. Such a "conflict" is common to many communities that undertake serious self-evaluation before embarking on a plan for the future of the city. First, it is obvious that change is an inevitable occurrence. Second, it is clear that the city will not experience rampant, unbridled growth if even the most vociferous community booster were to have free rein. The essential concern is to preserve those features of the community that contribute to a high quality of life while directing and shaping change in a way that complements this quality of life. This means that a careful, deliberate effort should be made to maximize the benefits derived from the development of the remaining space suitable for business and industry while preserving the aesthetic and environmental quality of the community. This preservation should be directed at neighborhoods, housing stock, recreation and park properties, transportation flow, urban services, and water and air quality. By respecting and protecting these elements of community life, the economic development plan itself becomes a key instrument for achieving economic vitality and for ensuring that future generations will experience the same community amenities and quality of life as present residents.

Definition of the Appropriate Role of the Local Government

The crux of the economic development plan in the opinion of many participants in the community workshops is definition of the appropriate role and function(s) of local government in the economic development process. The sense of the citizen responses received indicates that local government can and should provide both the forum and the sense of purpose that are needed to coalesce those who control needed resources, who influence vital decisions and who possess needed expertise. Beyond that consensus, questions emerge which relate to what can and should the City government do in the economic development process? How should it relate specifically to other key actors in the development chain? Who or what organizational mechanism will provide needed leadership in economic development? What public financial resources can and should be brought to bear on attracting business, tourism and industry, providing locational incentives and assisting business expansions? What role should citizens in the community have in the economic development decision process?

KEY ACTORS AND THEIR ROLES

Before strategies can be developed which might entail altered roles and activities by the key actors in the development process, some attempt to describe existing organizational relationships and activities is necessary. The identified key actors currently involved in the development process, to some extent or in some way include the City, private industries, DOE, and the Chamber of Commerce and its branch organizations. Many other local and area groups and organizations also have roles in the economic development process. These include the Tennessee Technology Foundation, the Melton Hill Regional Industrial Development Association, the Oak Ridge Convention and Visitors' Bureau, the Roane-Anderson Economic Council, the Committee of 50, and political leaders at the state and national level.

The most prominent leaders or actors in the current economic development arena include the City Council, the Mayor, and the City management staff, the Martin Marietta Corporation, selected leaders in the Oak Ridge Chamber of Commerce, and the management personnel at DOE that work with the City on a fairly regular basis. The roles and functions of each of these major actors in the key organizations should be reviewed and analyzed.

City of Oak Ridge

To date, some of the key economic development functions undertaken by the City include:

- Negotiating with and acquiring land from DOE;
- Developing new industrial park land;
- Improving the infrastructure of existing industrial parks and extending utilities and urban services to Sites B and C (south of Valley Industrial Park) and property adjacent to the defunct Clinch River Breeder Reactor site as well as other areas;
- Financial support of economic development activities by City staff, the Oak Ridge Chamber of Commerce, the Convention and Visitors Bureau and other organizations;
- Construction of an industrial "incubator building," development of a DOE property acquisition plan, an annexation plan, and a Capital Improvements Plan to support economic development;
- Site "packaging" and marketing for new residential developments;
- Implementation of an incentive program to provide grants to companies moving into the area that are tied to specified levels of new taxable real or personal property; and
- Cooperating with Martin Marietta in the implementation of their proposals for expanding the economic growth and potential of Oak Ridge.

The City Council and Planning Commission members, and several City staff members have all participated in these activities. To date the City can be described as playing an active "developer-facilitator" role as opposed to a more reactive "regulator" or a nonparticipative "laissez faire" role in the city's economic development process. The crucial issue is how the City can enhance this role and whether it can more effectively utilize or capitalize on the resources it is channeling into the development process.

Martin-Marietta Energy Systems, Inc.

The Martin-Marietta Corporation's recent arrival in the community has been accompanied by a flurry of activities and projects related to the area's economic development. Their plan to contribute to the city's growth and quality development is delineated in Volume IV, "Community Involvement Proposal." Among the major facets of this sterling example of active corporate citizenship are the following:

1. Development of a 295-acre business park near Union Valley and Bethel Valley Roads, as well as acquisition and development of an additional 64 acres southeast of the proposed park. The Martin Marietta business park will anchor the northern end of the Technology Corridor.
2. Development of the Tennessee Innovation Center designed as a technology incubator for launching high-tech businesses and spin-off industries from ORNL R&D projects.
3. Investment of 10 percent of Martin Marietta's annual fee as new venture capital in Oak Ridge.
4. Placement of \$15 million of corporate procurement in East Tennessee.
5. Investment of over \$1 million locally in joint university/government/industry research.
6. Sponsorship of a center for manufacturing systems engineering.
7. Promotion of Oak Ridge as a place of residence for its employees.
8. Promotion of industry sponsorship of the American Museum of Science and Energy, and contributions to local educational, cultural, civic, health and welfare organizations.

Chamber of Commerce

One of the most active Chambers of Commerce in East Tennessee is the one located in Oak Ridge. Its members have formed an Executive Committee and departments dealing with economic development, retail and wholesale business development and community affairs. It is hard to estimate the exact extent of the Chamber's contributions to the community's development because of their broad attack on a number of issues on a wide variety of fronts. However, its members have been involved to some extent in virtually every major undertaking related to economic development. Strategies aimed at

concentrating and focusing the Chamber's resources on a more limited number of activities might hold some potential for maximizing the effectiveness of their talents and financial resources.

Coordination of Roles

It would probably not be an understatement to note that the major role in recruitment of new industry to Oak Ridge will be assumed by Martin Marietta. These recruitment activities, planned investments and corporate commitments represent a major new force for economic development in the community. The community welcomes all of these efforts by Martin Marietta. The arrival of such a "pro-active" force in the community requires reassessment of the purpose and function by other actors in the process to ensure that resources and projects are coordinated to the greatest extent feasible--both to complement Martin Marietta's activities and to fill in any "cracks" in the realignment of economic development functions. Such "cracks" that might need to be filled include recruitment efforts by the City and Chamber of Commerce directed at those firms who do not meet Martin Marietta's requirements for location in their industrial park, or those firms that might not be in the vanguard of high technology but are labor intensive, high wage and salary profile industries.

EMPLOYMENT AND ECONOMIC BASE CHARACTERISTICS

This section of the Economic Development Plan consists of a description and appraisal of the key characteristics relevant to the local economy in Oak Ridge. The key topics covered include community income, employment, labor force characteristics and retail sales. A discussion of demographic and personal income characteristics is presented in the Population and Housing chapter of this Plan.

Community Income

The structure of local economics can be measured in terms of the distribution of income and the distribution of jobs. This section examines the community income profile for both Anderson and Roane Counties. The county is the smallest unit of analysis for which the U.S. Census Bureau collects personal income data, but given the relative size of the Oak Ridge component in the two-county economy, the data is believed to present a fairly accurate depiction of community income in Oak Ridge.

The data in Table 17 displays personal income by major sources for both Anderson and Roane Counties combined. Between 1976 and 1981, total personal income on the two-county area increased by 72.8 percent to a record 1981 level of \$1.015 billion, which represents a slightly higher growth rate than for the state (71.8 percent increase) but a slightly lower increase than for the nation (73.7 percent increase). The percent increase in personal income in Anderson and Roane Counties is attributable largely to the growth in Anderson County and therefore it can be assumed that Oak Ridge residents' income accounts for the largest proportion of the increase. This 72.8 percent growth in personal income was above the inflation rate for the

1976-1981 period. For this five-year period, the value of the 1967 U.S. dollar decreased from 0.59 to 0.37 or 62.7 percent of its 1976 value and the consumer price index increased about 60 percent.

In 1976 manufacturing earnings amounted to \$332.7 million, representing 59.1 percent of all earnings--the largest proportion in the local economy. Nondurable goods earnings accounted for 52.5 percent of all earnings but represented about 89 percent of all manufacturing earnings. In 1981, manufacturing earnings increased to 60.2 percent of all earnings, a 0.22 percent annual rate of growth. All of this relative growth in the proportion of manufacturing earnings occurred in nondurable goods manufacturing. In contrast, manufacturing earnings represented only 30.4 percent of the total earnings in the State of Tennessee. Thus, the local economy is obviously dominated by nondurable goods manufacturing and has been dependent on increases in earnings from that sector as well as the services sector for real economic growth during this five-year period. As Table 17 indicates, the largest increase in the proportion of total earnings occurred in the services sector, which jumped from 8.2 percent to 10.2 percent between 1976 and 1981.

TABLE 17

Personal Income by Major Sources
for Anderson and Roane Counties, 1976 and 1981

(In Thousands of Dollars)

Economic Sector	1976	1981	Percentage Change	Percentage Distribution	
				1976	1981
Farm	2,479	1,497	- 39.6	.4	.1
Nonfarm	560,141	910,476	62.4	99.5	99.8
Private	472,144	769,450	62.9	83.8	84.3
Agricultural Services	324	571	76.2	.0	.0
Mining	13,428	21,525	60.2	2.3	2.3
Construction	19,899	20,683	3.9	3.5	2.2
Manufacturing	332,672	549,062	65.0	59.1	60.2
Nondurable Goods	295,957	489,662	65.4	52.5	53.6
Durable Goods	36,715	59,400	61.7	6.5	6.5
Transportation	12,149	16,209	33.4	2.1	1.7
Wholesale Trade	6,351	11,481	80.7	1.1	1.2
Retail Trade	30,804	41,384	34.3	5.4	4.5
Finance, Insurance & Real Estate	10,007	15,377	53.6	1.7	1.6
Services	46,510	93,158	100.2	8.2	10.2
Government and Government Enterprises	88,269	141,026	59.7	15.6	15.4
Federal, Civilian	49,256	76,383	55.0	8.7	8.3
Federal, Military	1,275	1,983	55.5	.2	.2
State and Local	37,738	62,660	66.0	6.7	6.8
Total Personal Income	587,458	1,015,316	72.8	100	100
Net Earnings to Residents ^a	428,651	694,914	62.1	100	100

^a Net personal earnings to residents consists of total workers' income (labor and proprietor's income) less personal contributions to social security insurance and an adjustment for nonresident worker's income. For instance, in 1976, residence adjustment and social security deductions amounted to \$102,799,000 and \$31,442,000, respectively. For 1981, the net outflow of dollars for nonresidents amounted to \$157,436,000 and social security deductions totaled \$59,623,000.

Source: U.S. Bureau of Economic Analysis, Regional Economic Information system.

These data show that the Oak Ridge economy has neither been static nor stagnant. The structure of the local economy is changing in a way that reinforces the importance of the nondurable goods and service sectors while continuing the declining trend relative to the significance of farm income. Healthy income increases were witnessed in the wholesale trade, and finance, insurance and real estate sectors. The relatively modest increase in retail trade may be largely a function of the slight loss in population during this period and the general national recession in the latter years of the 1976-1981 period. However, a partial explanation for the sluggish increase in retail trade income may also be the net out-flow of dollars associated with nonresident earned income.

The net out-flow of dollars for these employees who reside outside Oak Ridge increased to \$157.436 million in 1981 compared to \$102.799 million in 1976. This represents a 53 percent increase--not quite as rapid as rate of increase as in total earnings (73.7 percent), but enough to dampen realization of the full economic potential of local employment. One should keep in mind that the data in Table 17 represents income generated by place of employment, not by place of residence, so the proportion of income exported is an important determinant of spending on retail trade and other services.

As pointed out in a later section, there has been a slight deterioration in the retail sales to income relationship for Anderson County. In 1977, retail sales were \$214.2 million, representing 48 percent of the income of county residents, but decreased to 42 percent of residents' income when retail sales reached \$332.6 million in 1982. This represents some sales leakage out of the community by residents spending elsewhere. However, in terms of the lost potential sales caused by income export (over 15 percent of total income), local retail sales and income from that source have simply not kept pace with the income produced in the community. This finding reinforces the need to implement strategies designed to convince a larger proportion of local employees to reside in the community and to ensure that adequate space is reserved for future retail businesses.

Employment Characteristics

The structure and functions of the local economy can be described in terms of key employment characteristics. Table 18 indicates the number and percentage distribution of 1980 employment by industry for Oak Ridge residents as well as for the residents of Anderson, Knox and Roane Counties and for the state as a whole. The sectors which employ the largest proportions of Oak Ridge residents are business and repair services (25.2 percent), manufacturing (17.8 percent) and retail trade (12.3 percent). Together, these three sectors employ 55.3 percent of working Oak Ridge residents. However, all service related industries together employ 50 percent of Oak Ridge residents--considerably higher than the compared counties and nearly twice the state proportion. Although the census definitions of industrial sectors were changed between 1970 and 1980, the City witnessed a general increase in the proportions of residents employed in the service sector and the manufacturing sector.

TABLE 18

Employment by Industry for Oak Ridge and Selected Jurisdictions, 1980

Industry	Oak Ridge		Anderson County		Knox County		Roane County		State	
	N	%	N	%	N	%	N	%	N	%
Agriculture, Forestry, Fisheries, Mining	160	1.2	859	3.04	1,852		543	2.81	61,605	3.2
Construction	373	2.8	1,592	5.63	8,469		1,284	6.65	119,059	6.2
Manufacturing: Nondurable Goods		17.8		22.01						26.3
Durable Goods	1,372	10.3	3,240	11.46	14,922		3,884	20.12	270,620	14.1
	996	7.5	2,984	10.55	9,284		1,860	9.64	233,788	12.2
Transportation	139	1.0	686	2.43	5,369		398	2.06	84,573	4.4
Communication, Other Public Utilities	647	4.9	1,285	4.54	8,304		1,720	8.91	79,051	4.1
Wholesale Trade	111	0.8	535	1.89	7,604		440	2.28	84,663	4.4
Retail Trade	1,637	12.3	4,127	14.60	25,008		2,450	12.69	294,731	15.4
Finance, Insurance and Real Estate	413	3.1	982	3.47	7,082		650	3.37	93,492	4.9
Business & Repair Services	3,345	25.2	4,456	15.76	7,491		1,752	9.08	68,249	3.5
Personal, Entertainment and Recrea- tion Serv.	542	4.0	968	3.42	5,818		461	2.39	80,223	4.2
Professional and Related Services:										
Health	722	5.4	1,568	5.55	11,507		1,071	5.55	136,980	7.2
Educat'l	1,156	8.7	2,153	7.61	15,897		1,413	7.32	154,307	8.0
Other Pro- fessional & Related Services	893	6.7	1,240	4.39	6,555		553	2.87	65,167	3.2
Public Admin.	755	5.7	1,601	5.66	6,470		822	4.26	91,412	4.8
Total	13,261	99.6	28,276	100.0	141,632	100.0	19,301	100.0	1,914,920	99.8

Source: U.S. Bureau of the Census, 1980 Census of Population, STF3A.

TABLE 19

Occupation of Employees in Oak Ridge
and Selected Jurisdictions, 1980

Occupation Type	Oak Ridge		Anderson County		Knox County		Roane County		State	
	N	%	N	%	N	%	N	%	N	%
Managerial and Professional Specialty: Executive										
Administrative, Managerial	1,344	10.1	2,261	8.0	14,530		1,163	6.03	171,064	8.9
Professional Specialty	3,357	25.3	4,451	15.4	20,444		2,151	11.14	206,643	10.8
Technical, Sales, Admin. Support:										
Technicians & Related Support	1,457	11.0	2,050	7.25	6,076		816	4.23	57,885	3.02
Sales	907	6.8	2,243	7.93	16,103		1,427	7.39	184,733	9.65
Adm. Support plus Clerical	2,184	16.5	4,163	14.72	23,520		2,574	13.34	294,347	15.37
Service:										
Private Household	143	1.1	204	.72	676		67	.35	231,294	12.08
Protective Service	179	1.3	521	1.84	1,826		274	1.47	(26,372)	
Other Service	1,019	7.9	2,568	9.08	16,272		1,954	10.12	(190,642)	
Farming, Forestry, Fishing	112	.8	279	.99	1,190		247	1.28	49,478	2.59
Precision Production, Craft and Repair	1,442	10.9	4,524	16.0	16,911		3,807	19.72	254,491	13.29
Operators, Fabricators and Laborers:										
Machine Operators, Assemblers, Inspectors	702	5.3	2,774	9.81	12,077		2,778	14.39	464,985	24.28
Transportation and Material Moving	170	1.3	996	3.52	5,925		897	4.65	(96,450)	
Handlers, Equipment Cleaners, Helpers, Laborers	245	1.8	1,243	4.40	6,072		1,136	5.89	(106,084)	
Total	13,261	100.0	28,277	99.7	141,632	100.0	19,291	100.0	1,914,920	94.8

Source: U.S. Bureau of the Census, 1980 Census of Population, STF3A.

The occupational distribution of Oak Ridge residents is illustrated in Table 19. Clearly, the occupational mix of Oak Ridge residents is different from that of surrounding counties or the state. Over one-fourth of residents hold jobs in the professional specialty category, another 16.5 percent have jobs related to administrative support and clerical services, 11 percent are technicians and 10.1 percent hold managerial and administrative type positions. The proportions illustrated in Table 20 show that Oak Ridge residents are predominantly white-collar workers (69.7 percent) who are employed by private firms (71.4 percent), albeit funded by the federal government for the most part.

TABLE 20

Classification of Oak Ridge Resident Employees
16 Years and Older, 1980

<u>Worker Class</u>	<u>Number</u>	<u>Percentage</u>
White Collar	9,243	69.7
Blue Collar	<u>4,018</u>	<u>30.3</u>
Total	13,261	100.0
Private Wage and Salary Worker	9,462	71.4
Federal Government Worker	1,960	14.8
State Government Worker	342	2.6
Local Government Worker	959	7.2
Self-Employed Worker	493	3.7
Unpaid Family Worker	<u>45</u>	<u>0.3</u>
Total	13,261	100.0

Source: U.S. Bureau of the Census, 1980 Census of Population, STF3A.

An even more accurate depiction of the structure of the local economy is provided by Table 21. The strong role of DOE and its contractors in the local employment structure is readily apparent. In 1982, 78 percent of the total employment in Oak Ridge was accounted for by DOE and its contractors. Total employment increased by about 17 percent during the 1976-1982 period but the proportion of employment by classification changed very little during this period. Approximately 85 percent of the employment growth is attributable to a net increase in DOE/contractor employment during this period. The remaining portion of employment growth occurred largely in occupations related to wholesale and retail trade.

TABLE 21

Estimated Distribution of Oak Ridge Employment
by Employer Classification

<u>Classification</u>	<u>Total Employment</u>			
	<u>1976</u>		<u>1982</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Industrial				
DOE/Contractor	16,780	77	19,942	78
Other	<u>1,514</u>	<u>7</u>	<u>1,830</u>	<u>7</u>
Subtotal	18,294	84	21,772	85
Business Services				
Wholesale and Retail	1,350	6	1,500	6
Oak Ridge Schools	637	3	600	3
Oak Ridge Associated University	333	2	500	2
Oak Ridge Hospital	667	3	700	3
City of Oak Ridge	<u>374</u>	<u>2</u>	<u>305</u>	<u>1</u>
Total Employment	21,655	100	25,377	100

Source: Personnel Offices, and Oak Ridge Chamber of Commerce

Since DOE/contractor employment has such a significant impact on the City's economic well-being and constitutes such a large proportion of the region's work force, a closer examination of the employment data and trends of this segment is warranted. Table 22 lists the largest "private" firms in Oak Ridge along with 1984 employment estimates made by the Economic Development Department of the Oak Ridge Chamber of Commerce. A mere glance at this table indicates that the vast majority of the firms are basic industries. Basic industries are those which receive revenues primarily from outside the community. The largest basic industry in Oak Ridge is, of course, the DOE and the primary contractor, Martin Marietta Energy Systems. Other listed examples of basic industries are Boeing, Pathway-Bellows, Science Applications, PIC-AIR and Midwest Technical. Other familiar basic industries in Oak Ridge are ORTEC, Tennelec, Oak Ridge Tool & Die, and Oak Ridge Precision Industries, to name just a few.

The distinction between basic and nonbasic industries is important primarily for understanding the community income stream, the sources of demand, and the implications for and interactions with other elements of the local and national economy. This same type of data can be used to develop an economic model which extends the simple distinction between basic/nonbasic industries to the prediction of income and employment multiplier effects. Development of such a model is beyond the scope of this plan, but is currently being pursued by the Committee of 50. The fact of particular relevance to this study is that export or basic employment is the prime engine which drives the local economy. Therefore, any changes in basic employment will have a

definite positive or negative impact on non-basic employment in some proportion to the increase or decrease of basic employment.

TABLE 22

Employment in the Largest Private Oak Ridge Firms, 1984

<u>Rank</u>	<u>Firm</u>	<u>Type</u>	<u>Number of Employees</u>
1	Martin-Marietta Energy Systems Inc.	Research, Development, Prod. Engineering	16,465
2	Rust Engineering Co.	Construction	800
3	Oak Ridge Associated Universities	Consulting/R&D	500
4	Boeing Engineering Co. Southeast, Inc.	Engineered/Fabricated Products	430
5	EG & G ORTEC	Engineered/Fabricated Products	400
6	Pathway Bellows, Inc.	Engineered/Fabricated Products	200
7	Science Applications, Inc.	Consulting/R&D Information Management	160
8	Presearch, Inc.	Project Management	150
9	Lockwood Greene Engineers, Inc.	Architects & Engineers	140
10	Bechtel National, Inc.	Architects & Engineers, Construction, R&D	135
11	Southern Cast Stone Co.	Building Materials, Engineered/Fabricated Products	123
12	The Maxima Corporation	Adm./Support Services Information and Project Management	100-125
13	PIC-AIR, Inc.	Engineered/Fabricated Products	100
14	Rodgers Group, Inc.	Building Materials/Construction	90-100

TABLE 22 (Continued)

<u>Rank</u>	<u>Firm</u>	<u>Type</u>	<u>Number of Employees</u>
15	Daniel, Mann, Johnson & Mendenhall	Architects and Engineers	80
16	Midwest Technical, Inc.	Adm./Support Services, Architects and Engineers, Consulting/R&D	80

Source: Economic Development Department, Oak Ridge Chamber of Commerce, Industrial Services Directory, May 1984

Another concern related to local employment is the place of residence for those persons who are employed in Oak Ridge. Table 23 shows that 75 percent of those persons who resided in the city in 1980 were also locally employed. However, an analysis of the commuting patterns for Anderson County for 1970 and 1980 indicates that there has been a large increase in the number of persons commuting into the county to work. As Table 24 illustrates, the number of in-commuters has doubled between 1970 and 1980 and the primary residence for these commuters is Knox County.

TABLE 23

Location of Work for Resident Oak Ridge Employees
16 Years and Older, 1980

<u>Location of Work</u>	<u>Number</u>	<u>Percentage</u>
Inside Corporate Limits	9,973	75.2
Outside Corporate Limits	2,376	18.0
Not Reported	912	6.8
Total Employed Residents	13,261	100.0
Total Unemployed Residents Rate	781	5.9% Unemployment

Source: U.S. Bureau of the Census, 1980 Census of Population, STF3A.

To explain this commuter trend, detailed analysis of the employment and residence trends at DOE/contractor facilities is necessary. Table 25 shows the annual fluctuations in DOE/contractor employment between 1967 and 1983. Overall employment has increased over this period. However, a more

disturbing trend is revealed when the residence trends for DOE/contractor employees are examined. As Table 26 illustrates, the number of employees residing in Oak Ridge has declined by 216 (3.9 percent) during the 1979 and 1982 period. For the first time in the history of the City, more DOE/contractor employees are residing in Knoxville (28.9 percent) than in Oak Ridge (26.8 percent). During 1979-1982, the number of employees residing in Knoxville increased by 21.7 percent, and Knox County witnessed a 13.5 percent increase. This compares with a decline of .2 percent for Anderson County. However, Anderson County continues to be the home for the largest percentage of DOE/contractor employees (39.7 percent of the total).

Reference to Figure 5 and Table 27 can explain this situation partially. Figure 5 shows an overall decline in employment since 1980, caused by the reduction in the number of employees at ORNL and K-25. This overall decline was mitigated somewhat by the increase in employment at the Y-12 weapons plant. The significance of these differential employment levels becomes clearer when the place of residence for employees is examined by facility for 1968, 1977 and 1982, as shown in Table 27.

TABLE 24

Commuting Patterns for Anderson County, 1970 and 1980

County	Went Out of County to Work		Came Into County to Work	
	1970	1980	1970	1980
Blount	47	38	234	334
Campbell	58	251	420	892
Claiborne	5	--	21	40
Fentress	--	--	--	20
Grainger	12	--	20	10
Jefferson	N/A	17	38	81
Knox	2,718	3,899	3,941	7,090
Loudon	13	43	540	1,059
McMinn	N/A	--	50	40
Meigs	--	--	26	13
Monroe	7	--	124	211
Morgan	23	136	335	738
Rhea	--	--	25	70
Roane	1,218	1,693	1,579	3,719
Scott	5	37	--	74
Savier	N/A	5	37	84
Union	--	29	55	91
Elsewhere	<u>330</u>	<u>413</u>	<u>33</u>	<u>27</u>
Totals	4,436	6,651	7,478	14,593

Source: U.S. Bureau of the Census, 1970 Census of Population, 4th Count; 1980 Census of Population

TABLE 25

Growth in DOE/Contractor Employment

<u>Year</u>	<u>Average Employment</u>	<u>Annual Change</u>	
		<u>Number</u>	<u>Percentage</u>
1967	13,872	372	2.6
1968	14,306	434	3.1
1969	14,902	596	4.2
1970	15,136	234	1.6
1971	15,278	142	0.9
1972	14,936	-342	-2.2
1973	14,402	-534	-3.7
1974	14,645	243	1.7
1975	15,715	1,070	7.3
1976	16,780	1,065	6.8
1977	18,164	1,384	8.2
1978	16,646	482	2.7
1979	18,871	225	1.2
1980	19,211	340	1.8
1981	20,879	1,668	8.7
1982	19,942	-937	-4.5

Source: DOE/Contractor Personnel Offices

TABLE 26

DOE/Contractor Employee Residence Trends
1979 - 1982

<u>Jurisdiction</u>	<u>1979</u>		<u>1982</u>		<u>Percentage Change</u>
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>	
County					
Anderson	7,540	39.2	7,528	39.7	-0.2
Blount	302	1.6	326	1.6	7.9
Campbell	230	1.2	299	1.5	30.0
Cumberland	63	0.3	77	0.4	22.2
Knox	5,701	29.7	6,488	32.5	13.5
Loudon	1,051	5.5	1,088	5.5	3.5
McMinn	34	0.3	47	0.2	-32.8
Monroe	54	0.7	135	0.7	0.7
Morgan	352	1.8	342	1.7	-2.8
Roane	3,536	18.4	3,243	16.3	-8.3
Other	248	1.3	369	1.9	48.8

TABLE 26 (Continued)

<u>Jurisdiction</u>	<u>1979</u>		<u>1982</u>		<u>Percentage Change</u>
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>	
City					
Clinton	1,436	7.5	1,531	7.7	6.6
Harriman	954	5.0	955	4.8	0.1
Kingston	1,290	6.7	1,266	6.3	-1.9
Knoxville	4,740	24.7	5,767	28.9	21.7
Lake City	169	0.9	179	0.9	5.9
Lenoir City	890	4.6	884	4.4	-0.7
Oak Ridge	5,557	28.9	5,341	26.8	-3.9
Oliver Springs	758	3.9	815	4.1	7.5
Rockwood	349	1.8	313	1.6	-10.3

Source: DOE/Contractor Employment Offices

TABLE 27

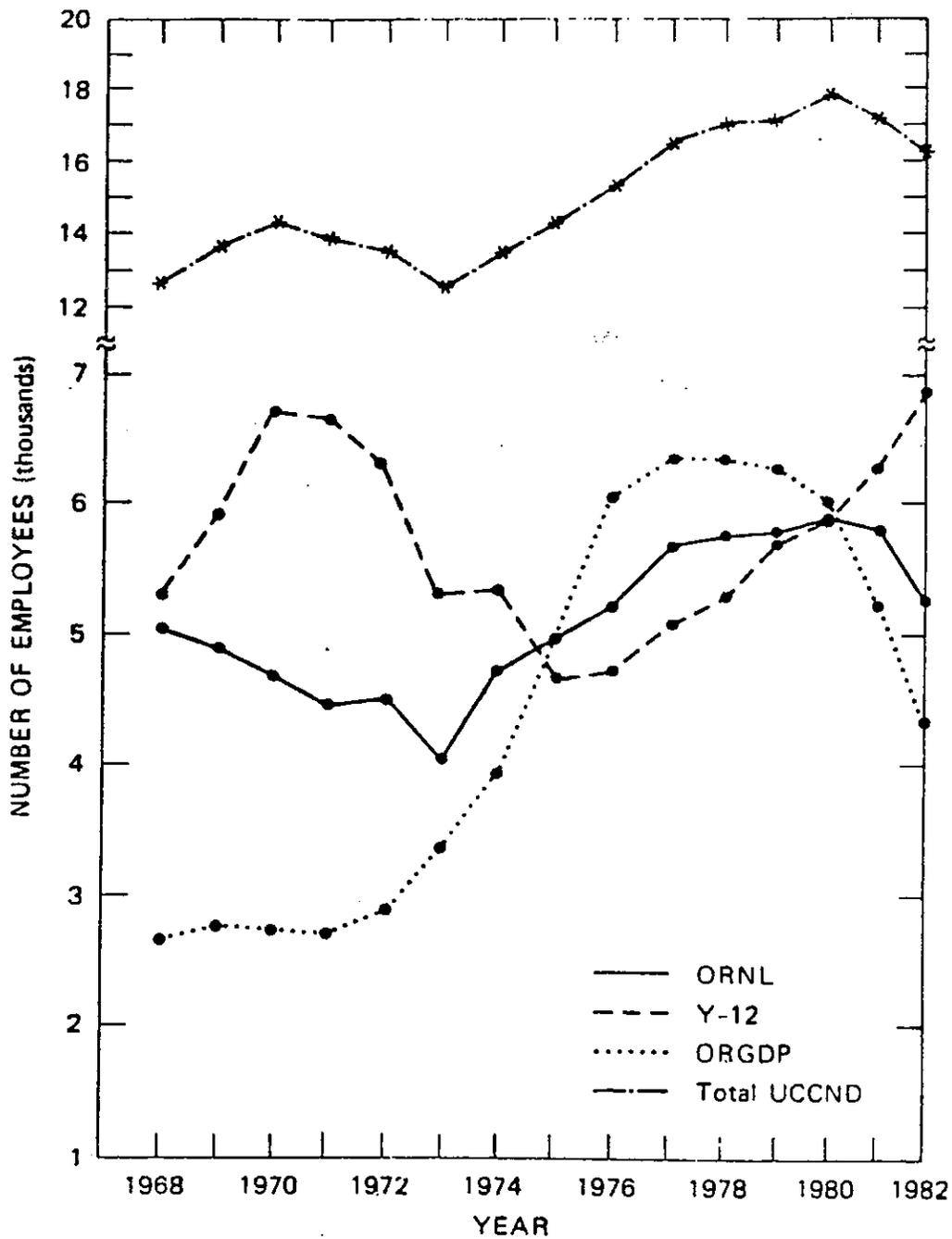
Proportion of DOE/Contractor Employees Residing
Inside the City of Oak Ridge

<u>Facility</u>	<u>1968</u>	<u>1977</u>	<u>1982</u>
Oak Ridge National Laboratory	44.8%	37.6%	34.1%
Oak Ridge Gaseous Diffusion Plant (K-25)	41.0%	25.9%	25.3%
Y-12	35.5%	26.2%	21.3%

Source: DOE/Contractor Personnel Offices

Two important observations can be drawn from this data. First, the proportion of employees at each facility who are Oak Ridge residents has continually declined during this 14-year period. Second, the two facilities that generally have had the largest portion of employees residing in Oak Ridge have been ORNL and K-25. Therefore, recent decreases in employment levels at these two facilities (which began in 1979) are believed to have had a more negative impact on the resident employee percentage recorded in 1982. The decline in employment at ORNL and K-25 may also partially explain the population loss recorded in the 1980 census.

The implications of this analysis of the local employment structure are clear. Expansion of employment opportunities in a diversity of employment categories is essential for moving the City toward a more balanced, self-sufficient economy. The overwhelming economic dependency on DOE/contractor employment, while reduced slightly in recent years due to the economic



NOTE: Employment figures are for UCCND only.
 SOURCE: Union Carbide Corporation, Nuclear Division, Oak Ridge.

Figure 5:
Employment at Major Department of Energy
Facilities in the Oak Ridge Area, 1968-1982

development efforts of the City and other key actors, necessitates a redoubled effort by all actors in the development process to make Oak Ridge a more competitive environment for quality residential, business, and industrial development.

Labor Force Characteristics

In 1980, 41.5 percent of the residents of Anderson and Roane Counties were employed compared to an employment to population ratio of 37.0 percent in 1970. In 1980, the employment to population ratio for Oak Ridge residents was approximately 48 percent compared to 41.7 percent in the state. The unemployment rate in Oak Ridge in 1980 was approximately 5.9 percent, representing 781 unemployed persons. The unemployment rate for the state in 1980 was 7.2 percent.

Even more important than these "snapshot" descriptions of employment to population ratios or unemployment rates is the employment trends over time which provide some indication of locally available human resources for new industry. Table 28 displays the labor force characteristics for Anderson and Roane Counties for 1979 through March 1984. While the unemployment rates for the City of Oak Ridge have always been somewhat lower than those for Anderson County, Table 28 indicates a 6.8 percent growth of the total labor force and a 2.7 percent real increase in the employment rate. Unemployment nearly doubled during this five-plus-year period in Anderson County. Therefore, over 2,600 people are looking for work in Anderson County alone.

TABLE 28

Annual Labor Force Data, 1979-1984

<u>Jurisdiction</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Percentage Change 1979-1984</u>
Anderson County:							
Total Labor Force	30,410	30,710	32,060	33,270	32,910	32,480	+ 6.8
Number Employed	29,030	29,050	29,660	30,070	29,240	29,820	+ 2.7
Number Unemployed	1,380	1,660	2,400	3,200	3,670	2,660	+ 92.8
Unemployment Rate	4.5	5.4	7.5	9.65	11.2	8.2	+ 82.2
Roane County:							
Total Labor Force	16,690	16,540	16,140	16,660	16,780	16,340	- 2.1
Number Employed	15,210	14,630	14,340	14,160	14,040	14,140	- 7.0
Number Unemployed	1,480	1,910	1,800	2,500	2,740	2,200	+ 48.6
Unemployment Rate	8.9	11.5	11.2	15.0	16.3	13.5	+ 51.7

Source: Tennessee Department of Employment Security, Tennessee Covered Employment and Wages by Industry, State, and County, 1979 through March 1984

The unemployment trends in Roane County are even more dramatic. With a labor force about half the size of Anderson County, Roane County nonetheless has almost as many unemployed residents. The total labor force has declined slightly during this period, perhaps reflecting a withdrawal by some people from the labor market altogether. Despite this fact, Roane County's unemployment rate continues to be among the highest in the region.

While no data is readily available on the skill mix and/or abilities of these unemployed persons, the labor force figures for the two counties indicate a large reservoir of human resources for new industries.

Another feature of the employed labor force that has been mentioned as a deterrent to attracting new business and industry is the already high wage and salary profile of local workers and the extent of unionization of the labor force. Table 29 illustrates the veracity of the first claim with respect to the existing high income profile of employed workers in the manufacturing sectors. This is due largely to the specialized nature of most of these occupations which requires highly-skilled and/or highly educated

personnel. The question is whether the community should lower per capita income by trying to attract industries which do not meet the skills of area workers or their income requirements. A corollary to this issue is whether or not the community might benefit more by trying to attract a greater diversity of employers requiring a variety of skilled and semi-skilled workers as a way to broaden the employability of Oak Ridge residents.

TABLE 29

Wage and Salary Data by Industry
for Anderson County, 1980 and 1982

<u>Economic Sector</u>	1980 Annual Av. Wage	1982 Annual Av. Wage	Percentage Change
Manufacturing	\$ 20,045	\$ 23,413	16.8
Nondurable Goods	20,384	24,268	19.1
Durable Goods	15,927	20,605	29.3
Mining	21,457	22,160	3.2
Contract Construction	11,465	15,117	31.8
Transportation, Communications & Utilities	9,353	11,290	20.7
Wholesale Trade	15,170	10,855	- 28.4
Retail Trade	7,177	8,166	13.8
Finance, Insurance, & Real Estate	10,365	11,744	13.3
State and Local Government	11,283	13,416	18.9
Services and Other	11,772	14,857	26.2
County Averages	\$ 17,020	\$ 17,865	5.0

Source: Tennessee Department of Employment Security, Tennessee Covered Employment and Wages by Industry, State, and County, 1980; 1982

Retail Sales

Retail sales is an important component of the Oak Ridge economic development strategy. As discussed earlier, there is some lost potential retail sales caused by "income export" and "sales leakage" to other competition. "Income export" is best approached through a well developed housing opportunity strategy and an improved community image and marketing strategy. "Sales leakage" is a problem which can be attacked directly by improving the retail sales environment and by being a more competitive center for retail sales. Strategies and policies aimed at capturing a larger portion of the retail sales market need to be based on market factors, the existing retail structures, and competition. Although Oak Ridge has not grown substantially in recent years (1970-1980), both Anderson and Roane Counties have continued

to grow in population. Total personal income also increased for Anderson and Roane Counties from \$587 million to \$1.0 billion (72.8%) between 1970 and 1980. This amounts to an average increase of over \$80 million per year.

In addition, from 1969 to 1979 the number of families in Oak Ridge in the income category over \$25,000 per year increased from 5.1 percent to 49.7 percent of the total. Median family income in Anderson County exceeded the State and Knox County medians in 1979. Median family income in Oak Ridge was \$24,451 in 1979 and exceeded Anderson County's median income by \$5,836.

The existing population and income base provide a substantial market for retail sales in Oak Ridge and Anderson and Roane Counties. According to the Bureau of Labor Statistics data contained in Table 30, a four person family with an income of \$25,407 spends 32 percent on food, 7 percent on clothes, 3 percent on personal care and 7 percent on other consumption. All of these items offer substantial retail potential for the Oak Ridge market.

According to Retailing in Tennessee, Oak Ridge generated \$172 million in retail sales in 1980. As Table 31 shows, 24 percent was in food purchases, 2.8 percent was in apparel and 2.8 percent was in furniture. In contrast, Knoxville only generated 16.8 percent in food while apparel accounted for 3.9 percent and furniture comprised 3.4 percent of the total. It is apparent that Oak Ridge has leakage in retail sales and that some of the prime shopping center sales dollars are being spent elsewhere.

TABLE 30

Average U.S. Goods and Services Consumption
for a Four Person Family, 1981

	<u>Dollars</u> <u>Spent</u>	<u>Percentage</u> <u>of Total Family</u> <u>Consumption</u>
<u>Total Family Consumption*</u>	\$18,240	
Food	5,843	32
Housing	5,546	30
Transportation	2,372	13
Clothing	1,333	7
Personal Care	508	3
Medical Care	1,443	8
Other Consumption	<u>1,196</u>	<u>7</u>
	\$25,407	100

* The budget for Total Family Consumption is derived from Total Budget minus Social Security and Disability Income and Personal Income Taxes (Federal, State, and Local).

Source: Bureau of Labor Statistics, Autumn, 1981, Urban Family Budgets and Comparative Indexes. United States Department of Labor, Washington, D.C.

TABLE 31

Distribution of Retail Sales,
Oak Ridge and Knoxville, 1980

	<u>Oak Ridge</u>		<u>Knoxville</u>	
	<u>\$</u>	<u>%</u>	<u>\$</u>	<u>%</u>
Building Materials	9,467	5.50	97,531	6.52
General Merchandise	38,581	22.40	220,608	14.74
Food Stores	41,862	24.31	252,321	16.86
Auto Dealers	29,380	17.06	292,080	19.52
Gasoline Service	11,573	6.72	242,174	16.18
Apparel	4,854	2.82	58,274	3.90
Furniture	4,880	2.82	52,150	3.48
Restaurants	13,016	7.56	115,266	7.70
Drug Stores, Proprietary	5,614	3.26	34,737	2.32
Miscellaneous Retail	13,005	7.55	131,358	8.78
TOTAL	172,232	100.00	1,496,499	100.00

Source: 1980 Retailing in Tennessee, State of Tennessee Sales and Use Tax Division, Nashville, 1981.

Another sign of lagging retail sales is the fact that between 1967 and 1977 retail sales increased over 6.4 percent and establishments increased only five percent. As Table 32 indicates, average sales during the 1967-1972 period increased over 48 percent. However, between 1977 and 1982, total sales increased only 16.9 percent while the number of establishments increased 36.7 percent. Average sales during this time period declined 14.3 percent. Consequently, there is a definite need to increase total retail sales as well as average sales per establishment in Oak Ridge and Anderson County to stay competitive.

TABLE 32

Retail Trade in Anderson County
(1967, 1972, 1977, and 1982)

	<u>Sales</u> <u>(In Thousands)</u>	<u># of</u> <u>Establishments</u>	<u>Average Sales</u> <u>(In Thousands)</u>
1967	\$ 73,859	416	\$ 177.5
1972	\$130,437	495	\$ 263.5
% Average (67-72)	76.6%	18.9%	48.4%
1977	\$214,187	522	\$ 410.3
% Average (72-77)	64.2%	5.4%	55.7%
1982	\$250,410	714	\$ 350.7
% Average (77-82)	16.9%	36.7%	14.3%

Source: 1967, 1977, 1982, Bureau of Labor Statistics Data.

The primary retail sales market for Oak Ridge consists of local residents. An equally strong secondary market exists in Anderson and Roane Counties. The tertiary retail sales market for the City consists of residents in Campbell, Scott, Morgan, and Loudon Counties as well as a portion of northwestern Knox County. There is potential to expand the City's retail market beyond this region.

While retail sales in Anderson County is lagging, competition is increasing. West Town Mall in western Knoxville, for instance, has been a major competitor for Oak Ridge merchants. In addition, the relatively new Outlets Limited mall off I-40/I-75 in west Knox County have been a major competitor for discount merchandise customers. The new Foothills Mall (600,000+ sq. ft.) in Maryville and the recently-opened East Towne Mall (1 million + sq. ft.) also will compete for potential customers in Roane and Anderson Counties, as well as in the more remote tertiary markets. These modern,

climate-controlled facilities have convenient access and offers a substantial challenge to Oak Ridge merchants.

Oak Ridge may continue to experience a lag in retail sales in the future if it does not expand its population base and capture a larger share of the existing population's retail sales dollar. In addition, improvements in the aesthetic appeal of existing facilities, expansion of retail outlets relating to apparel, furniture, and quality restaurant facilities, and transportation system improvements will help to enhance retail sales in Oak Ridge.

Economic Development Plan

A number of key economic development issues have been identified through the series of community meetings held as a part of the Comprehensive Plan development process. A series of policies were formulated which outline the direction necessary in order to resolve these issues. The following strategies are being proposed in order to achieve the desired goals indicated by the broad policies categorized. The major issues addressed by the policies and strategies consist of the following:

1. The need for an aggressive approach to alleviate the perception that future prospects for Oak Ridge are uncertain;
2. The need to encourage growth that capitalizes on the assets of Oak Ridge while at the same time preserving and enhancing the high quality of life found in the community;
3. The need to utilize the public-private partnership concept in order to attract new businesses and residents; and
4. The need to clearly define local government's role and approach to economic development activities.

Probably at no other time in the history of Oak Ridge has a comprehensive economic development strategy been more necessary. Federal funding of research, development and manufacturing activities in Oak Ridge can be expected to fluctuate over the next several years. In a more modest way, cuts anticipated in non-DOE federal budget activities will adversely affect Oak Ridge both directly and indirectly. For example, the expected demise of the Economic Development Administration and the Small Business Administration (either in part or in total) will severely restrict the availability of funds for economic development programs. A greater burden will be placed upon the State to apportion the limited economic development resources at its disposal. Oak Ridge is a community considered relatively well off in comparison to much of the nation and thus has been ineligible for many previously available federal programs. However, some of these financial resources have been utilized in the past and will be hard to replace if eliminated by Congress. The proposed cuts in TVA funding will also impact on Oak Ridge.

These facts should not be allowed to diminish the community's rightful sense of optimism, however, as Oak Ridge has an incredible potential for economic development. The development of a concise economic development plan can play an extremely important role in ensuring that limited program resources are maximized. The conventional approaches for promotion of a community (i.e. availability of land ready for development, public subsidies, etc.) will not be sufficient to encourage stable, long-term growth. It will be necessary to develop strategies which are innovative and therefore somewhat more risky for the community.

THE ISSUE OF UNCERTAINTY

The uncertainty surrounding the future amount and duration of the federal government's in-lieu-of-tax payments may make some businesses and industries wary of investing in the community for fear of a larger local tax burden in the future to compensate for reduced federal payments.

POLICY E-1: The City will aggressively pursue with Congress and the Department of Energy the lump sum payment of \$22.2 million proposed by the Department of Energy with modifications intended to facilitate the achievement of self-sufficiency.

POLICY E-2: The City will move toward a local revenue structure for financing public services which de-emphasizes the property tax and encourages the use and development of alternative revenue sources such as a local payroll tax or greater reliance on the local option sales tax.

Self-Sufficiency Strategy

DOE recently proposed that its obligations under the Atomic Energy Community Act of 1955 be fulfilled and has recommended that a lump-sum payment of \$41,133,000 be made to the three local governments in FY 1986. Of this amount, \$22.2 million is proposed for the City of Oak Ridge. This recommendation has been approved by the President and incorporated into the budget currently under review by the U.S. government. The City shall pursue the lump-sum settlement as proposed with the following items:

1. That all funds held by DOE from past years' financial assistance or self-sufficiency allocations be transferred to the local governments without penalty; and
2. That payments in lieu of property taxes authorized under Chapter 14 Section 168 of the Atomic Energy Act of 1954 begin in FY 1987 based on DOE land values as determined in accordance with Tennessee law; and
3. That beginning FY 1986, DOE adopt a ten-year program to diversify the local economy which would provide purchase options for the transfer of surplus land at full market value to the local governments, maximize the use of privately owned, taxable facilities and services for DOE and contractor programs, and assist in the implementation of DOE contractor community involvement proposals; and
4. That DOE assist the local and state governments in construction of street and utility improvements serving Federal facilities; and
5. That DOE compensate the local governments for provision of special contractual services; and

6. That the Congress request that DOE and the local entities jointly evaluate and report on the degree of achievement of local government self-sufficiency in FY 1990 and again in FY 1995 to determine the need for further action.

Local Revenue Strategy

The current emphasis on the property tax as a source of local government revenue contributes to the perceived negative image of Oak Ridge and its future potential for economic growth. High property taxes also contribute to the perception that Oak Ridge is an expensive place to live, perceptions that can only partially be corrected by means of public education and total cost-of-living comparisons.

There has been a great deal of activity on the State level to address the deficiencies of the local tax structure. The current session of the Tennessee legislature may include further discussions on the proposal for a local option payroll tax. Oak Ridge will follow this issue closely and actively lobby for the adoption of this or similar legislation which will enable the local governments to decrease emphasis on their property taxes as the primary source of local government revenues.

ACHIEVING DESIRED DEVELOPMENT

Through the Comprehensive Plan Development process, a consensus of opinion was reached as to the extent and direction of future economic development in Oak Ridge.

POLICY E-3: The City will attempt to strengthen a coordinated, business-like, public-private approach to retain, develop, and recruit targeted businesses that broaden the tax base, particularly those which maintain or increase per capita and median family income.

Coordination of Key Players

A mechanism for improving communication and coordination between the diverse actors in economic development should be established. The major participants in recruitment activities should be brought together to serve as a "roundtable" to maximize the potential benefits from each of the participant's respective resources and expertise. City staff and the Chamber of Commerce will examine this concept and determine whether or not the current Business Advisory Board serves this need or can be redesigned to fill this role.

Business Retention

The purpose of the business retention strategy is to remove impediments for business and industry to remain or to expand operations in the community. The key to accomplishing this is communication between business persons, public officials and labor representatives. The specific actions which should be taken include that:

1. City staff will provide business with technical assistance regarding local, state and federal regulations;
2. City staff will work with local financial institutions to develop a revolving loan pool for small businesses using the Small Business Administration guidelines for definition. Seed money for this project would come from the Maxima loan project repayments and any other appropriate funding sources;
3. The Chamber of Commerce will survey existing businesses and industries to identify specific business assistance needs within the community, and the City staff and the Chamber will develop a brochure to inform businesses of available technical financial, and managerial assistance; and
4. City staff will pursue continued funding for a local program similar in nature to the moribund Economic Incentive Grant program.

Industrial Recruitment Strategies

The design requirements for the Martin-Marietta industrial park will be "top-of-the-line" in terms of level of investment required and on-site amenities, adding a new dimension to the industrial recruitment process in Oak Ridge. The City will continue to pursue its own industrial park development in a manner which complements and supplements Martin-Marietta's efforts. Though the "targeted industries" concept has been pursued by the Industrial Development Subcommittee of the Chamber of Commerce (the main recruiting arm for the City), it should be further refined in light of Martin-Marietta's recruitment program. The industries targeted for the City's industrial parks should continue to include those high growth industries that are not appropriate for the Martin-Marietta industrial development program, yet still conform to the policy of attracting firms which help to balance the economy and produce jobs for wider strata of the population.

The most effective recruitment strategies will target those high growth firms whose business location decisions emphasize factors that match the assets of the Oak Ridge community. In the analysis performed by the Industrial Development Subcommittee, it was found that the assets of Oak Ridge dovetail with the key location factor of high-technology firms. The City has a skilled, technical work force, a very favorable local attitude toward business, reasonable industrial property and construction costs, transportation facilities (water, rail and highway), several large industrial sites that can accommodate significant plant expansions, and an excellent local school system, community college, and nearby university.

Recruitment strategies will include the following activities:

1. The City will support and work closely with the Martin-Marietta Corporation in recruiting new industries and businesses for their industrial park development.
2. The City will continue to help finance the primary business and industrial recruitment efforts by the Oak Ridge Chamber of Commerce.
3. The City will work with the Chamber of Commerce in updating and refining the list of target industries for Oak Ridge based on a match between high growth industries, business location decision factors and the community's assets.
4. The City and the Chamber will coordinate their industrial recruitment program with Martin-Marietta's recruitment efforts in order to increase recruiting effectiveness.

Specific marketing strategies for recruitment must take into account the fact that Oak Ridge is really a "national city" with very special, if not unique, human and technological resources. This requires that any marketing tools used by the community be of an extremely high quality. While material prepared by the Chamber of Commerce has won many State awards for excellence, it should be recognized that our competitors for economic development lie not only within Tennessee.

Elements of the City of Oak Ridge industrial marketing program will include the following:

1. The City will financially support the Chamber of Commerce in its marketing program to attract new industries. The key components of this marketing program should include direct mail campaigns, telephone contacts, advertisement in trade journals of targeted industries, and personal visits.
2. The City will assist the Chamber of Commerce in developing a high quality, color brochure which includes appropriate maps and photographs which highlight the City's outstanding sites and amenities, specifically including Comprehensive Plan highlights.

New Business Formation

The stimulation of new business formations has relatively low risk, but potentially high gain for the Oak Ridge community. The current market for innovative technologies is good and Oak Ridge has a particular potential for creation of technology spin-off firms. The recent changes in the DOE patent policy coupled with the "brain power" resources at ORNL, ORAU and other installations in the community provide the Martin-Marietta Corporation with a rich source for new business formation and technology transfer.

POLICY E-4: In a joint public-private partnership approach, the City will work with the community to nurture spin-off industries and stimulate the formation of affinity industries in Oak Ridge.

Martin-Marietta has announced plans to develop the Tennessee Innovation Center as a "technology incubator" and provide venture capital and managerial and market assistance to help launch new high technology businesses.

In marketing new technologies, Martin-Marietta will give preference to companies that are either situated in Oak Ridge or willing to establish local facilities. These efforts are expected to contribute significantly to the establishment and success of new business formations in Oak Ridge during the planning period.

To further contribute to the new business formation process, the City of Oak Ridge will do the following:

1. Restructure its incubator facility to offer a wide range of business assistance to its tenants, such as the small business education opportunities soon to be available through Knox County and the Innovation Center.
2. Identify and document available resources of the University of Tennessee, the Tennessee State Institute of Technology, the Small Business Administration and the Tennessee Valley Authority so that their use can be maximized in conjunction with the entrepreneurial institute.
3. Give consideration to further expanding its incubator facility. A market analysis of this situation will be completed within the context of the 1986 fiscal year to determine whether the situation requires construction plans or further monitoring.

With the formation of new venture capital funds in the community and the cooperative efforts to establish the commercial potential of high technology innovations, Oak Ridge is in a position to create that critical mass of marketable innovations that attracts additional outside venture capital. This strategy may prove to be the key to realizing the full economic potential of Oak Ridge's "brain power."

Financing Business Development

Several revenue sources and financing techniques comprise the mosaic of public investment in industrial development in Oak Ridge.

1. The City will use methods such as tax increment financing to leverage selected industrial development projects located on existing and new industrial sites.
2. The City will use Industrial Development Bonds to assist new and existing industries in financing new plant facilities and expansions.

3. In conjunction with Martin-Marietta, the City will pursue the formation of venture capital funds to assist start-up and spin-off businesses in the community.
4. The City should continue to seek state and federal sources of funding for industrial development efforts located in the Technology Corridor.
5. The City will help to obtain financing from benefiting local jurisdictions, the state, and the federal government for construction of the Technology Corridor airport.

Industrial Site Acquisition and Development Strategies

As indicated on Figure 6, Business and Industry Plan, several industrial park sites are planned for development between 1985 and 2005. Public infrastructure improvements have been extended to many of these sites with additional service improvements or extensions scheduled in the City's Capital Improvements Plan for FY-1986-1991. Acquisition and development of the identified industrial land will proceed according to the City's property acquisition plan and following points.

1. The City will work with Martin-Marietta to extend services to the Oak Ridge Technology Center Industrial Park.
2. The City will acquire new sites for industrial development from the Department of Energy according to the DOE Property Acquisition Plan.
3. The City will work to secure financing for the extension and improvement of urban services to the new industrial sites identified in the Land Use Plan.
4. The City will streamline the permit and plan review process by establishing a "one-stop" regulatory system.

Site Design and Access Control

Issues of common concern to Oak Ridgers also center on the need to ensure that economic development projects are environmentally sound, aesthetically attractive, and enhance the movement of goods and people within and through the community. Oak Ridge residents want to preserve and enhance the local quality of life. Future economic development projects should be located and designed to complement the quality of life and improve the community's image as a clean, safe place to live and work.

POLICY E-5: The City will promote the use of contemporary architectural design, site planning, access control, sign standards, and landscaping techniques for new and redeveloped commercial and industrial properties so as to protect and improve the aesthetic and natural environment of the city.

To implement this policy the City would:

1. Ensure that economic development is environmentally sound and aesthetically attractive and preserves the capacity of major transportation routes by implementing the strategies listed under General Development, and Transportation;
2. Transfer City industrial property with restrictive covenants which specify the architectural, sign, access, and landscaping requirements developed for the specific industrial park; and
3. Revise access, sign, and landscaping standards in the Zoning Ordinance and base these standards on a system of performance which creates strong incentives for appropriate site design in conformance with the policies of the Comprehensive Plan.

Encouraging Employee Residence and Spending in Oak Ridge

It is important to appreciate and act on the fact that the strategies designed to stimulate housing production are most vital to the realization of the full economic potential of the technology and employment generated in Oak Ridge. The most effective industrial development and recruitment program simply will fall short of meeting the established goals and policies for the City if the community is not able to attract a higher percentage of employee residents. Inducing more Oak Ridge employees to reside in the city is dependent on the production of a greater quantity and variety of quality housing at competitive prices in a choice of locations within the city. Population growth, new commercial development, full and efficient utilization of school, plants and other public facilities, continued revenue growth, and the continued social and cultural vitality in the community are dependent on the successful implementation of the strategies designed to facilitate housing production.

To encourage employee residence and spending in Oak Ridge, the City will ensure that:

1. Housing and community information will be provided to new industries to increase their employees' awareness of the housing market opportunities and available high-quality community facilities and services;
2. In conjunction with the Chamber of Commerce, an aggressive advertising campaign will be pursued which highlights the desirable quality of life in Oak Ridge as a place to work, reside, and shop; and
3. Strategies will be implemented to preserve existing neighborhoods, expand the choice of available housing, enhance local shopping and entertainment opportunities, enhance the movement of goods and people through and within the community, and improve the image and aesthetics of the downtown and city center.

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Commercial Revitalization and Development

The retail sales and the service sectors are important components of the local economy. However, the community has experienced some sales leakage to out-of-town competition because of the lack of an adequate supply of some types of retail and service establishments such as high quality restaurants and entertainment establishments. The City has also failed to capitalize on other important aspects of economic development such as local convention and tourism business.

POLICY E-6: The City will support the growth and diversification of retail and service establishments to better serve resident consumers and broaden the city's regional shopping center function.

The future land use plan and the general development strategies indicate the areas and the ways commercial businesses can grow and contribute to an improved downtown image and enhance economic function in the region. The strategies in this section support these actions and specify additional ways the City can help to support the growth and diversification of retail and service establishments to better serve resident consumers. These strategies include the following:

1. The City, in partnership with the Downtown Shopping Center, will conduct a marketing study of the retail potential for Oak Ridge. This study will address the renovation and expansion of the Downtown Shopping Center, the market potential for the neighborhood centers and identify the specific types of retail trade and service establishments needed within the community.
2. A retail merchants association will be formed with the assistance of the Chamber of Commerce.
3. The City may establish several business improvement districts (as described in the Land Use Plan) in order to focus public assistance efforts on those areas most in need of commercial revitalization. These areas consist of the Downtown Shopping Center and surrounding area, which will be designated as the City's central business district, and several neighborhood shopping nodes.
4. The City may use the tax increment financing provisions found in several chapters of Tennessee Code Annotated in these improvement districts to help pay for site improvements performed in conjunction with new commercial development. This tool is particularly effective when working on vacant land.
5. Public improvements in commercial areas may also be financed with bond funds which are repaid over time by benefitting property owners.
6. If an additional local sales tax levy is enacted, a certain percentage of these funds could be earmarked to establish a commercial redevelopment fund to implement these improvements.

7. The City may help leverage redevelopment efforts, as part of a joint, public-private partnership approach, by allocating a portion of the revolving loan program for business development and retention program funds to commercial redevelopment and revitalization projects. This assistance can take the form of reduced-interest loans or loan guarantees.
8. Additional traffic improvements to enhance accessibility to and within the "downtown" area is vital to these commercial revitalization efforts.
9. The City should encourage the growth of needed retail trade and shopping malls by using its power of eminent domain, if necessary, to assemble properties that can be developed according to the policies prescribed in this Comprehensive Plan.
10. Public assistance in the form of improved access and provision of pedestrian amenities shall be designed to dovetail with commercial revitalization plans developed for each neighborhood shopping center designated a business improvement district.
11. To help demonstrate continued bipartisan support for commercial revitalization efforts, the City should maintain close staff contact with the Chamber of Commerce members and community business leaders concerned with commercial development.

Local Conventions and Tourism

The recently announced plans for an ORAU hotel and conference center are a welcome development that promises to give a much needed boost to the local convention trade. However, there is believed to be a need for additional lodging facilities which will help Oak Ridge become even more competitive for convention business with its major rivals--Gatlinburg and Knoxville. Location of additional hotel and motel projects in Oak Ridge will help the City to capitalize on future conferences related to the industries which will locate in the Technology Corridor.

POLICY E-7: The City will support public-private efforts to increase local convention and tourism business.

The following approaches will be used to try to improve tourism in Oak Ridge.

1. The tourism potential of Oak Ridge should be analyzed by the Convention and Visitors Bureau in a separate marketing study which focuses on the benefits and costs related to continued or expanded public support for tourist-related promotional activities. Possible areas for future work include adoption of a promotional theme, wider promotion of more events on Melton Hill Lake, and production of more useful and sophisticated promotional brochures and tourist information packages made available in each motel room.

2. The Convention and Visitors Bureau shall develop a tourism plan which outlines a program for increasing tourism business and small, specialized conventions.
3. The City should work with the Chamber, Martin-Marietta, ORAU and local businesses to capitalize on a promotional theme. A positive media campaign associated with attracting more residents, the proposed park, recreation and transportation improvements, and the improved "gateways" to the City all will contribute to an improved image of the city.

IMPROVING INTER-GOVERNMENTAL COOPERATION

Intergovernmental coordination of economic development efforts which affect the City is an important dimension of a successful economic development program. The City should cooperate with and capitalize on intergovernmental and multi-jurisdictional efforts to attract industry and business into Anderson and Roane Counties, and the Technology Corridor. The same intergovernmental approach is essential in consideration of a general aviation facility.

POLICY E-8: The City will increase contact and participation on economic development projects with surrounding governmental jurisdictions.

POLICY E-9: The City is committed to serving as the anchor to the Technology Corridor and working with other governmental jurisdictions to promote economic development which is beneficial to area residents.

Increasing Economic Development Activities within the Region

The future development of Oak Ridge is not an isolated phenomenon. What happens in Anderson, Roane, Blount, and Knox Counties will dramatically affect Oak Ridge's future as well. The Mayor, City Council, and members of the Chamber of Commerce of Oak Ridge already participate in a number of organizations which span across jurisdictional boundaries but future efforts should include more active roles for many of the key players. These roles may encompass the following:

1. A group currently in its formative stages, the Venture Exchange Forum, should continue to be actively supported by the Oak Ridge community. This Forum is designed to provide budding entrepreneurs with an opportunity to communicate with a support system of professionals to permit a free flow of information regarding opportunities and how to mature them into businesses.
2. A start has been made through the entrepreneurial institute concept to work closely with neighboring jurisdictions to develop programs and stretch resources. This concept should be expanded and developed on a region-wide basis.

Technology Corridor

The City should make a concerted effort to establish closer ties and better communication with the Tennessee Technology Foundation (TTF). Since the industrial developments planned by Martin-Marietta and the City form the northern anchor for the Corridor project, more support from and coordination with personnel from the Foundation is important.

Properly integrating Oak Ridge industrial development efforts and strategies into the overall plan for the Technology Corridor will play a large part in the success of that project which in turn will produce more economic benefits for the City and surrounding jurisdictions.

The City should join with the other involved jurisdiction in maintaining a consistent lobbying effort in the State legislature for financial support of the Technology Corridor, including development of engineering design plans for public water and sewer service, joint promotion efforts, and the Technology Corridor airport.

POLICY E-10: The City will work with other governmental jurisdictions to plan and develop a general use aviation airport to serve existing businesses and industries and to support recruitment of new businesses and industries with financing for the project to be shared by those jurisdictions that will benefit from the airport facility.

Technology Corridor Airport

Ready access to air transportation is an important ingredient for attracting high technology industries and corporate office developments. Oak Ridge currently lacks quick access to an airport and consequently its competitive posture in industrial recruitment efforts is considerably weakened.

The nearest airport capable of handling commercial and private air traffic is McGhee-Tyson located approximately 32 miles away in Blount County. Travel time via existing routes during peak early morning and late afternoon traffic congestion approaches one hour. This inconvenience is simply unacceptable to most corporate executives. The maximum acceptable travel time is typically fifteen minutes.

The report compiled in 1984 by City staff documented the need for and investigated the feasibility of an airstrip for Oak Ridge. This report correctly concluded that the development of an airport in Oaks Ridge is an essential component of the City's economic development efforts and will produce a net return on the investment in the airstrip project.

Pursuant to the recommendations in this report, it is recommended that the City take the following actions to establish an airport serving Oak Ridge and the Technology Corridor as quickly as possible:

1. Continue to seek and secure State and federal financial assistance for airport construction;
2. Implement the recommendations in the revised Airport Master Plan;
3. Develop a local funding strategy composed of financial support from the government jurisdictions which will benefit from the airstrip; and
4. Continue to expand effort to increase community support for the airstrip project.

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LAND USE AND DEVELOPMENT



Land Use and Development Analysis

This section of the General Development chapter of the Oak Ridge Comprehensive Plan addresses land use and land development. The analysis of land use conditions and issues sets the stage for policy and plan formulation by covering the following topics:

- Major land use influences,
- Pattern of urban development, and
- Zoning and subdivision regulations.

MAJOR LAND USE INFLUENCES

Ownership and Development

The City of Oak Ridge covers approximately 89.9 square miles (57,541 acres). However, only 13,615 acres are in private ownership and comprise most of the urban portion of the municipality. (Refer to Figure 2, City of Oak Ridge). The remaining area is controlled by the U.S. Department of Energy (62 percent), the Tennessee Valley Authority (4 percent), the University of Tennessee (4 percent), and the City of Oak Ridge (5 percent). The University of Tennessee owns 2,230 acres on which it maintains a forestry research center, and the City holds a recreational easement over 778 acres of Tennessee Valley Authority (TVA) land south of the urban area at Haw Ridge.

Approximately 40 percent of the urban portion of Oak Ridge is undeveloped. Some of this undeveloped property is public greenbelt and some is other City property, but most of it is privately owned. This is not to say, however, that all the private, undeveloped land is available for urban use, since topography and other constraints may limit its use. The percentage of commercial and industrial land (excluding DOE plants) is only about 9 percent, while 25-30 percent would have been closer to the national average, according to a 1981 study by the American Planning Association. Housing remains the predominate use of developed property.

Land Development Constraints

A number of features severely constrain the pattern of urban development in Oak Ridge. One is the amount of steep slope (greater than 20 percent). (The 1985 Plan referred to Figure 7, Land Development Constraints, which was omitted from the report). The City encompasses several tall ridges, including Black Oak (on the north), East Fork, McKinney, Pilot Knob, Pine, Chestnut, Haw, and Copper (on the south). The rugged topography has forced the urban area into a linear southwest-northeast pattern in East Fork, Gamble and Emory Valleys. The difference in elevation from valley floor to ridge top is approximately 300 feet.

Residential development has occurred on the slopes of some of these ridges, but site preparation costs are high and substantial amounts of land must be left as open space.

Another urban development constraint is the ownership of the majority of the City by the DOE. Such land (if developable) has only rarely been released for public purchase since 1959, when the urban portion of the federal reservation was sold off and the City established. The western end of the urban area abuts the DOE property, which constrains further growth.

A third limitation to growth, although much less significant than the first two, is the floodplain of East Fork Poplar Creek, which flows from the Y-12 plant through the western half of the City along the Oak Ridge Turnpike. Figure 7 also illustrates the extent of water service in 1984. Adequate water service to new development locations is limited by elevation and also by the availability of trunk lines to major open areas.

PATTERN OF URBAN DEVELOPMENT

Early Development

A plan was devised in 1941 by the U.S. Army Corps of Engineers and Skidmore, Owings and Merrill, Inc., for a settlement south of Black Oak Ridge to house workers for the plants that were to build the first atomic bomb. Two residential neighborhoods were initially planned for approximately 12,000 persons. These were to center on Jackson Square, the town's commercial and administrative center. The need for workers quickly grew, and another neighborhood was added to the east, and subsequently three others to the west. By 1945, Oak Ridge had 75,000 residents, most of them in trailers, dormitories, and other temporary shelters.

The town was divided into halves by the road that was to become Oak Ridge Turnpike. To the north were housing, schools, parks, and a few shops and offices. To the south were industrial areas supporting the main defense plants, which were well removed from the urban area.

One of the principal concepts of the residential sector was the neighborhood. Each had its own elementary school and playground. A small collection of shops was located within walking distance of most residences. Collector streets wound up the side of Black Oak Ridge, and short local streets looped from those. The steep terrain enforced the pattern of short, narrow, curvilinear streets with open space to the rear of the small homes. There were two principal commercial centers: Jackson Square and its western counterpart, Jefferson Center. Several other, small commercial areas were also established, usually near the elementary schools.

The 1948 plan for Oak Ridge envisioned a population growing steadily back from the 35,000 post-war ebb. That document strongly reinforced the initial neighborhood concept by designating locations for new or expanded schools, playgrounds, and shopping areas in established areas and by proposing five similar new neighborhoods south of Oak Ridge Turnpike.

FIGURE 7

LAND DEVELOPMENT CONSTRAINTS

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However, this plan recognized the limited ability of Jackson Square and Jefferson Center to serve the community's needs and, thus, proposed a major new shopping center south of the Turnpike.

This main shopping center was to be situated next to the future City's administrative center which was to include City Hall, AEC headquarters, new schools, and a large park. North of the Turnpike was to be the cultural center composed of the new senior high school, an existing junior high school, and athletic and recreation fields. Multiple-family housing was planned to ring most of this area. The entire complex, but most especially the shopping center, was to be the "social and civic center" of Oak Ridge. It would be a place where people could gather not just to shop but to participate in community events, watch others, and enjoy the bright lights and nightlife. The design would be strongly oriented toward the pedestrian to promote strolling and socializing. It would truly be the psychological center of Oak Ridge.

Current Pattern of Land Use

An examination of Figure 8, Land Use, 1984, will indicate that the major concepts of the 1948 plan for the City of Oak Ridge have been carried out. The differences between that plan and the current situation are sometimes beneficial and sometimes not. The following description of the various elements of the 1984 land use pattern of Oak Ridge will discuss these differences while pointing out its major strengths, opportunities, and shortcomings.

Residential Pattern:

There has been some movement away from the strong neighborhood identification that was initially proposed. The residential areas which grew up in the 1950's, 60's, and 70's did not include neighborhood retail and school centers, and the planned closing of Cedar Hill and Elm Grove Elementary Schools will further erode that concept. Much of the dormitory housing that originally was constructed near each neighborhood center has long since been removed, thus decreasing the ability of people to walk to these locations. Overall, the density of population in Oak Ridge has decreased from its high wartime levels. Also, the more recent residential developments have taken on more of the appearance of traditional American suburbs, with larger lots, no sidewalks, and split-level housing.

Residential density in Oak Ridge is generally low due to the substantial areas of steep slope and the predominance of detached housing. However, lot sizes in the older neighborhoods are small, and most residences are within one mile of the Oak Ridge Turnpike. Newer neighborhoods have substituted larger lots for the public greenbelts which are common in the older portions of the City.

In the central portion of the City (between Pennsylvania and Louisiana Avenues) there is a substantial amount of middle- and upper-density housing, as shown by Figure 8. Most of these are two- and four-unit buildings

detached housing in a somewhat haphazard manner, these units detract somewhat from the detached housing, since their maintenance and parking are common problems. A small percentage of the older attached housing is the early H-type dormitory. A number of apartment units were constructed in the 1950's east of the shopping center, along Vanderbilt Drive, and in the vicinity of Tacoma Road. Only a relatively small amount of attached housing was built in Oak Ridge after 1960.

Recent residential growth has occurred in the far western portion of the City and in Emory Valley in the southeast. These are the two most prominent sites available for housing growth, with a third being the vicinity of Tuskegee Drive.

Thus, there appears to be a need to devote more land to the creation of contemporary attached housing; to open new locations for housing near areas where investments in streets, utilities, and parks have already been made; to reduce the mixture of attached with detached housing; and to resolve the question of how much emphasis the classic nucleated neighborhood should be given.

Commercial Pattern:

All neighborhood shopping areas with the possible exception of Jackson Square have lost much of their previous vitality. There are numerous shop vacancies in these neighborhood centers, and some present tenants are oriented toward specialty goods rather than common needs. As mentioned previously, the newer neighborhoods do not include retail centers but, instead, rely on the commercial activity along Oak Ridge Turnpike and Illinois Avenues.

Commercial enterprises stretch along the Turnpike from Jefferson Center on the west to the Downtown Shopping Center to Jackson Square and onward to the eastern end of the City. Around the Downtown Shopping Center are clustered a number of other retail and service businesses, particularly along Illinois Avenue.

The design of the Downtown Shopping Center does not seem to have achieved the social and civic intentions of the 1948 Oak Ridge plan but it is clearly the predominate shopping location for the City. Its peripheral development along the Turnpike contributes to some traffic and visual problems along Oak Ridge Turnpike. (These problems are discussed further in other sections of this Plan.) Fortunately, access to many activities on South Illinois Avenue is limited to a frontage road.

Around Jackson Square, commercial uses have been sited to the west, east, and south. These contribute to the nearly continuous strip of businesses along the Turnpike, many of which have direct access to that road. Most such sites along the Turnpike are best suited for these non-residential uses. What is important, however, is that such development be accomplished in a manner which does not impede the function of Oak Ridge Turnpike.

Several major opportunities exist in Oak Ridge to build upon the established commercial pattern and improve the coherence of the overall urban design scheme. A large, vacant site exists immediately southwest of the Downtown

FIGURE 8

LAND USE, 1984

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Shopping Center, another northwest of the American Museum of Science and Energy, and a third on the campus of Oak Ridge Associated Universities (ORAU), west of the museum. These sites have excellent access, visibility, and proportions. Possibilities for these sites include specialty and other retail shops, offices, and fine restaurants. A 168-room hotel and convention center is scheduled to open in early 1986 on part of the ORAU site. This facility will feature a 200-seat restaurant with lounge, and banquet and conference rooms. If properly designed, the development of the remaining vacant land in the area could be linked to the hotel, museum, existing downtown center, and the Oak Ridge Civic Center in such a way as to nearly fulfill the hopes of the 1948 Oak Ridge plan, to bolster the collective success of this vicinity, and make a major urban design statement for the City. Two other prime commercial sites are the unused "front yard" of the DOE Administration Office (just south of Jackson Square) and land to the south and west of the DOE building.

The DOE has indirectly limited industrial and commercial growth in two ways. Until 1959, the DOE (then the Atomic Energy Commission) owned all the land in the federal reservation, leased it to private businesses only to the extent necessary to meet what it perceived as the needs of its plant workers, and generally acted in a very paternalistic manner toward the community. Consequently, private enterprise does not have a long history in Oak Ridge. Even though commercial and industrial areas were designated in the 1948 plan for Oak Ridge, there has not been an aggressive effort until recently to attract private industry and an expanded range of retail and service businesses. Therefore, citizens have developed the habit of travelling to Knoxville and beyond for many goods and services.

Thus, one of the major thrusts of this plan should be to direct the City toward greater balance among its land uses. There needs to be more private industry so as to avoid the economic and psychological problems of being a "company town," and there is a great desire on the part of the population for a wider range of shops, services, and (especially) restaurants. The issue of economic self-sufficiency is discussed in greater detail in Chapter 2, Economic Development.

Industrial Pattern:

Other than the main DOE plants, industrial development in Oak Ridge is limited to four locations. (Refer to Figure 8, Land Use, 1984.) The oldest is a collection of warehouse and manufacturing buildings near Warehouse Road in the extreme eastern part of Oak Ridge. These structures are in generally poor condition, as they were erected in the 1940's for the war effort. South of Emory Valley Road at Laboratory Road is the earliest City industrial park, which has only one remaining available site. Along Midway Road and South Illinois Avenue is another industrial area, which includes relatively large facilities operated by Boeing and EG & G ORTEC, as well as numerous smaller concerns. The City's latest industrial park is located along Union Valley Road, south of the main urbanized area. With the exception of some residences located south of industrial park near Emory Valley Road, industrial activities are fairly well separated from residential sites and pose no problem in that regard.

The City of Oak Ridge has optioned its land between Union Valley Road and Bethel Valley Road to Martin Marietta to develop a major research and office park. This goal will be pursued with the assistance of the Tennessee Technology Foundation. (This subject is explained further in the Economic Development chapter of this Plan.)

Public Properties Pattern:

A substantial amount of the urbanized portion of the City is owned by the City of Oak Ridge or the Oak Ridge Schools. (Refer to Figure 8, Land Use, 1984.) City lands include the Municipal Buildings and Civic Center site, senior center, Scarboro Center, the maintenance and public works garages, and the City parks. (These facilities are described and discussed in detail in the Public Facilities and Utilities section of this Chapter). A substantial amount of property along Oak Ridge Turnpike is not on the tax rolls when DOE property and church sites are included. The major unobligated publicly-owned site in the non-DOE portion of the City is the area adjacent to the Federal Office Building.

ZONING AND SUBDIVISION REGULATIONS

Oak Ridge Zoning Ordinance

Land use and site design are regulated by a zoning ordinance (consisting of text and map). This ordinance designates what kinds of developments (e.g., single-family residential, offices, etc.) can be placed in various portions of the City and prescribes certain site design criteria for each of the Zoning Districts.

The Zoning Districts currently in effect in Oak Ridge are as follows:

- G, Greenbelt District.
Preserves publicly-owned property in its natural state.
- RG-1, Residential, Open Space, and Reserved Districts.
Allows one-family dwellings, agriculture, forestry, and cemeteries.
- R-1-A, R-1-B, and R-1-C Districts.
Allows one-family dwellings with lot sizes of 20,000, 10,000, and 8,000 square feet, respectively.
- R-2 District.
Allows one-, two-, three-, and four-unit residential buildings.

- R-3 District.
Allow R-2 District uses and other multiple-family dwellings, hotels, offices, and hospitals.
- R-4-A, R-4-B, and R-4-C Districts.
Allow apartments, townhouses and condominiums.
- O-1 and O-2 Districts.
Allow offices. The O-2 District also allows housing, hotels, and hospitals.
- Parking District.
Allows only off-street parking.
- B-1 District.
Allows retail businesses which serve the needs of the surrounding neighborhood plus offices and medical clinics. (Site plan review by the Planning Commission.)
- B-2 District.
Allows any retail business, offices, restaurants, theaters, hotels, and research laboratories.
- UB-2 District.
Allows the same uses as B-2 but does not allow as intense site use. (Site plan review by Planning commission required.)
- B-3 District.
Allows gas stations, restaurants, and vehicle sales.
- IND-1 District.
Allows light manufacturing and warehousing.
- IND-2 District.
Allows light and heavy manufacturing and warehousing.
- F.A.I.R. District.
Allows forestry, agriculture, industry, and research. (Applied to the DOE property.)

- Education District
Allows schools and colleges.
- Floodway District.
Restricts use in designated floodways.
- MH-1 District.
Allows mobile home parks.

The Zoning Ordinance contains some Districts which are not often used, such as the Parking and Education Districts. Site plan review is conducted by the City staff except in the B-1 and UB-2 Districts. In those Districts, site plan review is conducted by the Planning Commission with staff recommendations. The ordinance allows planned-unit residential developments in which normal design requirements may be waived in exchange for beneficial or superior design. Commercial or industrial sites may not use this provision, which may be a shortcoming of the ordinance.

Another apparent difficulty is that certain residential Districts allow non-residential activities.

Oak Ridge Subdivision Regulations

The Oak Ridge Subdivision Regulations establish procedures and standards for the subdivision of land for sale purposes and prescribe minimum standards of design for utilities and roads. This ordinance is well-written and serves the City without major difficulties in use or interpretation.

Land Use and Development Plan

Land use issues, policies and plans are presented in this section of the Oak Ridge Comprehensive Plan. Issues have been identified through the preceding Analysis of Conditions; by discussions with City staff, residents, and business people; and by careful inspection of the development pattern of the city.

Land use policies were proposed by the project planning team and refined by interest group members and other local residents and business people. Each policy or series of policies is introduced by a brief presentation of the issue or concern which it addresses.

COMPREHENSIVE LAND USE PLANNING

There currently is no adopted land use plan and only a limited body of land use policies for the City of Oak Ridge, so rezonings are decided without formal reference to a broad strategy. This leads to great uncertainty on the part of landowners and causes added difficulty for City officials. The lack of a prescribed land development strategy also inhibits achievement of transportation, economic development, housing, and other aims.

POLICY L-1: The City will formulate and adopt a generalized land use plan which designates land use categories and intensities of development and use this plan with land use policies and development standards.

How Oak Ridge should grow is a matter of great concern. The urban area has a very linear pattern, and pressure exists for further westward extensions. Should the City continue to stretch down the East Fork Valley or be directed to more centralized locations? The insufficient expressions of a city center and lack of community focus is a major concern of Oak Ridge residents. Opportunities exist, however, to build a more cohesive City which could have economic, fiscal, image, and transportation benefits.

POLICY L-2: The City will encourage more centralized growth while allowing development to occur elsewhere when services can be made available in a cost-effective, environmentally-sensitive manner and when traffic can be properly managed.

Land Use Plan Map

Figures 9 and 10 illustrate the generalized plan for land use in Oak Ridge, which is intended to complement the land use and development policies established in this document. The Land Use Plan maps and policies together form the foundation of the City's Zoning Ordinance and provide direction for other Comprehensive Plan elements such as transportation, parks, utilities,

and housing. The Land Use Plan maps themselves are designed to be a general expression of the community's spatial development desires and are not a detailed and exact statement of the future. Interpretation of the maps and policies using guidelines described later in this text is necessary for proper implementation of the complete plan.

Three residential categories are shown by the Land Use Plan maps and encompass the full spectrum of housing types which may be expected and desired. The locations of these residential areas (as with the commercial and industrial areas) were selected based upon existing development, physical constraints, and the land use policies. Within any particular land use area shown on Figures 9 and 10, there may be minor exceptions or irregularities. As development or redevelopment occurs, the City staff and officials will address these cases on an individual basis using the Land Use Plan policies, site design principles, and comments from neighboring land owners or tenants.

The three residential land use categories utilized are as follows:

- Low-Density Housing (0-4 dwelling units per acre). Includes single-family detached housing and duplexes. Existing, small retail areas are usually not shown, meaning that they will be allowed to evolve to some other use in conformance with the Land Use Plan policies. Also, land use policies will allow a very selective increase in density during land redevelopment in certain neighborhoods.
- Middle-Density Housing (4-8 dwelling units per acre). Includes single-family detached housing, duplexes, four-plexes, and townhouses.
- High-Density Housing (8 or more dwelling units per acre). Includes all of the above plus eight-unit buildings and apartment/condominium buildings.

Two categories of commercial land use have been designated:

- Neighborhood Business. Allows businesses conducting retail sales having no exterior storage. Includes offices, medical-dental clinics, convenience stores with gasoline pumps, liquor stores, restaurants (maximum floor area 4,000 square feet, no convenience food types), mortuaries, private schools for art dance, etc., laundromats, dry cleaners, tailors, barber-beauty shops, shoe repair, etc.
- Community Business. Includes all neighborhood business activities, hotels, convenience food restaurants, auto service stations, athletic clubs/exercise spas, bowling alleys, theaters, animal hospitals, private clubs, taverns, rental equipment businesses (under certain conditions), and similar commercial activities which are in keeping with the nature of this area.

Three types of industrial land use categories are designated:

- Office-Institutional. Allows commercial, professional, and institutional office buildings.

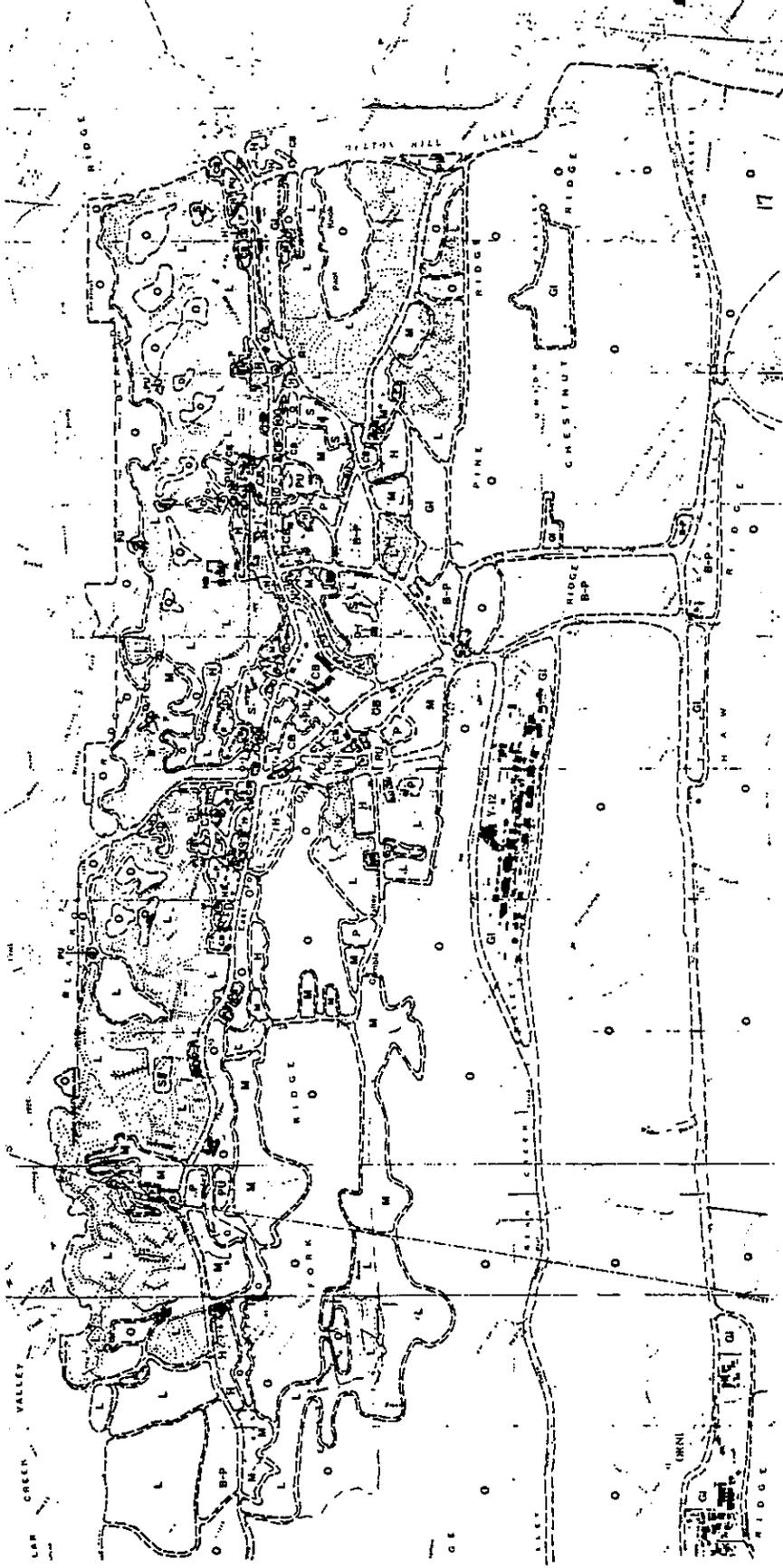
City of
Oak Ridge
Comprehensive
Plan

**Figure 9:
Land Use Plan**

[Symbol]	Low-Density Housing
[Symbol]	Mid-Density Housing
[Symbol]	High-Density Housing
[Symbol]	Neighborhood Business Center
[Symbol]	Office-Institutional
[Symbol]	Business Park
[Symbol]	General Industrial
[Symbol]	Public
[Symbol]	Park
[Symbol]	School
[Symbol]	Open Space

Scale: 1" = 1000'
North Arrow

BKW
ROBERT C. BENTON & ASSOCIATES, INC.
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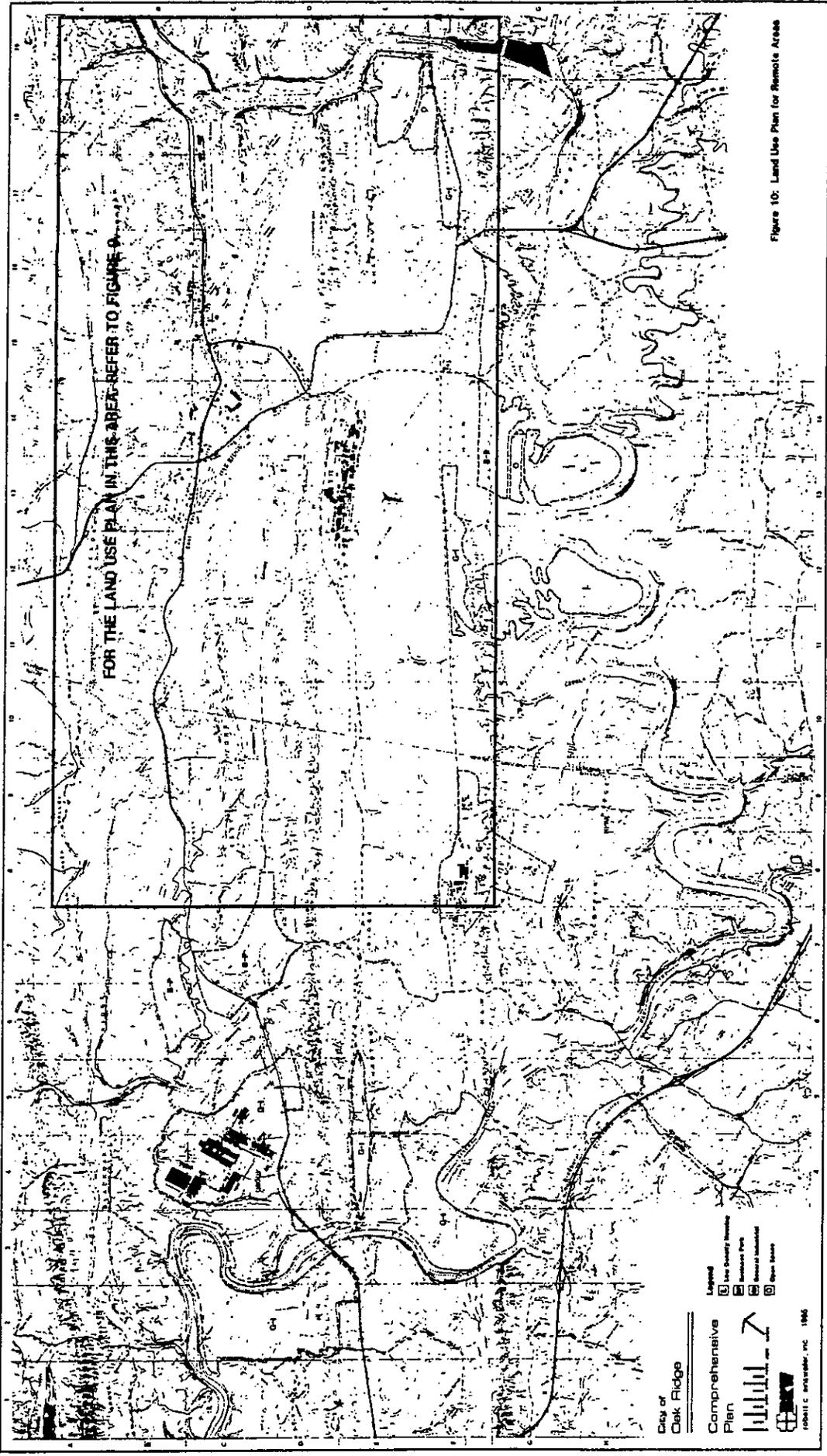


Figure 10: Land Use Plan for Remote Areas

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- Business Park. These areas are intended to promote an attractive mixture of light industry, office buildings, research and development facilities, and office-warehouse or office-showroom activities having well-landscaped sites, nicely-designed buildings, no exterior storage, and only small amounts of truck traffic. Allowable supportive uses may include restaurants, motels, and athletic clubs.
- General Industrial. These areas would include any of the Industrial-Office area activities plus heavy manufacturing, warehousing, truck terminals, auto, truck, and boat sales and repair, and any Community Business land use.

Other land use categories are as follows:

- Park. Municipal parks.
- Greenbelt. Municipal greenbelts.
- Public. Includes such activities as City Hall, the Civic Center, and the Public Works Building.
- Schools. Public schools.
- Undeveloped. Intended to be undeveloped or used for agriculture or similar activity. May also include occasional, isolated residences with no public sewer or water connection. For DOE property, this category would allow scattered storage or similar activity.

Amending the Land Use Plan Map

The Land Use Plan should be amended regularly in order to keep up with changes in policy and new development. Changes to the Land Use Plan map should be guided by the following considerations:

1. Is there a demonstrated need for additional land for a particular use?
2. Has there been a substantial alteration in the character of the area proposed for change, such as property values, blight or obsolescence?
3. Was there an error in the original use designation?
4. Has some major physical or economical change occurred which justifies reevaluation of the plan?

The users of this plan should not use only the Land Use Plan Map as the guide to consistency with the Oak Ridge Comprehensive Plan. They should rely primarily on the Land Use Plan policies. The map, after all, is only a "generalized" reflection of the intent of the policies. The map can never be an absolutely precise reflection of the policies. A project that is consistent with the written policies should be judged to be consistent with the plan even though the map may not reflect the proposed project. It would,

therefore, be appropriate for the Planning Commission and City Council to make a finding of consistency on a project without changing the Land Use Plan map.

ROLE OF THE CITY IN URBAN GROWTH

Generally, urban design quality and public fiscal stability are promoted by municipal participation in the land development process. This is because public coordination can reduce costs and adverse side effects, municipal finance can lower private costs and promote growth, and land controls can achieve certain public goals. Certain types of development and/or certain locations in the City are especially important and sensitive, for they represent opportunities to achieve community goals. The Turnpike-Illinois-Rutgers vicinity, the attraction of desirable industry and business, and (to a lesser extent) residential growth are topics of great local concern.

After deciding what it is the community would like to achieve in terms of urban growth, the City must define what its role in the process is to be. This may range from a simply regulatory role, through facilitating development, to a more entrepreneurial role, serving as an active partner in investments. This strategy may involve land use planning and design, capital improvements design and finance, economic development planning, population and social thinking, and quality of life issues -- all the elements of the Comprehensive Plan. More often than not nowadays, progressive and competitive municipalities are finding it advantageous to use their financial and regulatory powers in a business-like way to promote and guide development to achieve consensus goals rather than just be service and maintenance organizations.

POLICY L-3: The City will facilitate land development, road improvements, and utility extensions so as to create a community which grows in a logical, cost-effective, environmentally-sensitive pattern.

POLICY L-4: While retaining planned open space, the City will guide and promote the development of major vacant land parcels in the vicinity of the city center, along major thoroughfares, in industrial parks, and in residential areas through business-like financial leveraging, regulatory incentives, and/or detailed planning and design coordination, as appropriate.

Expansion of the Urban Area

The City of Oak Ridge will gradually expand the limits of its urbanized area in the coming years as population grows and major new industrial/office developments occur. The City desires that expansion of the urbanized area occur in an orderly fashion. Growth should respect pre-existing land investments and contribute to the long-term enhancement of municipal fiscal stability and the achievement of the elements of this Comprehensive Plan.

All fringe growth (and all infill growth) should be serviced by municipal sewer, water, and streets unless the activity is a single, large-lot residence or not a user of water. Additionally, fringe growth should conform to the Oak Ridge Land Use, Transportation, and Municipal Facilities and Utilities Plans and exhibit site design which does not adversely affect the value, use, or enjoyment of nearby properties. Strengthened requirements for site plan submission and review will be utilized to achieve acceptable transitions among all sites.

Easily developable tracts of land are becoming increasingly scarce in and around the Oak Ridge urban area. Therefore, the City will encourage private developers to make maximum use of available, buildable sites, consistent with existing land uses and good site design principles. While developers may find it to be feasible to work at lower densities than allowed, the City wishes to use its land regulatory powers to overcome terrain problems. Liberal use of its planned-unit development standards will also promote site design which responds to the natural and financial constraints of a site. Restrictive land controls, on the other hand, would likely have the effect of soon choking off housing growth in Oak Ridge, sending prices higher, and possibly harming long-term fiscal strength.

Urban expansion will be promoted not only through the Land Use Plan and the Zoning Ordinance, but also through strategic municipal participation in street and utility financing as set forth in the Municipal Facilities and Services Plan and the Transportation Plan of this document. Certain locations may not be financially feasible to develop unless certain extraordinary infrastructure costs are spread across all rate payers or across all property tax payers. Yet, these sites may be in the long-range interest of the City to assist.

Examples of such locations include land south of East Fork Poplar Creek, the southwest quadrant, and Site "A" (DOE property on the western urban edge). The City will evaluate each such instance individually and weigh the risks versus the opportunity; it will consider municipal investments currently outstanding for other utility or road improvements in relation to its statutory bond limits; and it will consider alternative opportunities, the market for the proposed development, and the policies of this Comprehensive Plan.

Finally, the City of Oak Ridge will investigate the purchase and resale of land owned by the DOE as a means of promoting urban expansion, particularly for residential development. The City will initiate discussions with the DOE to buy land for resale, either at the request of a developer or when it determines that there is a need for additional land on the market for a particular use. A development plan and financial analysis will be prepared and used to negotiate the purchase of land from the DOE. Such a document may also be used to estimate the need for municipal participation in land, utility, or street cost "writedown" and/or municipal financing of infrastructure. Municipal participation will be guided by the standards set forth in the Municipal Facilities Plan and the Implementation Chapter of the Comprehensive Plan.

Locations for possible acquisition of DOE property for industrial, office, and residential use include "Site A" (west of Mason Lane, north of Oak Ridge Turnpike), acreage west of "Site A", "Site O" (west of the K-25 facility), land south of the Oak Ridge Country Club and Sportsman's Club facilities, a tract of land south of Bethel Valley Road and west of Pumphouse Road planned for industrial-office use, a large tract of land near Chestnut Ridge Park, and waterfront acreage in the Freels Bend area.

Attracting Investment to Special Opportunity Areas

The City of Oak Ridge may from time to time determine, after thorough analysis, that the private market is not able to accomplish particular, highly-important elements of this Comprehensive Plan on its own. Yet, an opportunity may be perceived to exist for this municipal corporation to formulate a business relationship with one or more private entities to achieve a well-identified and short-term objective which is beneficial to both parties. In such instances, after carefully and fully evaluating the risks and rewards of such a venture, the City may execute an agreement with a private investor to utilize the City's various financial, regulatory, and coordinative powers as provided by Tennessee Statutes. The City is already engaged in such activity with its industrial development grant program and its industrial park development efforts. Planning, acquisition, and resale of surplus DOE land is another recently-explored opportunity, and there have been others.

There are a number of large, developable, and strategically-located tracts of land which may be considered special opportunity areas in Oak Ridge. On these the City may in some way act as a partner in development. Vacant property within the Illinois-Turnpike-Rutgers Central Business District is considered to be of special community interest.

The development hopes for the Central Business District (as described under the Commercial and Industrial section of this Land Use Plan) may be pursued after discussion and study by utilizing the following tools and techniques:

- Tennessee Statutes:
 - Central Business District Improvement Act (TCA 7-84-101 through 7-84-420),
 - Housing Authorities Act (TCA 13-20),
 - Industrial Development Corporation Act (TCA 7-53-101 through 7-53-311),
 - Public Buildings Authority Act (TCA 12-10-101 through 12-10-123), and
 - Industrial Building Revenue Act (TCA 7-37-101 through 7-37-116).

- Resources:
 - Self-Sufficiency Funds,
 - General Revenue Sharing Funds,
 - Revenue bonds,
 - Special assessments,
 - General obligation bonds,
 - Zoning and subdivision regulations, and
 - Eminent domain powers.
- Activities:
 - Buy land and sell it at a discount;
 - Sell bonds, make public improvements, and assess property owners according to benefits received;
 - Sell bonds, make public or other project-related improvements, and repay through increased taxes from a designated district (tax-increment financing);
 - Provide low-cost financing for private investments;
 - Buy a privately-developed building and lease it back;
 - Construct a public building and lease space in it; and
 - Allow higher-than-normal site development density.

These and other arrangements may be made to capture attractive opportunities that might otherwise be lost. But regardless of the techniques utilized, the City will remain aware that the key ingredients to any successful public-private partnership in this location or elsewhere are:

1. Recognition of mutual interest,
2. Clear definition of roles and responsibilities,
3. Development of feasible objectives, and
4. Strong local leadership from either the public or private sector.

Annexation

In the recent past there have been requests by owners of property just outside of Oak Ridge for the City to annex their property. In several cases

involving only a few acres, annexation has proceeded. However, some of these requests have been dropped after a study of the cost of providing services, who would pay for those improvements, and the anticipated benefits. Neither the City nor the affected landowners felt it was in their interest to proceed with annexation under the terms which had been negotiated. The cost of providing municipal services to outlying areas is usually quite high due to physical constraints (such as Black Oak Ridge) and/or the relatively low level of improvements presently in place in nearby developments. For these reasons, the Oak Ridge Regional Planning Commission had previously adopted the policy that there should be no annexation in Poplar Creek Valley unless the City planned to annex the entire valley and a plan for providing services to the whole valley could be developed. Nevertheless, annexation may some day present itself as an attractive possibility for both the City and nearby landowners.

POLICY L-5: The City will consider the annexation of land if careful study indicates that the long-term benefits to the City outweigh the long-term costs. Benefits to the City may include tax-base enhancement, accommodating population growth, improving traffic access, protecting neighborhood quality, controlling fringe growth, and fully utilizing investments in utility systems.

POLICY L-6: The City, when considering a request to annex land for residential purposes, will judge whether or not land exists within the municipality which is equally feasible to develop and whether or not that land exists in sufficient quantity to meet the foreseeable needs of the City.

COMMERCIAL AND INDUSTRIAL DEVELOPMENT

Within the broader context of directions of municipal growth are the matters of commercial, industrial, and residential development. Where should retail and service businesses be located, what businesses are most urgently needed, what overall design features are desired, and how should these land uses relate to the major roadways which serve them? Should commercial development be highly linear with unlimited roadway access or be clustered and use shared access? What types of industry are desired and where should they be located? What should the City's role in economic development be?

As direct access to individual commercial properties along a road like Oak Ridge Turnpike is increased, the traffic flow on the road is impeded due to vehicles making turns and crossing traffic lanes. When the function of a road is as important to a community as the Turnpike, certain public efforts to control access and turning are usually desirable. Land planning must be closely coordinated with traffic design and public capital improvements to achieve results. Another benefit of clustering commercial land uses is the reduction of visual clutter.

POLICY L-7: To the extent possible, commercial development which is located along Oak Ridge Turnpike and South Illinois Avenue will be in unified centers with shared access to those roadways.

POLICY L-8: The City will promote the location of intensively-designed retail, service, office, hotel, multiple-family residential, and civic activities in the Turnpike-Illinois-Rutgers vicinity and in the Jackson Square - Jackson Plaza vicinity while allowing appropriately located and designed neighborhood shopping centers.

POLICY L-9: The City will also allow community-scale retail development on appropriately-zoned sites having good traffic access and proper buffering from residential areas.

Central Business District Development

The City of Oak Ridge, according to the preceding policies, considers the Turnpike-Illinois-Rutgers vicinity to be its Central Business District and chief focus of non-residential activity. As such, it is regarded as the first priority area for major commercial investments. A significant amount of vacant land exists in the Central Business District, and the City feels that it is in its interest to see that land put to intensive use as soon as practical. The Jackson Square - Jackson Plaza area is also considered important because of its local historical importance, its currently strong businesses, and its attractive scale. Other viable commercial sites are also identified on the Land Use Plan Map, but if the City were to offer regulatory, financial, or other incentives to leverage private commercial development, it would be more favorably disposed to extend them in the Central Business District or Jackson Square - Jackson Plaza than elsewhere.

The City hopes to see an expanded retail sales complex of up to 450,000 square feet of floor area on the Central Business District site bounded by Illinois, Washington, Tulane, and Rutgers Avenues. This facility should be competitive with the major fashion malls of Knoxville (e.g. East Towne, Foothills) in terms of merchandise quality, variety, price, and display. It should complement but not directly compete with marketing efforts of existing Downtown Shopping Center merchants. This new center should be designed to encourage shopper interaction between itself and an upgraded Downtown Shopping Center by including well-designed pedestrian linkages.

Developable land west of Tulane Avenue should be oriented toward one of the following: offices, a hotel, restaurants and, possibly, upper-story residential condominiums or apartments. This development should be of high density and should be visually and physically linked to nearby shopping malls, the civic center, the library, and A.K. Bissell Park. Highly desirable in this vicinity would be a headquarters building for Martin-Marietta Energy Systems. Such a building would give the major DOE contractor a strong visual presence in the community and add to the psychological importance of this area as the Oak Ridge city center.

Landscaping, street-furniture, and signage should unite, identify, and beautify the Central Business District in an effort to say that this is the heart of progressive community that takes pride in its appearance.

Industrial, Office, and Research Areas

Industrial activity can best flourish and not adversely affect other activities if it is restricted to relatively isolated locations and clustered in functionally similar groups.

POLICY L-10: The City will promote three distinctive types of industrial areas: (1) technology, research and corporate headquarters, (2) traditional industries, and (3) special materials industries.

POLICY L-11: The City will locate new industrial and office areas and enforce site design standards to ensure that residential neighborhoods are protected from the adverse effects of those activities.

RESIDENTIAL DEVELOPMENT

Designating a variety of types of residential land in each major sector of the City will promote housing development and population growth. Care must be taken to ensure that differing intensities of development are adequately designed to provide an acceptable transition from one to the other.

POLICY L-12: The City will allow a variety of housing types and densities in each sector of Oak Ridge, as long as existing single-family areas are adequately protected.

Peripheral Housing Growth

If the City hopes to increase its population along with industrial and business growth and to capture a larger share of DOE plant employees, it must encourage the private housing industry to make use of available and buildable land. Sites which are economic to develop and which may be served by utilities and roads are becoming more scarce due principally to topographic, DOE, and floodplain restrictions. Policies and plans will help make certain peripheral tracts more attractive to developers and make good use of land that might otherwise be ignored or underutilized.

Maintenance and Evolution of Older Neighborhoods

The largest collection of deteriorated housing units is located in the north-central portion of Oak Ridge; some of these houses are close to the point where they should be removed. There is not sufficient public money available to properly address this problem, so private interests must be marshalled if the conditions there are to be stabilized or improved over time. One way to do this is to raise land values so that increased structural investment may be justified, and higher density zoning is one of the best tools the City

has for this task. That process must be sensitively planned and executed so as to protect the rights and investments of all affected property owners, however. Simultaneously, streets, utilities, schools, parks, shopping, and other public and private amenities must be maintained at desirable levels.

POLICY L-13: The City will promote redevelopment of deteriorated housing, where applicable, within the north-central area of the City through small scale increased density developments that are compatible with remaining housing.

The preceding policy will be conducted in coordination with the following additional means of stabilizing or improving neighborhood conditions:

- Maintenance of streets and utilities,
- Housing rehabilitation assistance for owner occupants,
- Enforcement of the Certificate of Re-Occupancy Ordinance,
- Enforcement of the Land Use Plan and Zoning Ordinance to disallow proposed developments which are not judged to be compatible with existing housing,
- Rehabilitation of viable commercial areas,
- New commercial structures in permitted locations, and
- Redevelopment to housing of non-viable commercial sites.

The reader may refer to the Housing Plan for further discussion of these and other neighborhood improvement activities.

The following factors will be considered by the City Planning Commission and City Council at public hearings when considering private redevelopment proposals which would increase the intensity of residential land use:

1. Location: Louisiana Avenue to Pennsylvania Avenue is the preferred location for increase housing density beyond that indicated by the Land Use Plan.
2. Access: Collector streets preferred.
3. Adjacent Development: Proximity to other residential development of comparable density, bulk, and height or proximity to commercial development.
4. Site Conditions: The site must be sufficiently large to allow a design which sets a new tone for the vicinity by virtue of the number of dwelling units, open space, landscaping, and off-street parking. Site topography must easily lend itself to acceptance of the buildings

proposed. Buildings to be replaced must be of sufficiently deteriorated condition that the new development would be considered a substantial long-term improvement.

5. **Building Design:** Structures should respond to the surrounding buildings in terms of materials, facade treatment, height, bulk, rhythm of window and door openings, roof lines, and roof materials.
6. **Site Design:** Open spaces should correspond to the pattern of such established elsewhere in the vicinity; landscaping and fencing should be used sensitively to provide a transition to less intensively developed sites; parking areas must be softened by landscaping, berming, fencing, and location of the site; garages and carports are encouraged; parking area scale should be small or broken by landscaping, open spaces, or buildings; setbacks of building must relate to building height and bulk.
7. **Density:** In general, the resulting density should not be greater than 200 percent of that normally allowable on the site but this may be exceeded if the City Council judges that natural or man-made circumstances mitigate the negative effects and a demonstrable benefit will be enjoyed by the community.

URBAN DESIGN AND ENVIRONMENTAL PROTECTION

Closely aligned to and building upon the issues and concerns addressed above are questions of the design of commercial, industrial, residential, and civic areas. How should this place called Oak Ridge look and how should its parts interrelate? What are the special qualities of Oak Ridge that should be preserved, and what needs to be changed? How much emphasis should continue to be placed on the original neighborhoods concept of Oak Ridge, and how should the evolution of the aging residential areas be handled? What is the community's collective vision of "downtown" Oak Ridge -- if it is to have one? What regulatory mechanisms and process should the City employ to achieve its urban design aims?

POLICY L-14: The City will attempt to create a dominant city center which is visually and psychologically strong through the use of retail, office, hotel, and restaurant development, high-density housing, major public facilities, public gathering spaces, pedestrian and bicyclist paths, and landscaping.

A traditional urban design concept has been to use schools, parks, and small shopping areas to serve, unify, and identify residential neighborhoods. But a variety of factors, such as increased mobility in Oak Ridge and declining population density, have caused this original pattern to be modified and reduced. At this point, the City should acknowledge these market and other forces and attempt to promote neighborhood livability through a slightly different urban design approach.

POLICY L-15: The City will seek to maintain a strong retail base at the larger, viable neighborhood commercial centers, but allow smaller, less viable neighborhood centers to be replaced by housing or other development if the private market sees fit.

POLICY L-16: The City will strive to identify, maintain, or introduce a children's play area (public park and/or school yard) within a reasonable distance of all housing. Specialized recreation facilities, such as tennis courts, may be more widely scattered.

In addition, there are a number of ways in which the City can use its regulatory mechanisms to influence the appearance of the community, if it so desires.

POLICY L-17: The City will utilize public and private landscaping, sign control, and site plan reviews to achieve a pleasing and distinctive visual image throughout the city.

POLICY L-18: In all retail centers, the City will promote design which emphasizes pedestrian amenities, human scale, abundant landscaping, and distinctive architecture.

Much of the remaining vacant land in Oak Ridge is hilly and difficult to develop. However, some of this property is close to existing residential neighborhoods which are fully serviced with roads and utility systems. Allowing more extensive hillside development, while regulating it so as to preserve the natural environment, would bring much of this land into more productive use.

POLICY L-19: The City will encourage well-planned development of hillside areas, while preserving wooded slopes and ridgetops of significant visual appeal to the extent possible and protecting against undue erosion, excessive utility costs, and hazardous roadway alignments.

POLICY L-20: The City will continue to protect and preserve the functional and aesthetic features of its floodplains, drainageways, and river shorelines.

The City of Oak Ridge will continue to protect and preserve the major natural environmental features of the community which protect health and safety and enhance appearances, such as floodplains, steep slopes, and wooded ridgelines. The Land Use Plan proposes that the remaining open sections of the East Fork Poplar Creek floodplain be preserved as open space. Tools to accomplish this include the Floodway Zoning District, public land acquisition and/or the dedication to the City of private easements for surface water ponding and flow. The Floodway District of the Oak Ridge Zoning Ordinance will continue to be used to limit development in this drainageway, as well as in the officially designated floodways of Emory Valley Creek, Ernie's Creek, Poplar Creek, and the Clinch River.

The City will continue to protect the aesthetic and functional aspects of steep hillsides while allowing a reasonable use of the land. This may be accomplished by working with developers to devise site plans and plats which make relatively intensive use of the less steep sections of a site so as to preserve the steeper sections in their natural state. To do this, the City will use the Planned-Unit Development provisions of the Zoning Ordinance and the Subdivision Regulations whenever working on a site that would benefit from a liberal interpretation of the standard land development practices. Collaborative site planning may be essential to the economic and aesthetic development of locations such as the southwest quadrant, East Fork Valley, and infill sites such as that along the Roane-Anderson County Line. This process may allow the transfer of density from one portion of a site to another, the clustering or dwelling units, and/or the introduction of building types not normally allowed.

IMPLEMENTATION ACTIVITIES AND BUDGETING

The Land Use Plan is designed as a general guide for private and public land development which indicates intent without being too specific. Carrying out this plan involves as number of one-time and on-going activities which complement one another. These activities include regulatory amendments and application; research, coordination, and planning; and capital improvements programming.

Regulatory Amendments and Application

Once the City has adopted the Land Use Plan policies and map, it will begin the process of bringing its Zoning Ordinance into line so that the intent of the Land Use Plan can be clearly transferred. The Zoning Ordinance is the legal mechanism for enforcing City policy as expressed in this document's words and graphics, and, as such, it should be in harmony with the Plan. Revising the Zoning Ordinance and Map will involve a commitment of staff time and careful thought, followed by a series of public hearings and ultimate adoption by the City Council. Although many people may resist change even if unhappy with the present zoning arrangement, perseverance and leadership should prevail if the community really is behind this Plan.

There are fewer residential, commercial, and industrial categories used in the Oak Ridge Land Use Plan than there are currently Districts in the Oak Ridge Zoning Ordinance. The City may handle this matter in one of two ways: (1) retain all of the current zoning districts and apply them during rezonings within the appropriate land use area consistent with the guidelines set forth below or (2) redesign the Zoning Ordinance so that its districts are in conformance with these land use categories.

The former alternative preserves perfectly the land use rights of all property owners as they presently exist but causes some difficulty during rezonings because some zoning districts do not conform to the land use categories. Because of this lack of direct conformance and the nature of the present zoning districts, this alternative may hinder true implementation of the intentions of the Land Use Plan. Also, the present zoning districts are

rather narrowly defined and do not give the property owner much latitude in land development.

The latter alternative may change slightly the land use rights of property owners (making them variously broader, narrower, or just different) but makes the Zoning Ordinance easier to administer and more tightly linked to the Land Use Plan. Therefore, the City chooses to amend its Zoning Ordinance to conform with the Land Use Plan.

The following outline describes necessary amendments to the Oak Ridge Zoning Ordinance.

- All Residential Districts: Allow duplexes as a Special Use with City Council approval to promote neighborhood and redevelopment.
- R-3 District: Remove non-residential land uses.
- B-1 District: Limit the floor area of restaurants.
- B-2 and UB-2 Districts: Delete and substitute two new Districts consistent with Community Business category of the Land Use Plan. Both Districts would allow more intensive land development than the B-1 District, and one (applied in City Center area) would allow a high intensity of land coverage in order to promote investment and policy achievement. Open air businesses would be allowed by Special Permit outside of the City Center.
- Delete the B-3 District (Roadside Business).
- Delete the IND-1 and IND-2 Districts. Substitute Business Park and General Industrial Districts consistent with Land Use Plan categories.
- Amend the Floodway District to include Ernie's Creek and Emory Valley Creek.
- Delete the O-2 District.
- Create a Planning Overlay District which may be used as an overlay zone for any other District.
- Delete the Parking and Education Districts.
- Signs: Any amendments to sign regulations (Sections 6-609 to 6-617) should keep signage subdued and in character with the small-town, heavily-wooded nature of the City. Signage should be used to identify but not necessarily attract.
- Administrative Changes: The City staff would review all site plans in Commercial, Industrial, and Multiple-Family Residential Zoning Districts; the Planning Commission would grant any variances from site planning regulations, approve any special uses (activities currently reviewed by the Board of Zoning Appeals), continue to review and

approve subdivisions, continue to make recommendations to the City Council on rezonings.

Research, Coordination, and Planning

The City staff will track population growth, building permit activity, land development, and land availability so that it has an up-to-date picture of what is occurring in Oak Ridge and can respond in a helpful manner to any developer's request for information or advice. This knowledge will also allow the City to market itself more aggressively in the Knoxville region.

The staff will annually assess the land needs for urban growth by land use type in order to be able to judge the need for municipal assistance to develop new tracts (through acquisition from the DOE and/or infrastructure financing aid). Regular consultation with local realtors, developers, and business people will keep City staff knowledgeable of perceived impediments to proper urban growth so that the City may devise means to respond to them. Also, the City staff will apprise themselves of changes in contemporary development standards and practices, financial tools, planning law, redevelopment techniques, industrial trends, demographic changes, etc., so that it may knowledgeably amend the City's plans and regulations.

A wide variety of groups will be consulted and involved in land planning and development so that resources may be used efficiently. These include landowners, the City staff, Planning Commission, City Council, Industrial Development Board, Environmental Quality Advisory Board, Health and Educational Facilities Board, Roane-Anderson Development Council, Chamber of Commerce, Melton Hill Regional Industrial Development Commission, Martin-Marietta Energy Systems, Inc., Tennessee Department of Transportation, Tennessee Valley Authority, and many others, including citizens of Oak Ridge.

Special planning studies and promotional efforts will be undertaken by the City staff to carry out land use and development policies. These may include analyses of the desirability and financial feasibility of the purchase and resale of land from the DOE to selected developers coupled (potentially) with a package of municipal assistance to leverage private investment. Another example would be municipal involvement in promoting intensive and top-quality private investment in the Turnpike-Rutgers-Illinois vicinity as described previously.

Capital Improvement Program

A means of selecting projects for inclusion in the City's multiple-year Capital Improvements Program is presented in the General Management and Implementation Chapter of the Comprehensive Plan. Potential land development projects which may be identified at this time for future funding fall into the following categories:

- City Center development assistance,
- DOE land transfer and development assistance,

- Vacated-school site redevelopment,
- Creation of permanent public linear open space along East Fork Poplar Creek, and
- Selective infrastructure assistance to promote and leverage private investment in strategic opportunity Areas (e.g., East Fork Valley, the southwest quadrant, industrial parks).

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TRANSPORTATION



Transportation System Analysis

The Transportation Analysis of Conditions provides an overview of the street system currently serving the citizens of Oak Ridge, and is presented in the following sections:

- Roadway Operating Characteristics,
- Jurisdictional Classification,
- Functional Classification, and
- Parking.

This analysis was produced from data supplied by the City of Oak Ridge and the Tennessee Department of Transportation.

ROADWAY OPERATING CHARACTERISTICS

Traffic Volumes

A traffic volume study of Oak Ridge was recently completed by the Tennessee Department of Transportation. The 1984 average daily traffic volumes are shown by Figure 11, Traffic System, 1984.

Motor Vehicle Accidents

The most recent City-wide motor vehicle accident information is contained in a Hazardous Location Traffic Study which was prepared in 1979. This report documents the accident statistics at 20 intersections in Oak Ridge for the period 1977 through 1978. This accident information is summarized in Table 33.

According to the Oak Ridge Police Department, traffic accidents in Oak Ridge are primarily a result of engineering deficiencies along the Oak Ridge Turnpike and Illinois Avenue. During periods of peak traffic volumes, the capacity of these roadways is exceeded. A lack of protected and adequately signalized turning lanes contributes to these problems. Congestion on these major roadways influences drivers to select alternative routes through residential neighborhoods on streets not intended to handle through traffic.

Roadway Capacity

The capacity of a roadway is defined as the maximum number of vehicles which a section of roadway can accommodate. This maximum number is influenced by such factors as roadway design, the number of lanes, the number of slow moving vehicles (trucks and buses) in the traffic stream, and the number and type of intersection traffic controls.

The quality of traffic flow is then a function of the relationship between the existing traffic volume and the theoretical capacity of the roadway. If the volume on a roadway is significantly less than the capacity the quality of traffic flow should be very good with little or no congestion. However, as the volume approaches the capacity, the quality of traffic flow decreases and the amount of congestion increases.

TABLE 33

Motor Vehicle Accident Data, 1977-1987

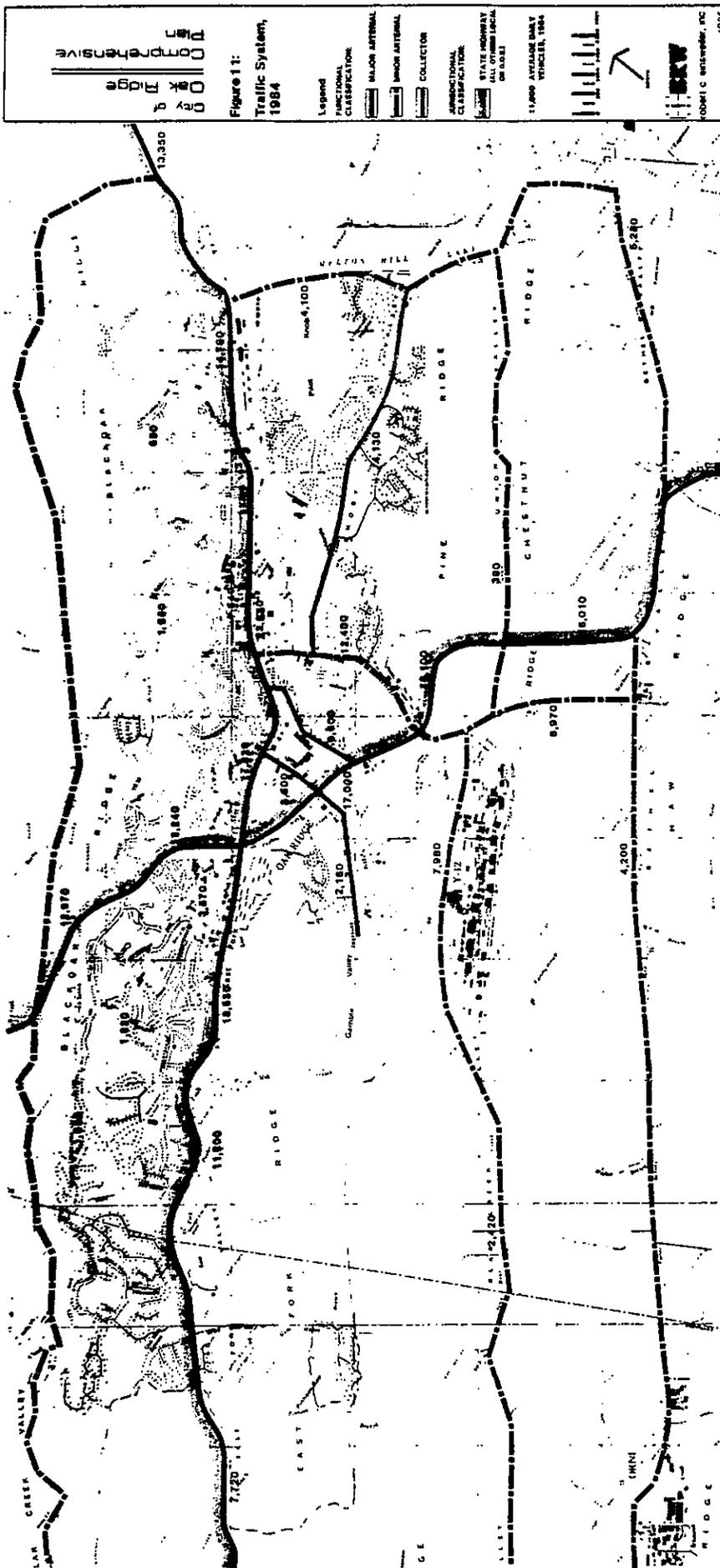
<u>Location</u>	<u>Number of Accidents</u>			<u>Fatal Accidents</u>	<u>Accident Rate(1)</u>
	<u>1977</u>	<u>1978</u>	<u>Total</u>		
ORTP & Illinois	26	53	79	0	3.2
ORTP & Robertsville	9	11	20	0	1.0
ORTP & Tulane	26	25	51	0	2.5
ORTP & West Main	7	10	17	0	0.9
ORTP & East Main	9	12	21	0	1.2
ORTP & Rutgers	26	29	55	0	3.5
ORTP & Lafayette	13	13	26	0	1.4
ORTP & E. Division	19	8	27	0	1.8
ORTP & Georgia	6	10	16	0	1.1
ORTP & Florida	10	11	21	0	1.4
Illinois & West Outer	10	18	28	1	2.0
Illinois & Robertsville	7	17	24	0	1.7
S. Illinois & Tulane	24	20	44	1	2.9
S. Illinois & Rutgers	8	11	19	0	1.3
S. Illinois & Lafayette	8	7	15	0	0.8
S. Illinois & Bethel Valley	14	21	35	0	2.6
Hillside & Highland	4	8	12	0	2.1
Pennsylvania & Providence, etc.	9	15	24	0	3.8
Emory Valley & Laboratory	8	16	24	0	2.1
Bethel Valley & Melton	6	9	15	1	2.6

(1) Accidents per million vehicles entering the intersection.

Typical capacities of various types of roadways are as follows:

- Four-lane divided arterials - 30,000 vehicles per day
- Four-lane city streets - 20,000 vehicles per day
- Two-lane city streets - 10,000 vehicles per day

Based on a comparison of these values and the observed traffic volumes the following roadway segments were identified as potential areas of congestion. The major traffic study planned for completion during 1985 will further evaluate these and other roadway links.



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- Oak Ridge Turnpike from Louisiana Avenue to Administration Road.
- S. Illinois from Lafayette Avenue to the Solway Bridge.
- N. Illinois from the Oak Ridge Turnpike to West Outer Drive.
- W. Tennessee Avenue from Georgia Avenue to New York Avenue.
- Pennsylvania Avenue from Providence Road to New York Avenue.
- New York Avenue from the Oak Ridge Turnpike to Tennessee Avenue.
- Emory Valley Road from Lafayette to Briarcliff Road.

In addition to these segments some congestion during peak traffic periods has been observed at several other intersections along both the Oak Ridge Turnpike and Illinois Avenue.

It should also be noted that the capacity of residential streets is not very often an issue. This is due to the fact that long before the volume of traffic reaches the actual capacity of the street it will have usually reached a level considered intolerable by the residents, who will then demand that measures be taken to discourage through traffic. Based on a review of the traffic volume information collected by the Tennessee Department of Transportation, it appears that many residential streets are carrying higher traffic volumes than what is normally considered acceptable.

JURISDICTIONAL CLASSIFICATION

All roadways in Oak Ridge are under the jurisdiction of either the State of Tennessee or the City of Oak Ridge. There are no county roads within the corporate limits of the City.

The Oak Ridge Turnpike (State Route 58/95), Illinois Avenue (State Route 62) and Edgemoor Road (State Route 170) are administered by the Tennessee Department of Transportation. All other roadways are the responsibility of the City of Oak Ridge or the Department of Energy. It should be noted that even though the Oak Ridge Turnpike, Illinois Avenue, and Edgemoor Road are state routes and officially under the jurisdiction of the Tennessee Department of Transportation, the City does maintain these roads under a State contract and operate the in-place traffic signal systems.

Discussion with the Tennessee Department of Transportation revealed that there are two Federal-Aid Highway Programs which are available for funding highway projects in Oak Ridge. These programs are the Federal-Aid Primary and the Federal-Aid Urban Systems. Both of these programs are administered by the Tennessee Department of Transportation.

Figure 11 shows the roadways in Oak Ridge which are on each of these systems and which are therefore eligible to receive federal aid. Projects on the primary system are typically initiated at the state level while Federal-Aid

Urban System projects are initiated by local governments. The cost split for a Federal-Aid Urban Systems project is currently 75 percent Federal and 25 percent local. It should be noted that in addition to highway projects, Urban System funds can be used for the purchase of transit vehicles and the improvement of public transportation facilities.

FUNCTIONAL CLASSIFICATION

Beyond street designations required for the Federal-Aid Urban System Program and a listing of "Arterial Streets" in the Zoning Ordinance to apply to access controls, the City of Oak Ridge does not have a formal functional classification plan for the City's street system that has been adopted by City Council. The development of a functional classification plan should be considered.

A functional classification plan is simply the grouping of roads and streets into an integrated system, with each road ranked by its importance to the road user and the land use structure. Functional classification is based on the concept that most roads and streets have a predominant use, either to provide access to abutting property or to allow the movement of traffic through an area. Historically, roadways which provide exclusively for one of these uses operate more efficiently than roadways which try to provide for both land access and the through-traffic movement.

The basic goals of a functional classification are to concentrate through traffic on a limited system of arterial roadways and to discourage through traffic from using local streets. Economic implications of a functional classification plan are that the limited financial resources of a community should be similarly concentrated on the limited system of arterials. This will help improve the quality of traffic flow to a point where most through trips will be attracted to the designated arterial roadways. An additional result is the insulation of residential neighborhoods from the impacts associated with heavy traffic volumes.

Development of an integrated roadway system based on a functional classification provides an opportunity to accomplish the following:

- Apportioning fiscal resources,
- Evaluating present and future roadway needs,
- Designating appropriate minimum design standards,
- Aiding in the selection and design of traffic control devices, and
- Assisting planners in developing land use plans.

Functional classification plans for cities similar to Oak Ridge typically include the following roadway types:

- Major arterial streets,

- Minor arterial streets,
- Collector streets, and
- Local streets.

The basic characteristics associated with each of these roadway types is listed below.

Principal Arterial:

- Serves main travel corridors but may provide some access to abutting land. However, the land access function is secondary and is sacrificed as necessary to improve the through movement function.
- Connects principal areas of traffic generation.
- Provides the highest possible quality of traffic flow for traffic volumes up to approximately 30,000 vehicles per day (for roadways with four lanes for through traffic.)

Minor Arterial:

- Predominant function is the movement of through traffic but land access and accommodation of local traffic becomes more important than on Primary Arterials.
- Serves less concentrated areas of traffic generation.
- Typically handles traffic volumes between 12,000 and 20,000 vehicles per day.

Collectors:

- Predominant function is to collect traffic from the local streets and distribute the traffic to the system of arterials.
- Direct access to abutting land is acceptable, however, it should be controlled by land use restrictions.
- On-street parking is acceptable as long as street widths are sufficient to provide an acceptable quality of traffic flow for moderate traffic volumes, typically in the range of 4,000 to 10,000 vehicles per day.

Local Streets:

- The primary function is to provide access to homes, shops, and other minor traffic generators.
- Through traffic should be restricted by both roadway design features and the placement of traffic control devices.

- On-street parking is acceptable, however the streets should be wide enough to allow easy passage by emergency vehicles.
- Traffic volumes should be less than 1,000 vehicles per day.

PARKING

On street parking in Oak Ridge is primarily regulated along the major arterial roadways and in the Central Business District.

A problem regarding on-street parking exists in several residential areas. In many of the older neighborhoods, particularly in hillside areas, little or no off-street parking is available, therefore the number of vehicles parked in the street is quite large. When this factor is combined with narrow streets a potentially dangerous situation exists which has been present in older areas since their original layout.

Transportation System Plan

ROADWAY SYSTEM ISSUES

Issues and problems associated with the roadways system in Oak Ridge were identified and explored by the project planning team at several stages of the process. Consulting planners and engineers met with local citizens at numerous interest-group meetings and during larger public sessions; City staff members, including Administration, Public Works, Police, and Fire personnel, described the problems from their viewpoints; State Transportation Department representatives were interviewed at length; traffic and accident data were reviewed; and the entire roadway system was visually inspected and photographed at various hours of the day. The following are the principal roadway issues identified.

1. Peak-hour traffic flow on Oak Ridge Turnpike and, to a lesser extent, Illinois Avenue, is becoming increasingly inconvenient and hazardous. The function of the Turnpike as the only east-west urban thoroughfare in Oak Ridge has been compromised by rising traffic volumes, the increasing number of driveways from individual parcels, and by the number of unsignalized intersections.
2. Traffic movement on intracity roadways other than Oak Ridge Turnpike and Illinois Avenue is difficult and sometimes hazardous.
3. Traffic safety and flow on the local- and collector-level street system is limited by curves, hills, narrow pavement, and poorly-designed intersections.
4. Access to the western end of the urban area from the central part of Oak Ridge is limited.
5. Residential off-street parking in the older sections of Oak Ridge is inadequate.
6. Traffic movement between Pellissippi Parkway and South Illinois Avenue may need to be upgraded to accommodate the increase in vehicles anticipated from Valley Industrial Park South and other nearby growth.

MUNICIPAL THOROUGHFARE PLAN

A municipal thoroughfare plan is essential to the design of new urban streets and also assists in the occasional re-design of existing roadways. It classifies the city's streets according to their intended traffic-carrying function and establishes traffic service and design characteristics for each of the functional classifications of streets.

POLICY T-1: The City will revise, adopt, and implement a municipal thoroughfare plan which classifies roadways according to their function so that they are designed according to their intended use.

POLICY T-2: The City will investigate means of providing additional access to the western end of the urban area.

POLICY T-3: The City will continue to pursue means of improving access to the federal highway system.

Functional Classifications System of Roads

Classifying streets according to their function -- either the movement of traffic, land access, or both -- permits the coordination of planning, design and roadway operation to satisfy land use in accordance with public need. The recommended functional characteristics of the Oak Ridge roadways are summarized in Table 34, and the recommended functional classification plan is shown in Figure 12.

In reviewing Table 34, Functional Street Classification Characteristics, it should be remembered that this is a somewhat idealized model; it must be adjusted as needed for local circumstances. The topographic constraints existing in Oak Ridge would be reason to deviate from these characteristics, just as they would also allow a liberal interpretation of the roadway design standards discussed below.

Figure 12 illustrates the functional classification of major streets in both existing and future development areas. New collector roadways are shown serving the southwest quadrant and eventually linking it to Oak Ridge Turnpike.

Roadway Design Standards

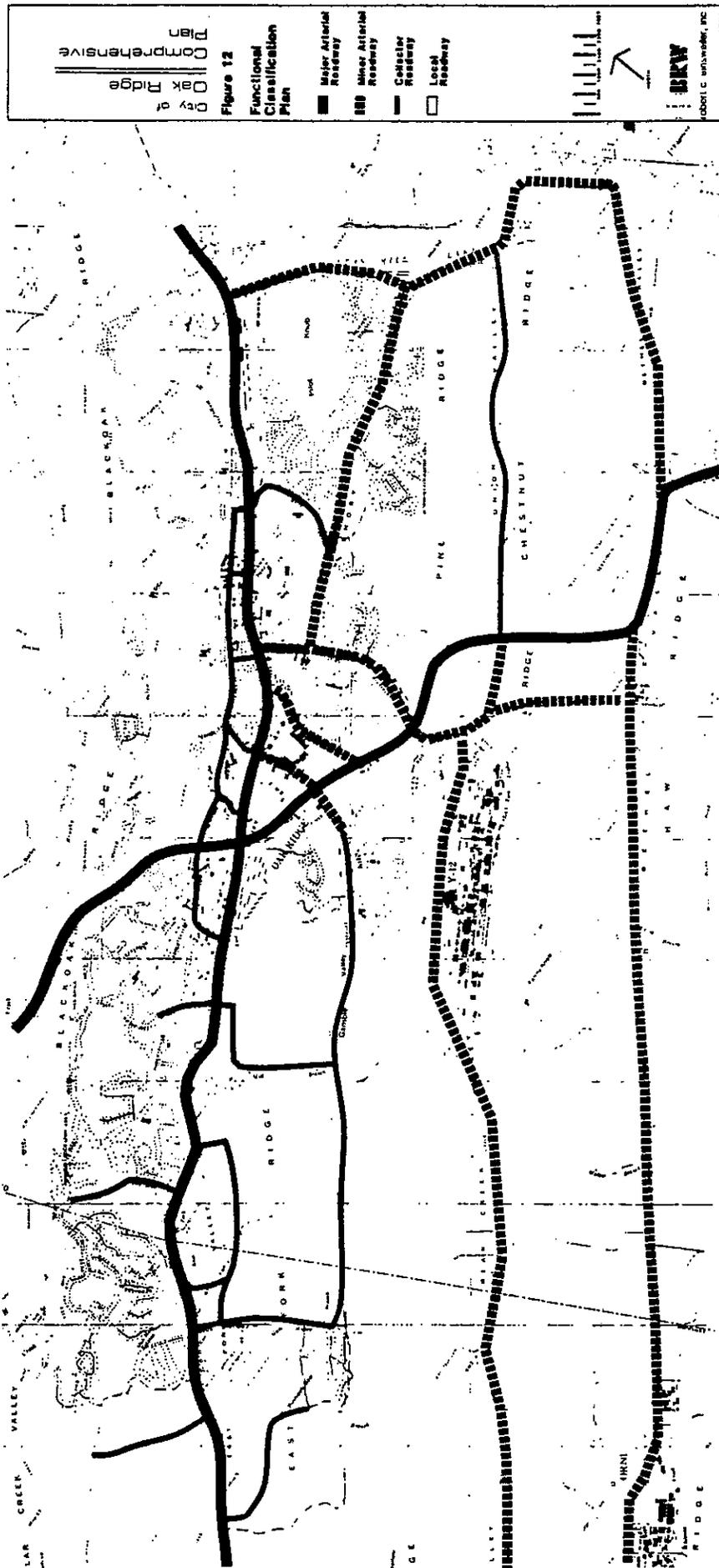
A city should have published standards of design for its arterial street system, since they are an important aid in providing geometric and operational consistency. In the whole scheme of transportation, the thoroughfare plan establishes the skeletal framework of the street system; the functional classification system identifies the primary purpose of each of the elements of the system; and the design standards outline the basic physical requirements of each of the street classifications necessary to provide satisfactory traffic operations.

The recommended design standards for Major Arterial, Minor Arterial, Collector, and Local streets in Oak Ridge are shown in Figures 13a and 13b. It should be noted that it is very unlikely that these roadway design standards will be able to be applied in older, developed areas (such as along Tennessee Avenue) due to restrictions in right-of-way width. Only in isolated locations of special concern (such as major intersections) will the City consider property acquisition in order to introduce roadway improvements. Such acquisition is usually best accomplished during a major redevelopment effort which involves replatting.

TABLE 34
Functional Street Classification Characteristics

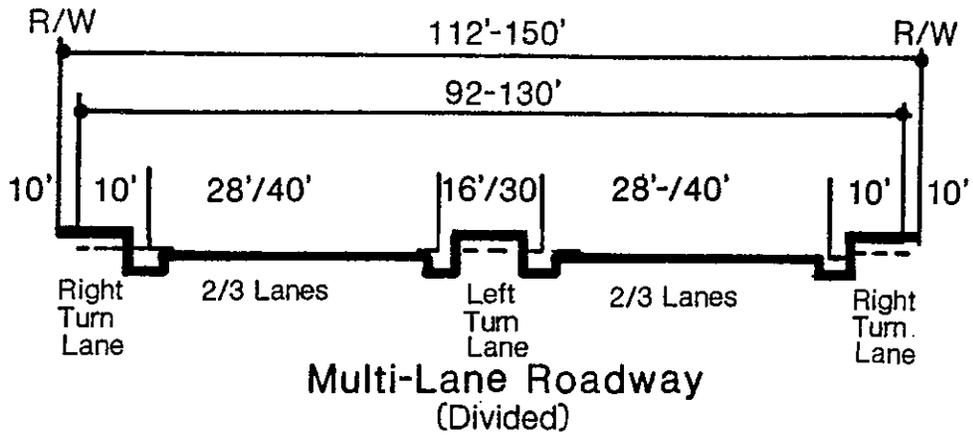
<u>Characteristics</u>	<u>Sample Principal Arterials</u>	<u>Sample Minor Arterials</u>	<u>Sample Collectors</u>	<u>Sample Locals</u>
Specific Roadways:	-Illinois Av. -Oak Ridge Turnpike	-Bethel Valley Road -Scarboro Road -Emory Valley Road -Lafayette Road -Rutgers Avenue -Tulane Avenue -Melton Lake Dr.	-Tennessee Av. -Pennsylvania Av. -Montana Av.	-Newhaven Road -LaSalle Road -Raliegh Road -Wilberforce Av. -Manhattan Av. -Taylor Road -Baltimore Dr.
Service Performed:	Traffic Movement, Minimal Direct Lane Access	Traffic Movements, Minimal Direct Lane Access	Both Traffic Movement and Limited Access	Direct Lane Access
"Typical" Trip:	Within the State, Regional, Intercity, and Within City	Within the City	Inter-Neighborhood	Within Neighborhoods
Spacing:	Varies	One Mile	One-Half Mile	Every Block
Continuity:	Totally Inter-Connected over the Entire Region	Inter-Connected with Principal Arterials and Continuous within the City	Inter-Connected with Minor Arterials and Continuous Access/around Neighborhoods	No Continuity Required
Access type and Spacing:	Signalized Intersections at One-Half Mile. Minimal Private Access.	Signalized Intersections at One-Quarter Mile. Minimal Private Access.	Signalized or Stop Sign Controlled Intersections at One-Eighth Mile. Limited Private Access.	Stop Sign at Collector Intersections. Private Access.
% System Mileage:	5 - 10%	10 - 20%	5 - 10%	60 - 80%
% Vehicle Miles of Traffic Carried:	35 - 45%	20 - 35%	10 - 15%	5 - 10%
Capacity/Level of Service:	12,000 - 24,000 ADT	10,000 - 12,000 ADT	2,500 - 5,000 ADT	Less than 1,000 ADT

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PRINCIPAL ARTERIAL ROADWAYS



MINOR ARTERIAL ROADWAYS

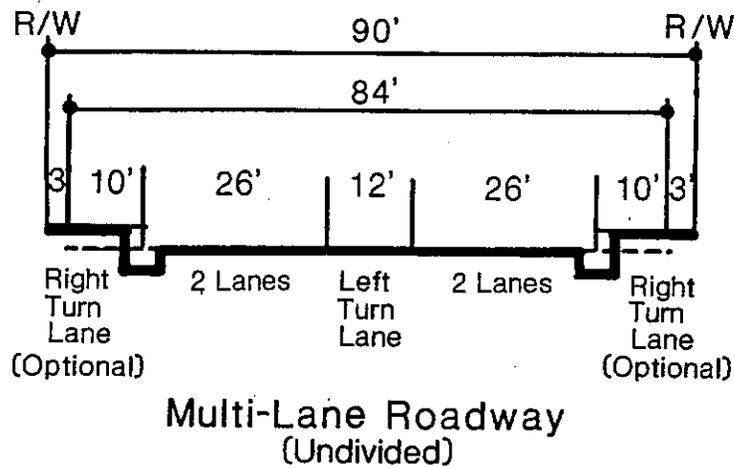
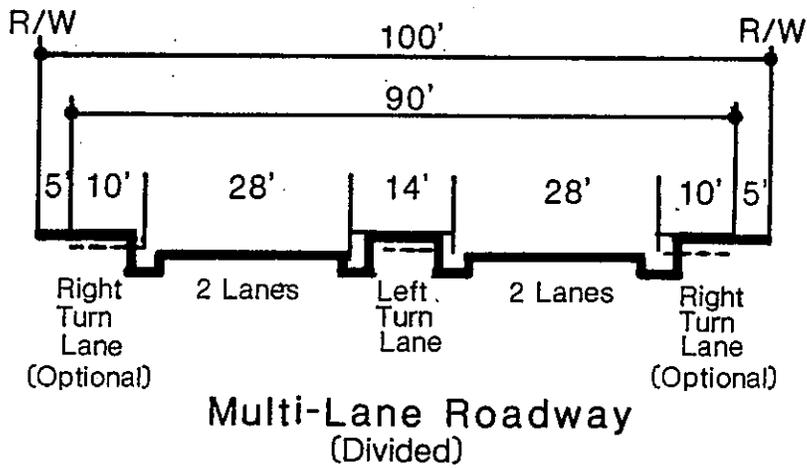
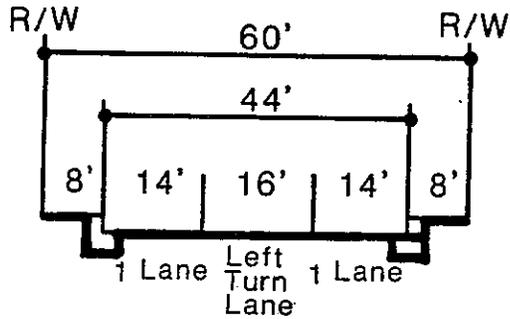
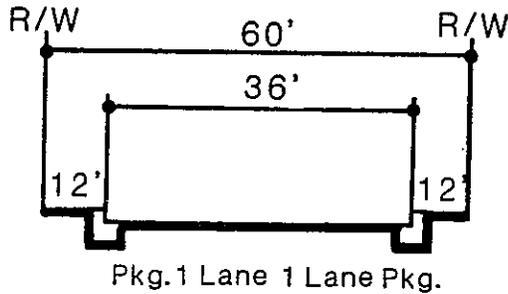


Figure 13a:
**Design Guidelines
 For Roadways**

COLLECTOR ROADWAYS

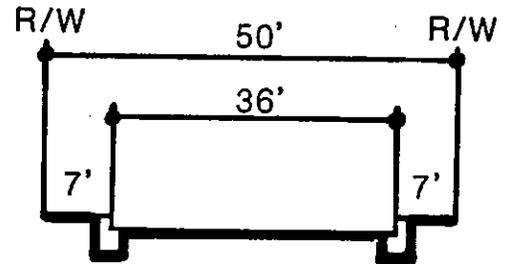


Two-Lane Roadway
(Undivided)

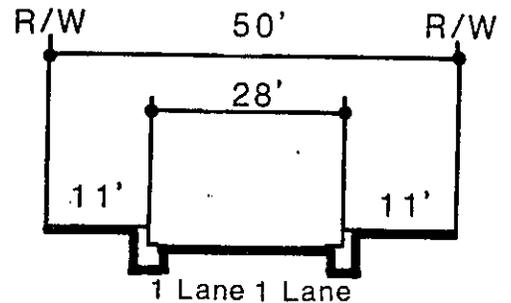


Two-Lane Roadway
(Undivided With Parking)

LOCAL ROADWAYS



Two-Lane Roadway
(Undivided with Parking
on Two Sides)



Two-Lane Roadway
(Undivided) with Parking
on One Side)

FACILITY IMPROVEMENTS AND TRAFFIC MANAGEMENT TECHNIQUES

- POLICY T-4: The City of Oak Ridge thoroughfare plan will address physical facility improvements and traffic management techniques in order to alleviate current and forecast street capacity and safety problems. While pursuing completion of State-financed improvements on Illinois Avenue, highest priority will be given to traffic safety and flow improvements on Oak Ridge Turnpike. The City will consider every financing alternative available to fund necessary Turnpike improvements, including continuation of the municipal sales tax.
- POLICY T-5: The City will improve and protect the through traffic function of Oak Ridge Turnpike and South Illinois Avenue by means of zoning of adjacent lands, access controls, and roadway design.
- POLICY T-6: The City will work to improve intracity movement on roadways other than Oak Ridge Turnpike and Illinois Avenue.
- POLICY T-7: The City will identify, design, and rank in order of priority the intersection improvements needed on the arterial and collector street systems.

Alternatives for improving traffic safety and efficiency can be categorized as either design- or operations-oriented. This is a convenient classification scheme which recognizes the two basic types of traffic management techniques.

It should be recognized, however, that safety and efficiency cannot be added on, these features must be designed into the system. Operational techniques dealing with signs, signals, and pavement markings can enhance traffic safety and efficiency, but they can never compensate fully for bad design.

The roadway design and operation improvements which may be necessary in the coming years to carry out Policies T-4 to T-7 (above) are described in generic form in the following subsections. Specific recommendations and roadway designs will be issued as part of a more detailed traffic study to be conducted by the City in 1985. The process, contents, and use of that study are discussed under the Monitoring, Planning, and Finance section of this Transportation Plan.

Design Improvements

Intersections are typically the most critical element of a city street system with regard to both safety and capacity. This is due to the fact that the intersection area must be shared with a conflicting stream of traffic on the cross street. There are a number of design improvements that can be made to improve the overall capability of the street and intersection to handle traffic. The major design-type improvements are described below.

1. Correcting Offsets - Some Oak Ridge streets exist today with intersections which are offset along the arterial roadway. This is due to haphazard land development and the lack of adequate planning and coordination between adjacent subdivisions. Offset intersections result in an increase in the number of potential conflict points in an intersection and can produce driver confusion, resulting in hazardous intersection operation. The presence of offset intersections compound traffic safety problems at intersections which are already difficult, such as Pennsylvania and Tulane.

Offset intersections can be costly to correct due to the additional right-of-way which may have to be acquired. However, this cost may sometimes be outweighed by savings in accident costs, travel time and also reduced costs for "extra" traffic control devices. Every effort will be made in the future in Oak Ridge to achieve good alignment of streets through intersection and to incorporate auxiliary turning lanes wherever possible.

2. Addition of Turning Lanes - The addition of left- and right-turning lanes at arterial intersections can provide significant improvements in both safety and efficiency. The obvious advantage associated with auxiliary turning lanes is the segregation of traffic flows. When turning lanes are provided, through traffic is not delayed by the vehicles waiting to turn. The addition of turning lanes will be one of the design solutions utilized along Oak Ridge Turnpike.

Left-turn lanes may be provided as part of a major median construction project along a segment of an arterial roadway or they may be introduced as channelization of an isolated intersection. Either way, the benefits associated with left-turn lanes are substantial. Left-turn lanes can increase the capacity of a typical intersection by as much as 25 percent. Safety improvements as a result of adding left-turn lanes are also significant. Studies indicate that substantial decreases in both rear end and left turn accidents can be expected. Another advantage of properly designed left turn lanes is improved sight distance. Where left turns are made from an exclusive turn lane, the driver waiting to turn has a better view of opposing traffic.

From a capacity and safety standpoint, left-turn lanes deserve greater emphasis. However, the addition of right turn lanes can also yield considerable benefits. The right-turn lane frees the adjacent lane for strictly through traffic. Also, the capacity reduction effects of vehicles lowing to turn and the delay effects due to pedestrians are eliminated for through traffic. Right-turn lanes can increase the efficiency of intersection operation by maximizing the opportunities for right-turn on red and by moving the right-turning vehicles on non-conflicting signal phases.

3. Intersection Widening - Widening an intersection can increase the mid-block capacity of an arterial street. At restricted intersections, widening may be accomplished by rearranging lanes or eliminating

parking in order to add left- and right-turn lanes. At intersections along major arterials, where it would be undesirable to relax design standards, widening the actual roadway should be considered as the primary design alternative.

4. Mid-block Improvements - Operational problem at mid-block locations generally relate to the lack of or the improper control of access. Too many driveways or poor driveway design in conjunction with large turning volumes can reduce the quality of traffic flow along an arterial street. This is a major problem along some sections of Oak Ridge Turnpike and Illinois Avenue.

The most critical problem with mid-block access is the left-turn maneuver into a driveway when the left-turn is made from a through lane. One obvious correction is the introduction of a median barrier which prohibits the mid-block left-turn and restricts all left turns to intersections where exclusive turn lanes are provided. Where this solution is not practical, consideration should be given to providing a painted median or two-way left-turn lane. In either case, the operational concept is the same: provide a space where left-turning vehicles can pull out of the through lanes and wait for an opportunity to turn.

Operational Improvements

Unlike design improvements, operational improvements are intended to increase the efficiency of an arterial street without the need for additional right of way or substantial roadway reconstruction. Operational improvements can usually be implemented within the existing curb lines of a roadway using a combination of low cost signs, pavement markings and signalization improvements. The most common types of operational improvements are described below.

Changes In Traffic Flow Patterns:

1. Reversible Flow - Reversible flow involves changing the direction of traffic in one or more lanes during certain times of the day in order to accommodate heavy directional traffic movements. Reversible flow can increase the capacity of an arterial street by as much as 50 percent and is an appropriate countermeasure when there is a sizeable imbalance in the directional distribution of traffic flows. This technique is being successfully used for industrial traffic on Scarborough Road and Bethel Valley. Proper traffic control devices, possibly including overhead signs and/or lane use control signals, must be installed and maintained in order to ensure that wrong-way operation is prevented in the reversible lane.
2. Two-Way Left-Turn Lanes - Two-way left-turn lanes are an attractive alternative to either physically banning or legally prohibiting mid-block left-turns. Two-way left-turn lanes can increase the capacity of an urban arterial by as much as 20 percent while reducing mid-block rear end collisions and left-turn accidents at intersections. Space can often be created for the two-way left-turn lane without costly

reconstruction of the roadway by prohibiting parking and/or rearranging the through lanes. Proper traffic control devices, including pavement markings, signs (both ground-mounted and, possibly, overhead) and, in some cases, lane use signals are required to ensure satisfactory operation. The use of two-way left-turn lanes on the Oak Ridge Turnpike, currently being designed, might alleviate much of that roadway's traffic flow deficiencies.

Changes In Intersection Operation:

1. Left-Turn Prohibition - At locations where auxiliary turn lanes are not provided, the prohibition of left turns is a highly effective method of reducing traffic congestion. Studies indicate that this countermeasure can increase the capacity of an intersection by as much as 40 percent while eliminating the possibility of left-turn accidents.

Turn prohibitions are often specified for only certain times of the day (usually the morning and afternoon rush hours). However, from the standpoint of driver consistency, a 24-hour turn prohibition is preferred.

2. Intersection Widening - Intersections can frequently be widened to provide auxiliary turn lanes without substantial reconstruction. Space for the turn lanes can be created by prohibiting parking or by narrowing existing through lanes. At the low speeds which are typical of urban arterials, the through lanes can be channeled around the turn lanes with either reverse curves or straight line tapers as short as 10:1 without impacting traffic operations.
3. Protected Left Turns - At signalized intersections, a third alternative for dealing with heavy left-turn volumes involves the use of exclusive signal phasing. At intersections with separate turn lanes, the use of turn arrows can greatly assist in the orderly movement of left-turning vehicles. At intersections without separate turn lanes, a leading or lagging signal operation can be provided. A leading signal operation consists of the approach with the heaviest left turn volume receiving the green indication first, so that a significant number of left turns can be without opposing traffic. A lagging operation is where the high volume approach receives additional green time after the green for opposing traffic has been terminated.

Protected signal phasing has proven to be a very effective device for reducing left-turn accidents. However, unlike the previously mentioned countermeasures, exclusive signal phasing usually does not increase the capacity of an intersection.

4. Signal Modernization - One of the reasons for continued accident problems at intersections in urban areas is competition for drivers attention. The problem becomes most acute in commercial areas where store windows and advertising signs are designed to capture the attention of passers-by. In response to this problem, an effort should be made to modernize existing signal equipment so that the signal indica-

tions are more competitive visually. Such an effort should result in fewer accidents.

Signal modernization projects should consider the following items:

- a. Mast arm-mounted signal heads with 12-inch lenses for all arterial streets and cross streets with more than one lane of approach,
 - b. The provision of at least two signal faces for through traffic,
 - c. The use of pedestrian indications at selected intersection where the conditions meet the warrants outlined in the Manual on Uniform Traffic Control Devices (MUTCD), and
 - d. The installation of high-intensity luminaries.
5. Signal Coordination - Signal coordination consists of operating a series of signals located along one continuous route so that a vehicle starting at a particular point and traveling at a predetermined speed can proceed through each intersection with a green indication and without stopping. This technique is already being used on Oak Ridge Turnpike.

There are two primary benefits associated with operating signals in this manner. First, effective coordination can reduce the number of stops at the signals in a system and reduce the potential for rear end collisions. Secondly, by reducing the number of stops, signal coordination can reduce vehicular delays and stabilize travel times along the arterial street.

It should be noted that the installation of traffic signals was omitted from the list of traffic management techniques. This is due to the fact that traffic signals are only rarely a safety device and almost always reduce the capacity of an arterial street. Traffic signals are simple, expensive devices used to assign the right-of-way at intersections when less restrictive means of traffic control have proven to be either inefficient or unsafe. Traffic signals should be installed only after a thorough traffic engineering investigation and only at locations with the following features:

- a. Traffic volumes in excess of those documented in the Manual on Traffic Control Devices (MUTCD), and
- b. A reasonable intersection delay for the minor street approaches to an intersection.

The MUTCD also lists four additional conditions which may indicate the need for a traffic signal. These items deal with accident experience, pedestrians, coordinated signals and functional classification. The MUTCD should continue to be consulted for further guidance whenever a traffic signal is being considered.

The installation of an all-way stop condition was also omitted from the list of traffic management techniques and for reasons similar to those for traffic signals. All-way stops are often thought to produce many desired traffic impacts such as the diversion of through trips, reduced vehicle speeds, reduced intersection delay and a reduction in accidents. However, experience and research indicates that an all-way stop usually does not produce any of these desired results. The basic guideline for the installation of an all-way stop condition is the same as for a traffic signal (see above), and it should only be used when less restrictive traffic control devices have proven to be inefficient or unsafe.

ALTERNATIVE TRANSPORTATION MODES

Sidewalks

There are basic transportation concerns that are not directly related to the design and function of the roadway system in Oak Ridge. For example, Oak Ridge has an extensive sidewalk system which should be preserved, but outside sources of maintenance funding are shrinking. Costs may have to be directed toward those who directly benefit.

POLICY T-8: The City will continue to replace severely deteriorated sidewalks according to need. Such costs will be shared with benefitting landowners where appropriate, except that Community Development Block Grant funds may be used to assist in designated neighborhoods.

The Oak Ridge Public Works Department will regularly monitor sidewalk conditions using a formalized, consistent method. Sidewalks needing improvement will be ranked in priority based upon the level of pedestrian traffic and condition. Reconstruction of sidewalks will be scheduled through the City's capital improvements program, which is described in the General Management and Implementation Chapter of this Comprehensive Plan. The capital improvements program judges proposed projects based on their support of Comprehensive Plan policies and on their cost-effectiveness. Cost-effectiveness may include revenue availability and coordination with other projects, among other criteria.

Transit Service

Community-wide transit service of any design would probably require massive subsidies in Oak Ridge. A demand-responsive para-transit system directed toward those who need it the most may be the most feasible alternative for the foreseeable future.

POLICY T-9: The City will continue the municipal program of subsidizing taxi fares for the elderly.

The City Planning Department will regularly monitor the cost-effectiveness and level of service provided by the subsidized taxi fare program for the

elderly. Means will continually be sought to direct limited municipal resources to where they will provide a satisfactory level of service for the greatest number of truly needy persons. Consideration will also be given to extending eligibility for the taxi subsidy program to the needy handicapped of all ages.

The City will not investigate establishing in the foreseeable future a fixed-route transit service nor a demand-responsive system available to all. The experience of other cities clearly indicates that these approaches are highly expensive and do not come near paying their way from fare box revenues. The City will encourage Martin-Marietta Energy Systems, Inc., to continue and expand its van pooling and park-and-ride transit programs. These provide alternative means of commuting to the major DOE facilities in Oak Ridge.

Bicycle Facilities

The use of bicycles for travel and recreation in Oak Ridge is possible nearly year-round due to the city's generally mild climate. A long-term program of minor sidewalk improvements can serve as the backbone of a bicyclist (and pedestrian) system which will encourage bicycle use.

POLICY T-10: The City will make regular investments in a long-term program to build a city-wide bicycle system which links major commercial areas, parks, schools and residential areas.

While recognizing that not all skill levels and interests can be addressed adequately within the immediate future, the Oak Ridge bicycle system should consist of the following elements (listed in order of priority):

1. Sidewalks with curb cuts (ramps) along both sides of Oak Ridge Turnpike from Robertsville Junior High School to Athens Road (Milt Dickens Park). In some locations, new sidewalk will have to be installed.
2. Curb cuts added to existing sidewalks along minor collector streets such as Louisiana, Michigan, and California Avenues.
3. Sidewalks with curb cuts along one side of these roads in the central business district: South Illinois, Tulane, Rutgers, Lafayette.
4. Sidewalks with curb cuts along one side of Tennessee-Providence-Robertsville.
5. A paved and marked shoulder or bituminous path along Emory Valley Road.
6. A bituminous path in a greenbelt along East Fork Poplar Creek.
7. A paved and marked shoulder along Tuskegee-Tulane.

MONITORING, PLANNING, AND FINANCE

POLICY T-11: The City will upgrade existing streets according to need and based upon a regular inspection program.

POLICY T-12: The City will maintain proper coordination between the Transportation Plan and other elements of the Oak Ridge Comprehensive Plan to aid in proper planning, coordinated capital improvements programming, and ease in plan implementation.

POLICY T-13: The City will continue to strive to maximize the use of outside funds for traffic system improvements.

Roadway System Monitoring

Improvements to the design and construction of the roadway system in Oak Ridge will be scheduled and financed through the City's six-year capital improvements program and annual budget. Improvement projects will be selected based upon a regular series of condition, safety, and traffic flow surveys, the 1985 traffic study recommendations, and land development activities. Survey data will include surface conditions, traffic volume, turning movements, accidents, speed profiles, and capacity analyses.

Traffic Planning and Coordination

Close coordination should exist between urban planning and traffic engineering functions in order to produce roadway designs which are safe and efficient. Whenever the Oak Ridge Land Use Plan is revised, the Transportation Plan will be reviewed for conformance. Private development plans will be reviewed by both planning and engineering staff people to ensure that the roadway access control is properly suited to the nature of the land activity.

Transportation planning in Oak Ridge will aim to produce a safe and efficient movement system at the lowest cost. Improvement to traffic safety will be sought in conjunction with reduced travel time. Efficiency also implies the implementation of transportation improvements that will produce the greatest results while coping with budgetary limitations. High-cost alternatives will be implemented only after less capital-intensive solutions have been exhausted. Cost savings will also be sought by coordinating street and utility projects through the City's capital improvement program.

Designing and Funding Facility Improvements

The City of Oak Ridge will conduct, with the assistance of an experienced traffic engineering consultant, a study of the future traffic system in the city. The purpose of this study will be to: (1) forecast additional traffic volumes on each major street, (2) identify and analyze traffic system deficiencies based upon current plus forecast traffic volumes, (3) recommend specific physical design improvements to alleviate anticipated or existing problems of flow or safety, (4) rank in priority the system improvements

needed, (5) secure long-term and on-going funding commitments from the State of Tennessee for improvements to roadways under their jurisdiction, and (6) serve as the basis for the traffic component of the City's six-year capital improvements program. This study will be based on the Oak Ridge Land Use Plan and Forecast of Oak Ridge Population and Households. It will be completed in 1985.

There are several sources currently available with which to fund final engineering and actual construction of the improvements needed to the Oak Ridge roadway system. These are:

Federal:

1. Federal Aid-Primary System Funds:

- Available for use by the State of Tennessee on Federal Aid-Primary Routes, which in Oak Ridge include Oak Ridge Turnpike, Illinois Avenue, and Edgemoor Road.

2. Federal Aid-Urban Funds:

- Available for use by the City of Oak Ridge on approved routes which have more than local significance. Requires a local complementing contribution.

3. Community Development Block Grant Funds:

- Available within specified target area.

State:

1. State Street Aid Funds:

- Available for streets which are not on the State highway system.

2. Streets and Public Transportation Funds:

- Available for approved local and collector streets.

Local:

1. Improvement bonds.

2. General taxes.

3. Private developers:

- May be required to finance streets, auxiliary lanes, signal systems, etc.

Oak Ridge will coordinate the use of these funds through its six-year capital improvements program and annual capital budget. Since the State of Tennessee

allocates its forecast funds several years in advance, Oak Ridge will use the previously-mentioned traffic study and roadway improvement designs to secure future, multiple-year commitments from the State for roadways on its jurisdictional system, namely, Oak Ridge Turnpike (S.R. 95) and Illinois Avenue (S.R. 62).

GENERAL AVIATION AIRPORT

A general aviation airport is greatly needed in Oak Ridge to stimulate the attraction of new or expanded businesses, particularly corporate headquarters. The establishment of a general aviation airport is one of the strategies of the Economic Development chapter of this Comprehensive Plan.

POLICY T-14: The City will work with other governmental jurisdictions to plan and develop a general use aviation airport to serve existing businesses and industries and to support recruitment of new businesses and industries with financing for the project to be shared by those jurisdictions that will benefit from the airport facility.

Pursuant to the findings of a recent City staff report, it is recommended that the City take the following actions to establish an airport serving Oak Ridge and the Technology Corridor as quickly as possible:

- Continue to seek and secure State and federal financial assistance for airport construction
- Implement the recommendations in the revised Airport Master Plan.
- Secure property for the airstrip site.
- Develop a local funding strategy composed of financial support from the government jurisdictions that will benefit from the airstrip.

RAIL AND BARGE TRANSPORTATION

The City enjoys good railroad access and is surrounded on three sides by a navigable waterway. Few local industries have heretofore required extensive rail or barge service, however. As the need for such transportation increases, the City will adopt policies and programs to secure the facilities and services needed.

MUNICIPAL FACILITIES AND UTILITIES

Municipal Facilities and Utilities Analysis

The Municipal Facilities and Utilities element of the Oak Ridge Comprehensive Plan provides an overview of the various public facilities, municipal utilities, and major public services in Oak Ridge. Parks, recreation, and public open space are addressed in the following chapter of this Plan. The Municipal Facilities and Utilities Analysis of Conditions is presented in twelve sections as follows:

- Water Distribution System,
- Sanitary Sewer System,
- Surface Water Drainage System,
- Street System,
- Electricity Distribution System,
- Library,
- Police Service,
- Fire Service,
- General Aviation Airport,
- Industrial Parks,
- Major City Buildings, and
- Schools.

The purpose of this section of the Municipal Facilities and Utilities chapter is to inventory and assess the present condition, capacity, and use of these public utilities and facilities. It is not intended to be a detailed analysis of their operations or programs. Rather, it is an overview of their strengths and weaknesses with special consideration given as to how they support neighborhood preservation, infill development, orderly fringe growth and quality of life. The six-year capital improvements program proposed by the Oak Ridge Regional Planning Commission is contained in Appendix A of this document.

(Note to 1988 Edition: The Six-Year Capital Improvements Program for FY 1990 - 1995 is in preparation as this document was reproduced, with the capital expenditures for FY 1990 to be incorporated in the City's operating budget upon approval by City Council. The Capital Improvements Program is available separately.)

WATER DISTRIBUTION SYSTEM

Domestic and fire protection water is supplied to the City of Oak Ridge under contract with the U.S. Department of Energy (DOE). Water is pumped from the Clinch River to a treatment and filtration system near the Y-12 weapons plant which has a capacity of 28-30 million gallons per day (mgd). The City of Oak Ridge uses about 6 mgd and the DOE plants use approximately 8-9 mgd, leaving 12-15 mgd of capacity. The quality of the water is rated as good.

Water distribution pipes were originally sized for a City of up to 75,000 population, therefore there are few problems with pressure or flow. Pressure near the center of the City is good, but there are some pressure-deficient areas near the western edge of the City due to a system bottleneck and elevational constraints. The trunk watermain system is illustrated by Figure 14, Trunk Sewer and Water Lines.

The water distribution system is divided into three separate pressure zones according to elevation as follows:

- Pressure Zone A: 1,050 feet or higher
- Pressure Zone B: 950-1,050 feet
- Pressure Zone C: Up to 950 feet

The locations of these zones are illustrated on Figure 14, Trunk Sewer and Water Lines. Each pressure zone is served by its own pressure tank(s), which are also shown on Figure 14. The extension of the water distribution system into relatively small geographic areas which would require crossing to a higher Pressure Zone boundary (e.g. Pilot Knob) is usually not economically feasible due to the limited number of new houses which could be served by the required additional pressure tank.

The physical condition of the water distribution system is good. The original steel pipes have all been replaced, and the present system is in good repair. A sufficient number of loops provides even pressure and good flushing. All fire hydrants are served by pipes of at least 6 inches diameter and are spaced approximately 450 feet apart in low-density residential areas. The City strives to provide 500 gallons per minute (gpm) at 20 pounds of pressure per square inch (PSI) for detached housing and 1,500 gpm for attached housing at 20 pound of pressure PSI.

Extending the water system to certain fringe development areas may be rather expensive due to the considerable cost of providing sufficient pressure and extending main lines. This is especially true of attempts to extend service west along the Oak Ridge Turnpike into property currently owned by the DOE. Each site will have to be evaluated on an individual basis. The City may be wise to establish growth management policies which indicate under what circumstances it will provide and finance expansion of utilities (and streets).

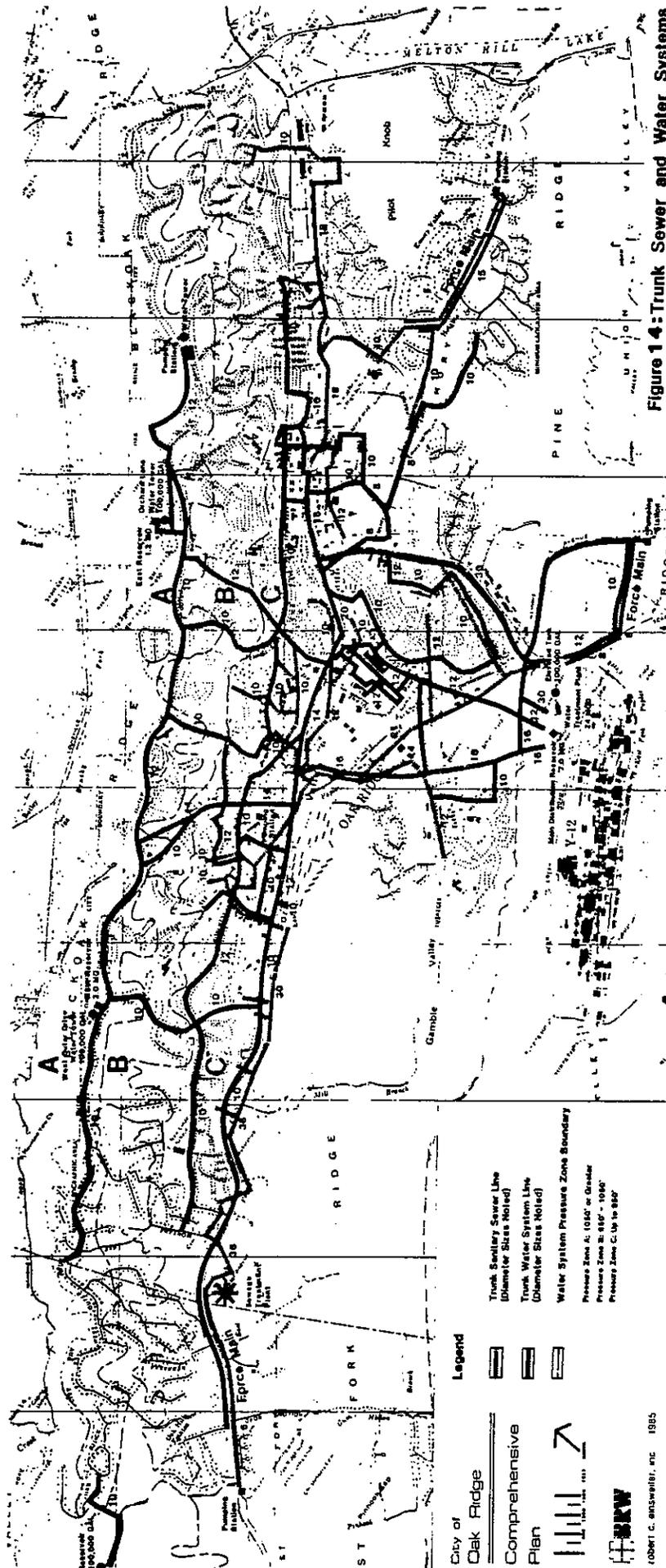


Figure 14: Trunk Sewer and Water Systems

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The Oak Ridge Regional Planning Commission feels that the focus of water system improvements should be system maintenance and rehabilitation, system expansion and new service, and water storage. Expenditures in the areas of system expansion and water storage for fire protection in new development areas should be increased, with any necessary additional financing being obtained through long-term debt. With respect to spending levels for system maintenance and rehabilitation, the Commission has expressed no consensus regarding system maintenance and rehabilitation expenditures.

SANITARY SEWER SYSTEM

The City of Oak Ridge sewage treatment plant is located just south of the Oak Ridge Turnpike at the Roane County border. This new facility (completed in 1983) has a 4.9 million gallons per day (mgd) nominal flow, an 8.0 mgd peak flow, and a 13.0 mgd short peak flow. An average of 4.1 mgd of sewage are currently treated. Thus, there is sufficient treatment plant capacity to provide for new developments in the near future.

The sanitary sewer trunk system is illustrated by Figure 14, Trunk Sewer and Water Lines. The major problem with the collection system is inflow of storm water and infiltration of ground water. This problem is experienced throughout the system and can triple the flow during a heavy storm. Therefore, it is considered serious.

Due to the topography of the sanitary sewer service area, there are many lift stations which pump sewage from isolated low areas to the gravity sewer system. These present the normal operational headaches and expenses, and because of their number, they are a serious system liability. However, the most significant weakness of the system is the undersize trunk line and pump near the treatment plant. This lift station of the system is now at capacity (250 gpm) and is twenty years old. A lift station of this age has reached its designed life expectancy and its level of reliability tends to become quite low. With the need for increased capacity, this lift station should be considered for replacement and upgrading.

Septic tanks are not a serious problem. There are only about 100 homes with on-site systems, most of which are situated near the west end of the urban area. Septic tank construction and maintenance is currently regulated by Roane or Anderson County.

SURFACE WATER DRAINAGE SYSTEM

Surface water drainage is accomplished in Oak Ridge primarily through a system of natural channels. Storm sewers are used only in the vicinity of the shopping area at Main Street. Drainage generally runs toward Oak Ridge Turnpike then either east or west in culverts and ditches to either the Clinch River or Poplar Creek. New York and Lafayette Avenues are the major drainage divide. Drainage in residential areas is usually collected in roadways and flows to catch basins and into pipes which carry the water to open channels along rear property lines. These channels discharge into larger

channels, one of three major creeks, then into the Clinch River.

There are currently no major flooding problems, although minor flooding has been experienced at the intersection of Illinois Avenue and Oak Ridge Turnpike. A floodway ordinance was adopted in 1968, and three new tributaries were added to the surface drainage system in 1984: Gamble Valley Creek, Ernie's Creek, and Emory Valley Creek. The floodway system is illustrated by Figure 7, Land Development Constraints. The City maintains its 12.4 miles of storm drainage ditches by cutting brush, clearing debris and deepening channels.

STREET SYSTEM

The City of Oak Ridge owns and maintains 180 miles of local- and collector-level streets. These roadways are constructed of asphalt with concrete curbing (but no gutter). Widths vary from 28 to 36 feet. Streets are considered to be in fair to good condition and are maintained by an annual program of patching and rebuilding. Most major repair work is done through private contracts.

Some newer streets are experiencing failures due to inadequate design relative to subsurface conditions. Design standards have recently been revised to accommodate these difficult and irregular circumstances.

A visual street surface condition inventory and rating was performed in 1984. This ranking will be updated regularly and used as the basis for selecting streets for resurfacing or reconstruction. Current emphasis on street maintenance is in the Community Development Block Grant (CDBG) target area, which is located between Louisiana and New York Avenues.

ELECTRICITY DISTRIBUTION SYSTEM

The City of Oak Ridge distributes electricity generated by the Tennessee Valley Authority. The system is in generally good condition although there have been some isolated problems of note. For example, one circuit serving a major industrial user failed ten times in eight months. The fact that the system is highly sectionalized prevented that problem from being more widely experienced.

The City has been installing underground wiring in new developments since 1965, and power has been installed throughout the Valley Industrial Park (along Union Valley Road) in advance of site developments to promote marketing. A recently-completed management study found the Electric Department to be generally well operated but recommended a number of minor improvements, most of which have now been accomplished.

LIBRARY

In 1970, the Oak Ridge Public Library was moved from Jackson Square to its present location in the Civic Center complex. These facilities, in combination with the City Hall, Bissell Park, the Performing Arts Pavilion, and American Museum of Science and Energy, constitute the civic and cultural center of Oak Ridge, a concept put forth in the 1948 plan for the City. The Public Library is the most frequently used facility in the City, according to a 1982 citizen survey. Survey respondents indicated that 81 percent of the households represented had used the library in the "past six months." This is a very high usage rate and reflects the City's exceptional intellectual composition.

The library is reported to have adequate space and staff for its present programs. The book budget is barely sufficient to maintain the collection. The building remains open 61-65 hours per week. There is a children's room, a microfilm room, as well as special collections which consist of large print books, jig-saw puzzles, college catalogs, phonograph records, and cassette tapes. There are no branch libraries nor bookmobile, as these are judged not cost effective. The creation of a historical section in the library to house written material and memorabilia from the City's early days is proposed for FY 1986.

POLICE SERVICE

The Oak Ridge Police Department has 42 officers. This level of personnel is a significant reduction from the years when security was provided by the U.S. Army, and is considered to be an acceptable minimum number for this community.

The major facility problem facing the Department is the need to improve security in its office, communications, and dispatch areas (located in City Hall). Currently, there is insufficient protection against would-be intruders.

Improvements are also needed in the temporary holding facility to meet State guidelines. Records storage, reporting, dispatching, and data analysis need increased computerization; outside assistance is probably necessary in this area. The Police Department has recently assumed responsibility for animal control and has incorporated the previous personnel from that City function.

Major crimes in Oak Ridge are burglary and car theft; the number of crimes against persons is low. The locations of police calls tend to correlate with housing cost and condition. Most traffic accidents occur at left-turn intersections, especially along Oak Ridge Turnpike and Illinois Avenue. The incidence of accidents in residential areas is not significant.

FIRE PROTECTION

The Oak Ridge Fire Department operates from three stations. Those on the east and west ends of the City were built in 1971 and are in good condition. (For locations, refer to Figure 15, Major Public Facilities.) The central facility, located on South Illinois Avenue, was built in 1950 and shows some deterioration. A recent station replacement and relocation study indicated that a site near Tulsa and Tuskegee Avenues would be a good location for a station to replace the one on Illinois Avenue.

A comprehensive analysis of the Department's fire fighting apparatus was conducted in 1983 to evaluate the present status of the fleet and to identify long-range concerns. The recommendations of that study were to refurbish trucks rather than buy new replacements. Since the study was completed, a mid-sized pumper has replaced the full-size pumper and a rescue vehicle has replaced the van formerly used for limited rescue work. These are short-term solutions to the on-going problem of vehicle deterioration. In addition, the Department's radio system is being upgraded.

The Fire Department employs three men on each of the three engine companies, there is also one ladder truck and one rescue vehicle operator per shift. This staffing is per station supplemented with 4 on-call fire specialists, each of which is equipped with a pick-up truck, fire extinguisher, and full protective clothing.

GENERAL AVIATION AIRPORT

The City of Oak Ridge presently has no airport facility within its borders. The closest facility is the McGhee-Tyson Airport located southwest of Knoxville. That airport handles commercial jet planes, but access from that site to Oak Ridge presently involves a 45-minute drive increasing to one hour or more during hours of peak traffic. If the Pellissippi Parkway were extended across Fort Loudon Lake, the commute would be shortened considerably, but that is no more than a hopeful proposal at this point. In any event, an airport to serve general aviation in Oak Ridge would promote industrial development.

The proposed phased construction of an Oak Ridge general aviation airport from FY 1985 to FY 1989 at a location to be determined represents a reasonable approach to obtaining the limited funding available for airport construction from the Federal Aviation Administration (FAA) and Tennessee Office of Aeronautics (TOA). Approximately \$3,500,000 is available state-wide annually through the FAA and TOA for airport construction. Although an Oak Ridge airport location has been given top priority by the State of Tennessee, it is unreasonable to assume that the State would commit all of its rather limited resources to this project in one year while neglecting the needs of the rest of the state. Accordingly, Oak Ridge's airport is proposed for construction through phases over five years to make the project more attractive for the maximum 95 percent funding level, 90 percent to be funded by the FAA and 5 percent by the TOA.

It is envisioned at this point that efforts in FY 1985 will be directed at initiating the Airport Master Plan Update. Completion of the update, preparation of an Environmental Impact Statement (if required), land acquisition, and design work are anticipated in 1986. Phase I, scheduled for FY 1987, includes site preparation. Phase II, in FY 1988, will create a functional 5,000-foot daytime and good weather-only airstrip. Phase III, in FY 1989, will upgrade the facility to include lighting and instrumentation necessary to operate the airstrip at night and during inclement weather conditions. Phase IV will complete the project in FY 1990 with improvements to the taxiways and landscaping.

The financial magnitude of this anticipated \$5.9 million project and the uncertainty of the extent of FAA/TOA participation (proposed at \$5.1 million) requires continual assessment of the project's viability. At present, local participation is minimal and limited to approximately \$300,000 with \$137,000 in Self-Sufficiency funds committed. The City Council has approved a plan to solicit participation from surrounding jurisdictions that would benefit from a general aviation airport to fund the local share of the project budget. Once built, the operation and maintenance of the airport is expected to be covered by user fees and related sales and services. In the event the commitment of FAA/TOA funds becomes significantly less than projected at this point, or other jurisdictions fail to participate, it would be appropriate for City Council to review, from a policy standpoint, the City's commitment to the project, relative to the maximum local funds to be expended.

INDUSTRIAL PARKS

The City of Oak Ridge, in cooperation with the Oak Ridge Industrial Development Board and the Oak Ridge Chamber of Commerce, has in the past and continues to sell platted property to businesses wishing to build and operate facilities in Oak Ridge. These properties have been acquired from the Atomic Energy Commission, the Department of Energy, and the General Services Administration. Properties for sale in 1985 are listed in Table 35. All sites except Valley Industrial Park South already have water, sewer, electric service, and roadway immediately available. All sites are zoned for industrial use except for Valley Industrial Park South, which is not yet subdivided. The four major industrial parks serviced by the City are Municipal Industrial Park (east of Lafayette and south of Emory Valley Roads), Turnpike Industrial Park (south of the Oak Ridge Turnpike between Laboratory and Fairbanks Roads), Valley Industrial Park (east of Scarboro Road and south of Pine Ridge), and Clinch River Industrial Park (south of Bear Creek Road and west of Watts Bar Lake).

Action on the option agreement negotiated with Martin-Marietta will markedly change the industrial park landscape of Oak Ridge. This option includes the 280 acre tract south of the existing Valley Industrial Park, Site G which encompasses approximately 64 acres south of Bethel Valley Road and east of Scarboro Road as well as several lots in Valley Industrial Park. These sites will be developed by Martin-Marietta as a high technology, light industry, industrial/research park. The City and Chamber will, however, continue to play a role in industrial development, as not all types of industry will be

accommodated in Martin-Marietta's industrial/research park. For this reason, additional property will be purchased by the City for complementary industrial/research park development.

The City's FY 1985-1990 capital improvements program gives the highest priority within the industrial/research park program to infrastructure development of the 280-acre tract south of Valley Industrial Park recently optioned to Martin Marietta. In addition, the purchase of approximately 179 acres of land on the south side of Bethel Valley Road east and west of Scarboro Road (sites "F" and "G") is to be completed in FY 1985. Expenditures associated with the provision of the infrastructure to the combined sites are included in FY 1985 and FY 1986.

This initial City-sponsored development within the Tennessee Technology Corridor will be concentrated on the relatively level areas of the newly-acquired property west of Scarboro Road. It is anticipated that approximately 115 acres of prime industrial/research park land (Site "F") will be acquired by the City and developed for less than \$11,500 per acre and made available for sale within 18 months. Given the attractive location within the Technology Corridor, the property should be marketable for high-quality use, with the proceeds used by the Industrial Development Fund for future projects. Approximately twenty 4-acre lots are anticipated for sale from the initial 115-acre development.

Assuming the City is successful in developing and selling the initial 115 acres, additional industrial land will be acquired. The overall industrial/research park development project anticipates future development in FY 1990 along Edgemoor Road with 80 additional acres available to interested firms.

Primary funding for the initial development will be generated through the enterprise funds for electric, water and sewer services. Self-sufficiency funds are proposed for the purchase of the additional property on Bethel Valley Road and initial site work on the relatively level portions of the Valley South site. Work on the Bethel Valley extension in FY 1986 will be funded by Industrial Development funds. Revenue for further expansion of industrial/research park property in later years is dependent on the success of initial marketing efforts.

The Oak Ridge City staff believes the acquisition of the federal property can be negotiated successfully with DOE in the proposed fiscal years. There has been no DOE commitment to date to this effect. That need is expressed in the first priority position of the City Manager's 1984 Goals and Measures of Performance.

One of the main sources of revenue for industrial development in Oak Ridge is the Industrial Development Fund, which is supplied by proceeds from the sale of lots in the City's industrial parks and interest earned on investments. Another revenue source is the Self-Sufficiency fund. This money is granted to Oak Ridge from the DOE specifically to promote industrial and commercial growth as a means of lessening the community's dependence on the DOE facilities.

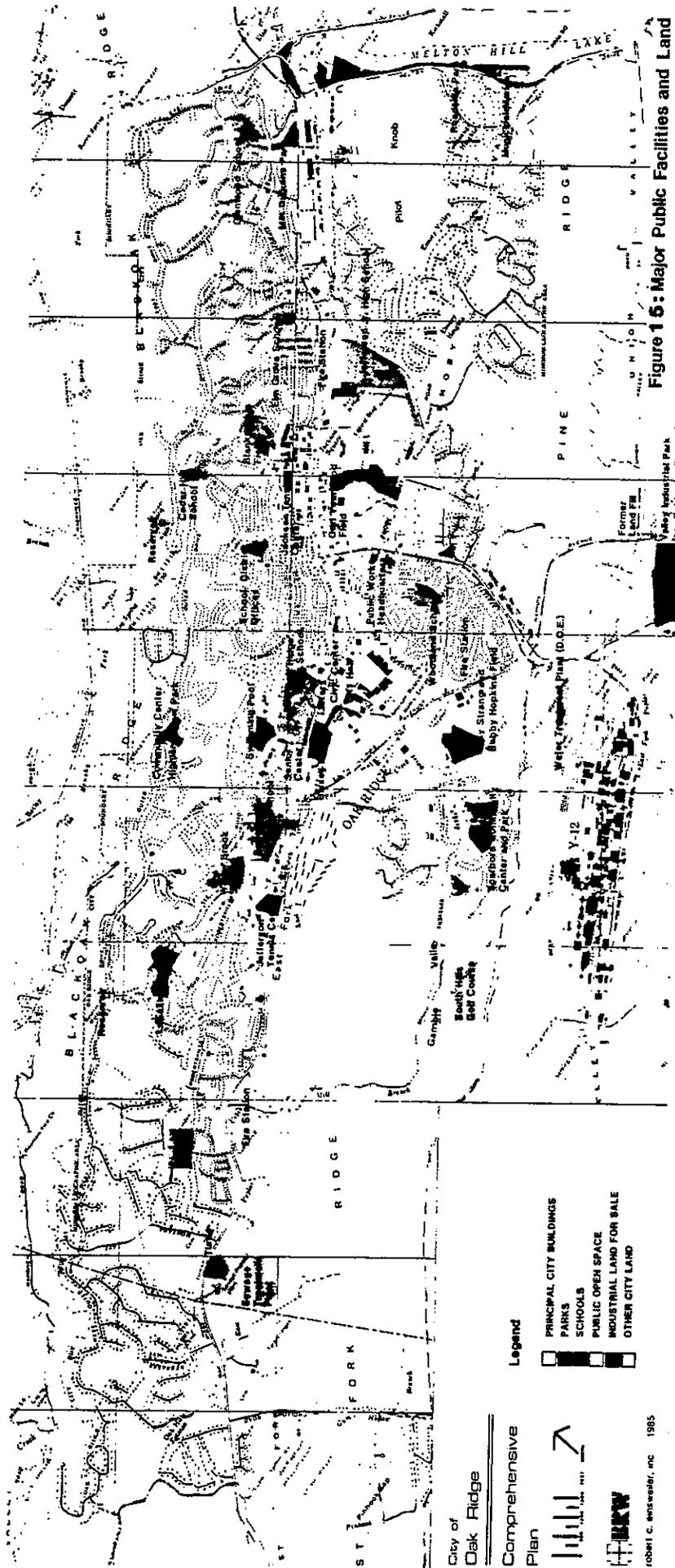


Figure 15: Major Public Facilities and Land

Former
Land FM
Valley Industrial Park
(approximately 1 mile south
to Bethel Valley Road)

City of
Oak Ridge
Comprehensive
Plan

Legend

- PRINCIPAL CITY BUILDINGS
- PARKS
- SCHOOLS
- PUBLIC OPEN SPACE
- INDUSTRIAL LAND FOR SALE
- OTHER CITY LAND

robert c. entwistle, inc 1985

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TABLE 35

Industrial Properties for Sale by the
City of Oak Ridge, 1985

<u>Parcel</u>	<u>Acres</u>	<u>Local Street Access</u>	<u>Water and Sewer Service</u>	<u>Electric Service</u>	<u>Zoning</u>
Turnpike Industrial Park:					
584.01	3.98	Yes	Yes	Yes	Ind-1
Municipal Industrial Park:					
518	1.36	Yes	Yes	Yes	Ind-1
Clinch River Industrial Park:					
4	14.80	Yes	Yes	Yes	Ind-2
5-A	16.11	Yes	Yes	Yes	Ind-2
5-B	19.66	Yes	Yes	Yes	Ind-2
6.00	11.41	Yes	Yes	Yes	Ind-2
6.01	11.41	Yes	Yes	Yes	Ind-2
8	17.92	Yes	Yes	Yes	Ind-2
Former Landfill	30	Yes	No	Yes	F.A.I.R.
Valley Industrial Park:					
25-CC-01	28.86	Yes	Yes	Yes	Ind-2
25-CC-4.01	1.58	Yes	Yes	Yes	Ind-2
Valley Industrial Park South:					
279		Yes	No	No	F.A.I.R.

MAJOR CITY BUILDINGS

Municipal Building

The Oak Ridge Municipal Building is located on Tulane Avenue near Oak Ridge Turnpike. (Refer to Figure 15, Major Public Facilities.) The principal offices contained in this structure include City Administration, Planning, Public Safety and Courts. There are also the City Council Chambers and other meeting rooms. The degree of overcrowding currently experienced in the Municipal Building should be alleviated with the relocation of certain activities to the Public Works Complex during 1985. Improvements scheduled in 1985 for the heating and air conditioning system should improve the facility's working environment.

Public Works Complex

The Oak Ridge Public Works Complex, located near Lafayette and Gettysburg Avenues, contains offices, garage space for vehicle repair and storage, carpenter and machine shops, and warehouse space. The building is fairly old but it serves its purpose adequately; there is no need for substantial renovation or replacement in the immediate future. Over the longer term, however, age and deterioration will undoubtedly cause the City to examine alternatives for major improvements here.

SCHOOLS

The Oak Ridge school system consists of one special education facility, five elementary schools (K-6), two junior high schools (7-9) and one high school (10-12). The locations of these schools are shown by Figure 15, Major Public Facilities. Enrollment in the Oak Ridge schools has been steadily declining as the average age of the City's population has increased. In 1972 there were 6,800 students; in 1984 there are 4,651 students; in 1993 there is forecast to be 4,011 students. Due to this change, two schools, Elm Grove and Cedar Hill Elementary, are scheduled to close in June, 1985. The media center, diagnostic center, and special education classes now housed at Elm Grove will be shifted to the former Pine Valley Elementary School, which now also contains the system's administrative offices. After these closings, several boundary adjustments will be made, the junior high schools will handle grades 6-9, and all schools will approach their capacity.

One of the concepts in the original design for the City of Oak Ridge was the integrated and self-sustaining neighborhood. Each would have its own elementary school, shopping area, and playground (usually associated with the school). That concept no longer functions in Oak Ridge, certainly not as far as schools are concerned. Due to the sizes of the various elementary service areas, only Glenwood Elementary School functions in the originally-intended walk-in manner.

In addition to the above-described services, the Oak Ridge Schools sponsor adult education classes at Oak Ridge High School. Roane State Community College classes are also available there.

Finally, much to the credit of the Oak Ridge school system and the residents of the community, Oak Ridge High School annually graduates 20 or more National Merit Scholars, many times the national average for a school of that size.

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Municipal Facilities and Utilities Plan

The City of Oak Ridge tends to provide a more sophisticated level of municipal facilities and services than other comparably-sized cities of the region. Despite continue efficiency improvements, costs are likewise higher, as would be expected. These facilities and services are partially a legacy of the AEC commitment to a high-quality urban environment and partially a result of the preferences of its residents.

Many Oak Ridgers became accustomed to outstanding municipal services in other cities and continued to expect them after moving to Oak Ridge. These services are one of the top marketing tools for the City, but some residents feel that their cost is one of the chief impediments to proper community growth and a burden to lower income households.

POLICY F-1: The City will continue to provide a high level of municipal services and facilities in a cost-effective manner.

The City of Oak Ridge will continue its past practices of annually reviewing the performance of all departments involved in service delivery. It will seek to identify inefficiencies in service delivery and institute changes in procedure, personnel, management, equipment, or finance to correct those inefficiencies. The City will establish service standards (where applicable) which are at or above those of comparable communities. It will continue to survey residents and business people to determine the level of satisfaction with various municipal services and facilities. Finally, it will utilize a coordinated planning and budgeting process to link services with policies and to minimize duplication, waste, and extraordinary costs.

Management Practices

Certain potential residential areas have extraordinary costs associated with their development (e.g., bridges, water towers, trunk lines across undevelopable land). Since developable residential land is becoming increasingly scarce in Oak Ridge, the City may judge it to be in the public interest to devote certain community-wide funds to particular projects or to spread costs across the entire system. A judicious application of discretionary funds or a revision of facility charge practices may yield long-term fiscal and other benefits. However, the City will carefully evaluate the efficacy and prospective return of such investment opportunities as they arise.

POLICY F-2: The City will promote and guide urban development through street and utilities financing practices.

Streets and Utilities Finance Practices

The City of Oak Ridge will participate in the design, construction, and financing of new street and utility projects when project costs may be either

fully recovered over time from benefiting landowners and/or charged to the State-financed streets funds or other sources. Such costs will be financed by the City and assessed only after a cost and feasibility study by the City staff, a public hearing by the City Council, a petition by a majority of the landowners affected, and a determination that the project will be consistent with the Comprehensive Plan.

The City staff will formulate a written set of street and utility financing practices which will address the public hearing and review process (petitions and feasibility studies), assessment practices (bonding term by type of development, assessment splits), costs to be paid by other sources, developers agreements and related matters in accordance with Tennessee Statutes. These guidelines will become adopted as a portion of the City of Oak Ridge Subdivision Regulations after public review and hearing.

WATER DISTRIBUTION SYSTEM PLAN

Water distribution system issues and concerns include elimination of pressure deficiencies west of Montana Avenue caused by a system bottleneck and elevational constraints, maintenance and modernization of system elements on a regular, ongoing basis, and cost-effective fringe growth of the system. Water supply is not a problem, and water quality is good.

POLICY F-3: The City will continue to maintain and operate an efficient and adequate water distribution system.

POLICY F-4: The City will equitably distribute costs for system-wide operations and improvements to all users.

POLICY F-5: The City will efficiently provide water service to new users.

System Maintenance and Operation

The City of Oak Ridge will repair or replace supply lines having defects or severely restricted capacities as they become known. It will also systematically eliminate areas or points of low pressure, and locate and evaluate the capital cost implications associated with the correction of "dead-end stub" lines and generalized areas of low pressure.

The City staff will continue to actively seek means of cost reduction and service efficiency, will monitor water quality, pressure, and system reliability, and will maintain a good working relationship with the DOE, which supplies the system's water.

System Cost Distribution

The City will regularly review its rate structure so as to match system costs with user charges in order that system upgrading and maintenance (a high proportion of system costs) can be programmed on a reasonable schedule and cost basis.

The cost of localized water main installations or changes, when necessary to serve new development, will be assigned to future residents of the project unless subsidized by the City in an effort to leverage major private investment.

System Expansion

The City of Oak Ridge water distribution system will be expanded in general conformance with the plan illustrated in Figure 16, Municipal Facilities and Utilities Plan, and according to more detailed system-wide engineering studies which will be periodically performed. The developers of new plats will be required to privately install municipal water lines or else petition the City for installation prior to plat approval. Developers will be required to install properly-sized water mains in their plats to ensure that the final municipal system will have adequate capacity for fire flows and overall pressure. The City will construct elevated storage towers in new areas only when such towers will serve a sufficiently large area so as to minimize system-wide cost increases. Exceptions will be made to this practice only if the City Council determines that the proposed system expansion is of exceptional importance to the City as a whole.

The City will continue to use and refine its capital improvements program process to make major expansions of or improvements to its water distribution system. The process will also be used to coordinate water system repair and street or sanitary sewer system repair projects in order to save money by concurrent installations of facilities.

SANITARY SEWER SYSTEM PLAN

Sanitary sewer system issues include inflow of storm water and infiltration of ground water throughout the system, the cost and operational problems associated with the use of numerous lift stations, and an undersized force main and lift station along the Oak Ridge Turnpike west of the treatment plant. Inflow and infiltration is a problem because it regularly, and sometimes sharply, raises treatment volumes (and costs).

POLICY F-6: The City will attempt to achieve reductions to inflow and infiltration to the sanitary sewer system.

POLICY F-7: The City will operate and expand the system in a cost-effective and equitable manner.

System Rehabilitation

Whenever a major street reconstruction project is undertaken, sanitary sewer lines will be repaired or replaced as necessary to reduce inflow and infiltration, treatment costs, and undesirable outflows. If specific locations can be pinpointed as major infiltration sources, these will be rebuilt through the capital improvements process and the cost spread evenly across the system.

System Expansion

The City of Oak Ridge sanitary sewer system will be extended in general conformance with the plan illustrated by Figure 16, Municipal and Facilities Utilities Plan, and according to more detailed system-wide engineering studies which may be periodically performed. All residential, commercial, industrial, and institutional structures will be required to connect to the municipal sanitary sewer system unless it is highly impractical. Those structures not connected to the municipal system shall be required to install on-site systems in accordance with Anderson or Roane County regulations. Developers of newly platted land shall be required to agree to privately install sanitary sewer according to City standards or else petition the City for its installation before receiving final plat approval. The use of lift stations (pumps) will be avoided whenever feasible.

As with the municipal water distribution system, the capital improvements program process will be utilized to plan for and coordinate sewer system and other utility or road improvements. The City will participate in system expansion projects according to guidelines for public projects to be formulated upon adoption of this Plan.

SURFACE WATER DRAINAGE SYSTEM PLAN

The surface water drainage system in Oak Ridge functions well, and no major improvements are needed. Concerns are related only to adequate system maintenance and cost-effective system expansion.

POLICY F-8: The City will maintain and expand the surface water drainage system in a cost-effective manner.

System Maintenance and Expansion

The surface water drainage system will continue to utilize the natural system of water courses whenever possible to lessen system costs. Creeks, ditches and swales may be used to handle the larger flows of water, while pipes will be used to handle drainage near residential and commercial developments. The City will protect the function of its major drainageways, East Fork Poplar Creek, Emory Valley Creek, Gamble Valley Creek, and Ernie's Creek, through plat and site plan review. East Fork Creek and its floodway will be investigated as a possible system of public open space and trailways, pending favorable outcome of the current investigations with problems with mercury contamination. Developers of new sites will be required to install properly-sized piping and drainageways. The systems will be checked by the City staff. The City will perform regular system maintenance using the General Fund; major system improvements will be planned with the Capital Improvements Program, and the City will participate in system expansion projects according to guidelines to be formulated for street and utility projects. Finally, the City acknowledges certain sink hole areas which require special attention to drainage in designing nearby facilities.

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ELECTRICITY DISTRIBUTION SYSTEM PLAN

POLICY F-9: The City will manage the electricity distribution system so as to provide reliable power at cost-competitive rates.

The Oak Ridge Public Works Department will continue to work toward full achievement of the management and operational modifications suggested in the Operational Analysis study conducted by Gilbert/Commonwealth (1984). Performance improvements will be pursued in the formal planning and scheduling of crew work, basic administrative and staff support, and the Department's relationship with builders and developers. Additional resources will be committed to the Department to achieve these aims as well as to make similar improvements in other operational sectors of the Department.

LIBRARY PLAN

POLICY F-10: The City will continue to gradually expand and improve the resources and services of the Oak Ridge Public Library.

The Library's exceptionally high usage rate clearly indicates the local public's support for ongoing improvements. Through annual budgetary appropriations supplemented by gifts and donations, the City will increase the Library's budget for books and other materials consistent with recommendations of the Director as approved by the City Manager to exceed the rate of inflation so as to sustain high usage and interest. The major program expansions during the next few years should include the introduction of a local historical section and establishment of public access cable television service. These expansions would address the desire expressed on the part of the general public for more information on their community's development and current local government affairs.

CITY BUILDINGS PLAN

The Police Department is in need of improved office security, and the Fire Department should consider replacing and, possibly, relocating its central station. What is the most practical way to improve the space availability in these and other City buildings? How can maintenance and modernization funds best be spent over the long term?

POLICY F-11: The City will modernize the Municipal Building in its present location through the Capital Improvements Program process, basing changes on a space needs study and coordinating with other efforts to enhance a "city center" effect in this vicinity.

POLICY F-12: The City will anticipate long-term modernization and relocation of the public works complex.

POLICY F-13: The City will anticipate replacement of the central fire station.

Figure 15, Municipal Facilities and Utilities Plan, illustrates the proposed relocations of the Public Works Complex and the Central Fire Station. Unless development adjacent to the current Public Works Complex proceeds in a manner that would require that some alternative use be made of that site, the facility would not likely be relocated until sometime after the year 2000. Assuming more immediate development of the vacant land adjacent to the Central Fire Station, that facility might be relocated by 1990.

SCHOOLS PROPERTY PLAN

The original 1942 and 1948 plans for the City of Oak Ridge envisioned a series of relatively self-contained neighborhoods, each with its own shopping, park, and school. A number of factors have emerged to reduce the viability of this concept. Increased use of the automobile has shifted shopping away from the neighborhood centers toward the central business district south of the Oak Ridge Turnpike. The neighborhood park system remains strong but the preservation of numerous, small neighborhood schools has been made unfeasible by certain trends. These trends include a steady reduction in school enrollment, the rising cost of maintaining and operating these old, small buildings, and general increased use of bus transportation. As the City has matured, its educational facilities changed in character from a system of neighborhood schools to one of community schools. A number of the smaller, "temporary" Oak Ridge schools have been closed and consolidated in the past, and the 1985 closure of Elm Grove and Cedar Hill Elementary Schools is another stage in the evolution of the Oak Ridge Schools facilities. Throughout these changes, the quality of education in Oak Ridge has remained very high, however.

The decision to close Elm Grove and Cedar Hill Elementary Schools was made by the Board of Education in 1983. The choice now is what to do with those sites and buildings. The sites are too small to be used for new elementary schools, according to the standards of the State Department of Education. Although it has been suggested that all or part of one or both of the complexes might be retained for adult education, community meeting rooms, and indoor athletics, there are practical matters of maintenance, supervision, operation costs, and duplication of facilities with which to be concerned. Retaining all or part of one or both sites for parks or playgrounds is a possibility. Another option would be to sell all or part of one or both sites for private housing construction under a contract which controls the design of the housing. New housing could be combined with park area, and neighborhood residents could have a say in the disposition and design of the new development.

A possible classification for each of these two sites is shown by the Oak Ridge Land Use Plan, Figures 9 and 10, but, as the following policy indicates, a final decision on the re-use of each site will be reached only after further study.

POLICY F-14: Following release by the Oak Ridge Schools, the City will re-use the Elm Grove and Cedar Hill School sites as neighborhood parks after extensive neighborhood participation in the design process.

The City of Oak Ridge also wishes to coordinate its land use and facility planning with that of the Board of Education for the provision of a possible future elementary school site. The population forecast contained in the Population and Housing Chapter of this Comprehensive Plan indicates that the City anticipates a gradual increase in total population as well as in school-age children. This represents a reversal of the trend of the last two decades and is expected as a result of new, more aggressive policies on the part of the City and the DOE Contractor, Martin-Marietta Energy Systems, and other employers.

The Oak Ridge Population Forecast does not indicate the need for an additional elementary school during the next 20 years. Assuming school districting policies can allocate increased enrollment to schools with excess capacity, enrollment growth is expected to be accommodated in current buildings. (This is not to say that building conditions may not call for a replacement structure during that time, however.) It is the City's position that if a new elementary school site is needed during the 1986-2005 period, it should be in one of two locations: either adjacent to Jefferson Junior High School or on part of the Blankenship Field site (where the Board of Education previously wished to locate a new school). Parcel 616, located south of Emory Valley Road, should no longer be held as a school site. A portion should be used by the City for a neighborhood park with the balance retained for future development. An attempt should be made to accommodate the recreational activities currently making use of the site.

POLICY F-15: The City of Oak Ridge and the Oak Ridge Schools will annually collaborate on the review and revision (if necessary) of short-range and long-range population forecasting as a means of planning for facilities and programs.

POLICY F-16: The City of Oak Ridge will continue to provide full support and cooperation to the Oak Ridge Schools in its efforts to deliver the highest quality of education possible.

INDUSTRIAL PARKS PLAN

A major opportunity for the community is Martin Marietta's development of Valley Industrial Park South. What will be the role of the City in that project? Elsewhere, how and when should the City try to acquire additional land from the DOE for sale to industrial developers? What should be the future of the old industrial properties along Warehouse Road? Finally, how long and in what amount will in-lieu-of-tax funds continue to be available from the DOE? On what projects should this money be spent?

The business-like application of municipal bonding capacity, in-lieu-of-tax funds and other outside monies along with public planning coordination can help make the Oak Ridge industrial parks competitive. These policies go hand-in-hand with those of the Economic Development chapter of this Plan.

POLICY F-17: The City will seek in-lieu-of-tax funds from DOE and apply this money according to criteria established in this Comprehensive Plan for public involvement in development projects.

POLICY F-18: The City will promote industrial development through the installation and cost recovery of industrial park infrastructure and through the assembly and sale of new land.

Figures 9 and 10, Land Use Plan, illustrates proposed locations of industrial and major office/research and development activity in Oak Ridge. Based upon the success of the promotional programs and strategies outlined in the Economic Development Plan, the Land Use Plan and other supportive elements of this Comprehensive Plan will be adjusted and refined. The Economic Development Plan should be consulted for major programmatic direction as to industrial park promotion and growth.

PARKS AND RECREATION

Parks and Recreation System Analysis

CURRENT FACILITIES

The City of Oak Ridge owns and maintains over 1,200 acres of recreation land, and over 6,800 acres of public greenbelts. School playgrounds and athletic fields also serve as general recreational facilities. An additional 2,059 acres of land are maintained for recreational use by various semi-public or private organizations. Figure 15, Major Public Facilities, and Figure 8, Land Use, 1984, illustrate the locations of the City of Oak Ridge parks. Table 36 indicates the acreage of public recreation lands by general classification and also lists the major semi-public or private sites available for use in Oak Ridge.

TABLE 36

Public, Semi-Public, and Private Recreation Land in Oak Ridge

<u>City of Oak Ridge Sites</u>	<u>Acreage</u>
Playfields and Ballfields	84
Neighborhood and Community Parks	73
Other Recreation Sites (Tennis, Swimming)	223
Haw Ridge and Solway Access Park (Recreation Easement to the City from TVA)	<u>858</u>
Sub-Total	1,238
<u>Semi-Public and Private Sites</u>	
University of Tennessee Arboretum	250
Clark Center Recreation Park	330
Oak Ridge Country Club	595
Oak Ridge Sportsmen's Association	744
Other	<u>140</u>
Sub-Total	2,059
TOTAL	3,297

Source: City of Oak Ridge Department of Parks and Recreation, 1978.

Parks

Oak Ridge parks provide a variety of recreational opportunities for residents. Some parks are primarily roadside or lakeside picnic areas, others

provide wooded hiking trails, and those in the central part of the City include playgrounds, large turf areas, sports facilities and picnic areas.

East:

Elza, Melton Hill, Solway, Chestnut Ridge, and Haw Ridge Parks are located in the eastern third of the City. Elza Park is a roadside picnic and turf area on the south side of the Oak Ridge Turnpike near the eastern boundary of the City. Melton Hill and Solway Parks are lakeside facilities which provide picnic areas and water access. Chestnut Ridge Park is a wooded area overlooking Melton Lake Drive which provides picnic facilities. Haw Ridge Park is a 758-acre tract of wooded land owned by the TVA and administered by the City through a recreational easement. Activities allowed by permit include hiking, camping, and off-road driving.

Central:

A. K. Bissell Park, the area surrounding the Municipal Building and the Oak Ridge Civic Center, provides a picnic shelter, picnic areas, a playground, bandstand, and a fitness trail. At Highland View School, a playground and a softball/soccer field are available. In the Scarboro Neighborhood, the area around the Scarboro Community Center provides basketball courts, picnic areas and a playground. In addition, a playground for small children is maintained on City-owned land adjacent to the Scarboro Community Center by the Scarboro Day Care operation.

West:

LaSalle Park, a former school site, provides picnic areas, a playground, basketball court, informal turf areas, outdoor handball courts, a soccer field, and a softball field.

Future Needs:

Additional park facilities are needed for the western and southwestern portions of the City in order to uniformly serve all residential areas. The existing inventory of park land, particularly when combined with school yards and greenbelts, provides the potential for development of a first-class municipal park system. Significant capital improvements will, however, be required to bring current facilities up to desired standards.

Athletic Fields

Athletic fields fall into three different categories: (1) lighted softball and baseball fields which are maintained at a level suitable for organized softball and baseball league play, (2) lighted softball fields which are less intensively maintained and are available for either practice or informal softball and baseball use, and (3) open areas which are maintained as soccer fields for both practice and competition. These facilities are distributed as follows:

East:

A softball field at Jefferson Junior High School is maintained for competitive play, and a second informal softball field is available at Milt Dickens Park on the Oak Ridge Turnpike. Milt Dickens Park is also used for soccer. Soccer fields are maintained by the City in the Briarcliff subdivision at Parcel 616.

Central:

Pinewood and Carl Yearwood Fields are located in the Bus Terminal-Laboratory Road area and are maintained for competitive softball play. Located in the Scarborough neighborhood are the City's two baseball fields, as well as an informal softball diamond adjacent to the Scarborough Community Center. The softball field at Robertsville Junior High School is also maintained by the City for league play. The City also maintains a soccer field adjacent to Blankenship Field.

West:

The softball diamond at Big Turtle Park, recently completed with the assistance of Federal funds, is maintained for league play. A field adjacent to the softball diamond is used for soccer and football.

Future Needs:

The general demand for baseball and softball facilities appears to be adequately addressed by the existing inventory of fields. All facilities are in need of at least minor upgrading, however. The major inventory deficiency in so far as athletic facilities are concerned is the lack of soccer game fields. Presently, open turf areas in a number of locations are used for soccer fields. Should soccer continue to increase in popularity, some of these areas may be converted to more formally maintained soccer fields.

Tennis Courts

All of the City's tennis courts are hard-surfaced and lighted, and available for use year-round, weather permitting.

East:

Seven lighted tennis courts are provided near Jackson Square adjacent to the Executive Seminar Center and the Alexander Hotel. The two tennis courts at Jefferson Junior High School are also maintained by the City.

Central:

The balance of the City's lighted tennis courts, six at the Oak Ridge High School and thirteen at the Jefferson Tennis Center are located in

the central area of the City. The Jefferson Tennis Center, because of its location, is also convenient for tennis users who reside in the western portion of the City.

Future Needs:

The current number of tennis courts is sufficient to meet the recreational demand for the foreseeable future. Major maintenance and rehabilitation may be necessary at some future time as the facilities age.

Gymnasiums

The Recreation and Parks Department shares responsibility for the scheduling of all non-school use of the Schools' gymnasiums as well as being responsible for the use of the Shep Lauter Room in the Civic Center.

East:

Glenwood Elementary School and Jefferson High School both have gymnasiums which are available to the public through the Recreation and Parks Department.

Central:

Two gyms at the Oak Ridge High School and one each at Robertsville Junior High School, Willowbrook and Woodland Elementary Schools, as well as the gymnasium at the Civic Center, are provided in the central part of the City.

West:

The gymnasium at Linden Elementary School is available in the western portion of the City.

Future Needs:

The nine gymnasiums available for recreational use are adequate to meet the demand for such facilities into the future. While many of the gyms are located in the central part of the City, only a very small portion of the City's residents are not within 1.5 miles of a gymnasium.

Swimming Pools

Both the indoor pool and the outdoor pool are located in the central portion of the City. The indoor pool is used year-round, approximately fifteen hours a day; and the outdoor pool is open from Memorial Day to Labor Day, weather permitting. The outdoor pool was constructed in 1945 and does not meet State advisory health standards in terms of water circulation, filtration, and chlorination. Substantial renovation of these systems, if not the entire facility, will be necessary in the future.

Other Facilities

All of the meeting rooms available through the Recreation and Parks Department are located in the central part of the City and include rooms at the Civic Center, Scarboro Community Center and the Senior Center. The Oak Ridge Schools also make meeting facilities available to the public in classrooms, auditoriums, and cafeterias. In addition to the facilities noted above, the Recreation and Parks Department with volunteer support also maintains the North Ridge Trail, a Federally-designated National Recreation Trail, and the Haw Ridge Trail.

Schools and School Yards

Since the inception of Oak Ridge, public school facilities have provided for the recreational needs of surrounding residences. The City and Oak Ridge Schools have maintained a successful relationship in jointly addressing these needs. Municipal and school facility development activities have been supplemented by neighborhood and PTA sponsored improvements. School sites play an important role in providing park and athletic facilities, as well as meeting and gymnasium space.

East:

Glenwood Elementary School, located on Audubon Road, features a gymnasium and several outdoor facilities, including an open playing field with softball backstop, two outdoor basketball courts, playground equipment, a picnic area, and wooded acreage. The Elm Grove School at Taylor Road, now used for special programs, has a basketball court, playground, and multipurpose playing field with softball backstop. The gymnasium at Elm Grove is generally not made available to the public. Jefferson Junior High School, located on Fairbanks Road, offers four outdoor basketball courts, two of which are lighted; two lighted tennis courts; a large playing area with two soccer/football practice fields; and a lighted softball field. Indoor facilities include meeting rooms and a gymnasium. The Anderson County Schools' Daniel Arthur Rehabilitation Center on Emory Valley Road offers open space, one outdoor basketball court, and playground equipment.

Central:

Schools located in the central portion of the City include Cedar Hill Elementary on Michigan Avenue, Woodland Elementary on Marietta Circle, Willow Brook Elementary and Robertsville Junior High on Robertsville Road, and Oak Ridge High on Providence Road. The elementary schools all have playgrounds, outdoor basketball courts, multipurpose playing fields, and gymnasiums. Robertsville Junior High School features more extensive playing fields, one lighted softball field, and six outdoor volleyball courts. The Oak Ridge High School has a large outdoor field area, hard surfaced running track, and six lighted tennis courts, as well as two indoor gymnasiums and an auditorium. Also in the central portion of the City is Blankenship Field which features a football stadium, cinder surfaced running track, and soccer/football practice field.

West:

Linden Elementary School on Robertsville Road provides a playground, multipurpose playing field, three outdoor basketball courts, and gymnasium.

Future Needs:

In order to provide neighborhood park facilities within easy access to every Oak Ridge resident, some improvements will be necessary at each of the school sites.

SYSTEM EVALUATION

A review of Figure 15, Major Public Facilities, will indicate several important facts about the Oak Ridge park and open space system:

1. Most parks are located on the valley floor (as might be expected), not on the slope of Black Oak Ridge. Thus, the major facilities are in the vicinity or south of Oak Ridge Turnpike and some distance removed from the smaller residential lots.
2. Some neighborhoods have no park land at all but rely on the playfields available at nearby elementary schools. These schools are conveniently located for neighborhood use, and the Oak Ridge School Board cooperates very well with the City in the use of its facilities. School gymnasiums are generally open for public use after 5:00 on weekdays. Two of these elementary schools (Elm Grove and Cedar Hill) are scheduled to close in 1985. This Plan envisions maintenance of these sites as neighborhood parks.
3. The Oak Ridge open space network constitutes a very large proportion of the public land available in the urban portion of the City. However, this land is generally very steep, heavily wooded, and has little or no public access. Thus, this acreage would not be suitable as additional playground space and its use for passive recreation such as picnicking would also be very limited.

One of the peculiar features of the Oak Ridge park system is that its parks tend to be individually specialized. For example, a park may be entirely devoted to tennis, or swimming. A broader range of activities in certain parks would benefit neighborhood residents. The school facilities help balance activities available in each area. An overall park system plan would be beneficial if it could indicate additional or alternative park functions. Such a plan could guide the formulation of the parks capital improvements program.

Most parklands and facilities are well maintained due to vigilant City upkeep and modernization programs. Recent City resident surveys have given the system good ratings for recreation facilities (75 percent excellent/ good) but slightly less favorable reviews for parks (62 percent excellent/ good),

probably due to the location and size constraints mentioned previously and budgetary constraints on maintenance.

The major challenge to the Oak Ridge Recreation and Parks Department in recent years has been coping with shifts in population age structure and leisure time preferences. The City's average population age has steadily increased, reducing the demand for such facilities as the Wildcat Den (teenagers' center) and increasing the need for programs at the Senior Center.

Information collected in the 1981 and 1982 Oak Ridge Citizen Surveys regarding use of recreation facilities in the City provides an excellent indicator of the types of recreation facilities which are most popular with residents. As indicated in Table 37, the most frequently-visited facilities operated by the Recreation and Parks Department are the parks, which typically offer picnic areas, large grassy areas and playground equipment. The Recreation Center in the Civic Center complex is the second most popular facility, with approximately 50 percent of the households surveyed having visited there in the previous six months. The recreation facility with the lowest use in both surveys was the Scarboro Community Center.

TABLE 37

Use of Recreation Facilities

<u>Facility</u>	<u>Percent of Households</u>	
	<u>1981 Survey</u>	<u>1982 Survey</u>
Library	73	82
Any Oak Ridge Park	44	56
Recreation Center at Civic Center Complex	55	49
Melton Lake Drive Picnic Areas	N/A	44
Indoor or Outdoor Swimming Pool	48	42
City Marina	41	40
Arboretum	N/A	36
City Softball or Baseball Diamond	30	30
Fitness Trail at Civic Center	35	30
Tennis Court	33	29
Performing Arts Pavilion	29	28
North Ridge Trail	12	10
Scarboro Community Center	3	3

Source: 1981 and 1982 Citizen Surveys, City of Oak Ridge. Responses to the following question: "Now please tell me which of the following recreation facilities you or anyone in your household has used in the past six months?"

The Civic Center, located near Tulane Avenue, is very heavily used and does not appear to have sufficient space to accommodate the many group demands for its facilities. The Civic Center contains a swimming pool, gym, and meeting rooms. Re-use of the recreation facilities at the schools scheduled to close has been suggested as a means to alleviate some of this shortage.

A second community center is located in the Scarboro Neighborhood on Carver Avenue. This facility was remodeled in 1978 and consists of a game room, lounge, kitchen, and small meeting room. A large, multipurpose room is being added in 1985.

The Oak Ridge Marina, located at Melton Hill Lake on the Clinch River, has a small boat docking area and public boat ramp. The Marina has recently become a site for competitive rowing and speed boat events. These activities and the Chinese restaurant located at the marina have attracted a level of use beyond that associated with marina operations. Use of this facility for general boating is not great, and some vandalism and late-hours loitering occurs. Some residents have expressed an interest in seeing this location used as a popular public gathering and socializing focal point, something which is judged as missing in Oak Ridge.

The outdoor municipal swimming pool, located at Robertsville and Providence Roads, was created by adding cement sides and plumbing to a pond. Its size is magnificent, but recently its maintenance costs have become similarly large. A decision needs to be made soon as to whether to continue repairs and modernization or build a new pool. This facility is heavily used.

Chestnut Ridge Park was acquired in 1982 by the City at no cost from the TVA. It is situated west of Melton Lake Road just south of Emory Valley Road. Since it is very hilly, heavily wooded, and not easily accessible by many residents, its use has been limited to picnicking. Resale as a residential site has been suggested.

Haw Ridge Park is a 865-acre site located on a peninsula south of Edgemoor Road and upstream of the Solway Bridge. A 785-acre site was acquired by a recreation easement from the TVA and combined with 80 acres owned in fee by the City of Oak Ridge. The site is intended to be used for camping, hiking, and off-road vehicle recreation. A master plan completed in 1960 proposed \$20 million worth of improvements and inclusion in the Tennessee State Park System, but its priority was too low for this to be accomplished. The City of Oak Ridge also has had more pressing improvement projects, so very little use has been made of this land.

There is a tremendous demand for park and recreation facilities by employees at the three DOE plants. This demand comes principally in the form of softball and basketball leagues, and is experienced on a daily basis. Clark Center Park is owned and maintained by the DOE facilities operator (now Martin-Marietta) and used for employee recreation. It is 330 acres in size and has facilities for games and team sports, picnicking, camping, and boat launching. Based upon the fact that demand spills over into City parks and the Civic Center, it is felt that Martin-Marietta could now do more to help accommodate its employees' recreation needs. The fact that most Martin-Marietta workers live outside of Oak Ridge emphasizes the importance of private assistance in this regard.

A potential new, major park site exists near the center of Oak Ridge. This is the currently unused "front lawn" of the DOE administration building at Laboratory Road and the Oak Ridge Turnpike. This portion of that property was recently rezoned for open space use, but the land is still owned by the DOE. Due to its excellent access and visibility and its proximity to Jackson Square, there is current interest in the site as a retail, office and/or hotel location, but the sentiment to retain the land as open space appears to predominate.

The Oak Ridge Recreation and Parks Department offers summer playground programs, swimming lessons, open swimming, competitive swimming, basketball, softball, track, soccer, and a variety of activities at the Civic Center, Scarboro Community Center, and the Seniors' Center.

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Parks and Recreation System Plan

Oak Ridge is situated in a setting of natural beauty blessed with abundant recreational features. The City is bordered by Melton Lake and within easy access to other TVA waterways. The Great Smoky Mountains National Park and a variety of Tennessee parks are located within an easy drive from the City. Oak Ridgers have come to view these resources along with their own recreational facilities as essential components of the community's favorable quality of life.

Park and Recreation System Issues

1. How can the community's park and recreation facilities best be maintained and expanded?
2. Which municipal parks should be upgraded?
3. Should each municipal park have a diversity of activities or be specialized?
4. How can recreational activities for teenagers and the elderly be improved?
5. How can the municipal park system be used to enhance the feeling of a city center and community meeting place?
6. What should be done with Chestnut Ridge and Haw Ridge Parks?
7. Can Martin-Marietta be persuaded to participate more heavily in meeting its employees recreation desires?

A PUBLIC-PRIVATE PARTNERSHIP APPROACH

The original design of Oak Ridge provided only marginal public and private recreation facilities. While there were a variety of athletic fields, tennis courts, a large swimming pool, and temporary recreation buildings, Oak Ridge in the late 1940's featured neither neighborhood parks nor large community parks. To address this deficiency, the 1948 Master Plan prepared by Skidmore, Owings & Merrill called for extensive use of public school sites for new neighborhood playgrounds and community playfields. Two large community parks of 20-30 acres each were proposed, as well as several hundred acres to be reserved as greenbelt and waterfront areas.

During the past four decades, several municipal recreation facilities have been added to the City's inventory. These have been complemented by development of state and federal facilities. In addition, the community has seen a dramatic growth in the number of private facilities operated by churches, associations, and businesses. The community's recreation mosaic

now encompasses not only municipal facilities, but also performing arts centers, museums, camps, golf courses, athletic clubs, an arboretum, parks, playgrounds, and athletic fields operated by other providers. In order to maintain, expand, and enrich the selection of park and recreation facilities available in Oak Ridge, it will be necessary for the City to act in partnership with others.

POLICY P-1: The City will support and work cooperatively with other recreation service and facility providers in Oak Ridge to maintain and enhance the community's favorable quality of life.

Coordination With Recreation Users and Providers

The City has a long tradition of working with various recreation groups. A more formal coordinating approach will be required in the future in order to effectively meet the community's needs. The City will work with interested individuals and groups within the community to establish a Community Recreation Council (CRC) composed of representatives from the City and Schools, youth agencies, athletic associations, leisure oriented clubs, and performing arts groups to better coordinate provision of recreation programs in Oak Ridge. The CRC should consider the establishment of task forces to address the special recreational needs of individual segments of the community, particularly teenagers.

Financial Incentives for Privately Developed Facilities

The City will consider establishing a grant and/or interest-free loan program to provide financial incentives to non-profit organizations. This assistance may be used to construct or expand but not maintain nor operate facilities that meet the recreational, social, and/or recreational needs of the community when such facilities are then opened to the general public. The financial incentive program should be formally structured with grant and/or loan applications submitted in writing, thoroughly reviewed according to established selection criteria, and approved by City Council. Grants should be limited to \$5,000 per approved project and loans to no more than 10 percent of the total project cost.

PARK SYSTEM IMPROVEMENT ACTIVITIES

The City's original inventory of parks and recreation facilities designed by war-era planners emphasized active and organized leisure pursuits rather than passive and/or individual activities. General and user surveys conducted by the City indicate that community preferences have broadened over the years and that the frequency of general use of open space, parks, picnic areas, and swimming pools exceeds that of ballfields and tennis courts. This underscores the importance of continually evaluating the community's needs.

POLICY P-2: The City will support a system of public and private recreational facilities and open space appropriately located, designed, maintained, and coordinated so as to closely meet

the needs of the community. On-going analysis will be undertaken by the City to assure that municipal facilities and programs are provided in a way that complements, rather than duplicates, those furnished by other providers.

Surveys indicate the Oak Ridge citizens are generally satisfied with parks and recreation but desire some specific improvements. Parks are well-used and an important part of local life. Some changes need to be made to keep up with demographic changes and to achieve certain urban design goals (i.e., stronger city center and an informal public gathering place).

Analysis of available City and Schools land holdings indicates that, with the exception of neighborhoods located in certain fringe sectors, most residential areas are within easy access of parks or school yards. Relatively few residents responding to the City's surveys perceive the availability of parks and recreation facilities to be a problem. Not all sites are adequately developed, however, and survey ratings for quality of parks have not been nearly as high as for other municipal facilities and services. Deficiencies include poor site design, erosion problems, insufficient landscaping, inadequate playground equipment, limited seating and picnic furniture, and lack of water fountains, restrooms, parking, and public lighting fixtures.

POLICY P-3: The City will work toward achieving more diversity in its park system as conditions permit, analyzing recreation deficiencies on a neighborhood basis, and scheduling improvements through the capital improvements program. Site plans will be prepared for the ultimate development of each park with the participation of neighborhood residents and other interested citizens. Major improvements will be made to one park at a time, rather than scattering the efforts, so as to achieve a noticeable impact.

General Development of Park Facilities

The City will prepare site plans for the eventual development of all existing parks facilities, designs that will be updated as necessary and become part of its Capital Improvements Plan (CIP). At a minimum, the City will seek to provide the following at each facility that serves as a neighborhood park: playground equipment, picnic tables and grills, park benches, a hard surfaced play area, and a multipurpose playing field. However, the City rejects the notion that per capita facility standards promulgated by such groups as the National Recreation and Parks Association should be adopted as development goals, believing instead that each community should determine its own needs.

It is the City's desire that residents of the neighborhood in which each facility is located should have the most to say about its development. Accordingly, residents served by a park facility will be surveyed by the City staff to determine their desires before any design is finalized and presented to City Council as part of the CIP. To the extent practical, public meetings will be held in each neighborhood affected to share information about available funding, proposed site designs, and construction schedules.

POLICY P-4: The City will, to the extent that suitable land and funding are available, develop park and recreational facilities to serve residential neighborhoods located in excess of one half mile from a public park or school yard.

Establishment of New Park Facilities in Developed Areas

Residential areas inadequately served by current public park and recreation facilities include portions of western, northeastern, and southeastern neighborhoods. As funding becomes available, new park facilities should be developed in these areas. In addition, the playgrounds located at Cedar Hill and Elm Grove Schools should be improved and converted to municipal park facilities when the sites are turned over to the City at the end of the 1985 academic term. In summary, new park facilities for existing neighborhoods should include the following:

• **Elm Grove Park:**

This park will be created on the site of Elm Grove Elementary School after that school is retired from use in 1985 and transferred to the City of Oak Ridge. The site is approximately seven acres in size and fairly level. Elm Grove Park will be conveniently located between Blankenship Field on the west and Milt Dickens Park and Glenwood School on the east, adjacent to high-density housing, and in the midst of a sizable low-density neighborhood.

• **Cedar Hill Park:**

This park will be created on the site of Cedar Hill Elementary School after the end of the 1985 academic year when the facility is retired and turned over to the City. The park site is approximately seven acres in size.

• **West Ridge Park:**

West Ridge Park may be created in conjunction with the future development of middle- and upper-density housing between Montana Avenue and New Haven/Netherlands Roads. This park may be on the order of five acres in size. While topography and vegetation may impede the placement of large playfields, these sports could be accommodated at nearby Linden School, at Big Turtle park, and, possibly, at Oak Hills Park. Land acquisition for West Ridge Park could be accomplished through dedication of land at time of subdivision.

• **Pinhook Park:**

This park will be developed on approximately six acres in Country Club Estates north of Graceland Drive and Glassboro Road.

- **Briarcliff Valley Park:**

Assuming the Oak Ridge Schools relinquish the reservation of Parcel 616 for a future school site, this park will be established on approximately seven acres adjacent to the Briarcliff Community Club. Access will be sought from Briarcliff Avenue. The City will attempt to accommodate the soccer activities currently making use of the site in design of the new park.

- **A. K. Bissell Park:**

A. K. Bissell Park, the 40-acre site encompassing the Civic Center and Municipal Building, is largely undeveloped beyond the southeast portion containing a tot lot, picnic area, and outdoor pavilion. Its terrain, central location, and proximity to a variety of complementary activities provide the City an unparalleled opportunity to develop a large park facility that not only meets recreational needs, but also contributes to the development of stronger urban center.

Because of its importance both with regard to the development of needed park and recreation facilities and the creation of a stronger city center, professional design assistance will be sought for improvements at A. K. Bissell Park. Within the context of an improvement plan encompassing all of the City's parks and recreation facilities, a detailed master plan for the phased development of A. K. Bissell Park will be prepared by the City and its design consultant. Improvements at the park will be given top priority during the FY 1986 - FY 1989 period.

POLICY P-5: The City will improve A. K. Bissell Park as a centralized recreation facility more strongly oriented toward athletics, community events, strolling, and passive recreation.

Establishing Parks in New Neighborhoods

With limited resources available, the City will find it difficult in the future both to maintain all existing park and recreation facilities and acquire and develop new ones. In cases where new subdivisions encompass officially-designated sites for future school, park, or recreation facilities, current regulations allow provision for the dedication to the City of up to ten percent of gross land area. The City should modify its subdivision regulations to require that all subdivision developments dedicate public park space or a cash equivalent. Providing such facilities after a subdivision is developed is often either impossible or cost prohibitive.

POLICY P-6: As new residential neighborhoods are established, the City will require developers to dedicate land or an equivalent amount of cash for public neighborhood park and recreation facilities. The amount of land or cash to be set aside shall be based upon the density and acreage of land developed, as described in amendments to the City's Subdivision Regulations.

Two parks are proposed for future neighborhoods. They are as follows. (Refer to Figure 16, Municipal Facilities and Utilities Plan.)

- **Oak Hills Park:**

This site is proposed to complement West Ridge Park and provide some field sports opportunities to residents of the far west end of the City without the users having to cross Oak Ridge Turnpike. The proposed location is west of Mason Lane and within a tract of land proposed for eventual acquisition by the City from the Department of Energy. The topography is hilly, yet it is one of the most suitable sites in the vicinity which is not directly along the Turnpike. Substantial tree removal and site grading is expected in order to prepare the site. This park may be six to ten acres in size, depending on final facilities chosen, site design, and topography and cost constraints.

- **Southwest Quadrant Park:**

This park will be located on Parcel 405, the former municipal landfill site which is north of Tuskegee Drive from South Hills Golf Course. It will be intended primarily to provide active recreation for future residents to the west in Gamble Valley but may also serve the Scarborough and nearby residential areas.

Managing Peripheral Park Sites

The City manages two park areas beyond the periphery of its urban area: Haw Ridge Park and Chestnut Ridge Park. The proper development of Haw Ridge Park would require a massive amount of money. Incorporation of this site into the State Park system may be a long-term possibility. Another is the use of the site by a qualified recreation facility developer/operator. Chestnut Ridge Park, on the other hand, has fallen into disuse and should be held only as public open space and not managed as a park.

POLICY P-7: The City will hold Haw Ridge Park for long-term recreation needs (camping, hiking, nature interpretation, picnics, etc.) but seek alternative uses for Chestnut Ridge Park land.

MAINTAINING AND EXPANDING PUBLIC OPEN SPACE

Much of the City's natural attractiveness can be attributed to the system of public greenbelts incorporated into its original design. Greenbelts serve recreational needs, (particularly in the case of North Ridge Trail), limit the density of residential areas, and preserve sensitive hillside and other areas from development. Two major issues have been raised in numerous Comprehensive Plan meetings -- the lack of greenbelt in the newer residential areas, and limited public access to existing greenbelts.

POLICY P-8: The City will maintain, expand, and provide improved access to its public greenbelts.

Establishing New Greenbelts

In a fashion similar to the previously described dedication of land for parks and recreation facilities, the City will adopt procedures to provide for the establishment of public greenbelts in newly developed residential areas. Large open areas maintained by TVA, DOE, and such organizations as the Oak Ridge Country Club will be taken into account before additional acreage is acquired for development of public greenbelts in those areas.

Improving Greenbelt Access

In Oak Ridge's early days, public greenbelts were laced with walking trails, many of them fitted with wooden boardwalks. The boardwalks are long gone and many of the trails overgrown; access to the greenbelts has been diminished over the past 20 to 30 years. Moreover, the yards and gardens of many residences adjoining greenbelts have gradually encroached into public property.

Since the incorporation, the City has viewed greenbelts as natural wooded areas and, other than occasional drainway clearance, conducts no tree trimming or other maintenance to them. While this philosophy will remain largely unchanged, the City will continue to seek the assistance of interested groups and individuals to establish and maintain walking trails through public greenbelt areas. Where appropriate, the installation of benches and picnic tables in greenbelt "pocket parks" will also be considered. Finally, the City will devise and implement a plan to better identify established greenbelt public access points.

Establishing of East Fork Poplar Creek Greenbelt

A bicycle and pedestrian trail will be considered along East Fork Poplar Creek from Robertsville Junior High School to the Oak Ridge Country Club along East Fork Poplar Creek in conjunction with a linear open space system. (Refer to Figures 9 or 16.) This proposal would allow non-motorized movement in this quadrant of the City in an alignment other than Oak Ridge Turnpike right-of-way. It would benefit residents of the proposed middle- and upper-density housing south of the creek as well as residents north of the Turnpike.

Realization of this idea is dependent upon at least four major factors:

1. Willingness of the adjacent property owners to sell the required land;
2. DOE's willingness to finance the acquisition and public access costs as part of a long-term program to address mercury contamination problems along the East Fork Poplar Creek floodway;
3. A satisfactory technical, legal, and financial solution to the problem posed by the mercury contamination in the soil along the creek; and
4. Acquisition in fee by the City of some portion of the creek floodplain or acquisition of trailway easements along the creek.

If the technical solution to the public health problems of the contaminated soil so permits, the City will pursue development plans. The floodway and adjacent properties should be studied at a large scale and members of the public consulted to determine a means of introducing the bicyclist/pedestrian path which minimizes adverse affects on neighboring properties.

It is felt that the introduction of a public trailway in this alignment could have significant public relations benefits (in addition to those previously mentioned) through the dissipation of fears about the mercury hazards. The City will, of course, not act in any way so as to jeopardize public health while exploring or implementing this concept.

RECREATION PROGRAM IMPROVEMENT ACTIVITIES

Two segments of Oak Ridge's population will require special attention in future planning for parks and recreation programs -- teenagers and the elderly. Recreational opportunities for teenagers are perceived by many to be limited at present. This is evidenced both by survey responses and citizen input at various Comprehensive Plan meetings. Opportunities for the elderly are currently adequate, but may be insufficient to meet demands that are likely to grow over the next decade as more residents move into the elderly age grouping. The City should closely monitor the recreational needs of its elderly over the next few years, while attempting to address the issue of teenage recreation during the immediate time frame.

POLICY P-9: The City will seek methods to improve recreational opportunities for teenagers and the elderly.

Providing for the Recreational Needs of Teenagers

In conjunction with the previously described Community Recreation Council (CRC), the City will seek to establish a task force to address the recreational needs of the community's teenagers.

A recently completed analysis indicates that the City's own programs for teenagers have been poorly publicized and have generated little interest. Through use of surveys, the Teen Board, and the CRC, the City will attempt to redesign its program offerings to better meet the needs of teenagers. As with other parks and recreation activities, the City will seek to compliment rather than duplicate the program offerings of other providers.

Finally, the City will evaluate with the CRC the possibility of establishing a permanent Teen Center. This evaluation will consider the need for such a center, its type and location, staffing and operations, and financing.

QUALITY OF LIFE



Quality of Life Analysis

Quality of life in Oak Ridge is addressed by this Chapter of the City of Oak Ridge Comprehensive Plan. Since quality of life is a desired result rather than a contributory element of the Plan (as is, for example, Municipal Utilities), this chapter focuses on highlighting and integrating other elements of this Comprehensive Plan which most directly contribute to quality of life. In addition to such public municipal activities, private social and corporate contributions toward quality of life are also included in the discussion. This Analysis of Conditions and Issues initiates the Quality of Life Plan with the following subsections:

- Role in the Comprehensive Plan
- Components of Quality of Life
- Quality of Life in Oak Ridge

ROLE IN THE COMPREHENSIVE PLAN

The term "quality of life" is often used when describing the attractiveness of an urban area. Improving the overall quality of life of a city's residents is the ultimate aim of any comprehensive planning effort, for it encompasses all of those features prized by people. In fact, a higher quality of life is one of the principal reasons for the establishment and habitation of cities, although that result is not always the consistent experience of every urban resident.

The conscious pursuit of improved quality of life has intensified as an expanding economy has freed many people from a lifelong struggle for the basic necessities and has allowed them to reach out for other rewards. Higher average levels of education, increased travel, and better communication (especially television) have helped raise American's realization of the richness which life has to offer. The result is that greater personal, corporate, and public resources are being applied to those elements which collectively contribute to quality of life.

This is not to say that quality of life is a newly-discovered ideal which was scorned or overlooked in the past. It is simply that large portions of the American population have had their expectations of life sufficiently raised that cities are now more often judged against one another according to a wider range of features than previously.

A high quality of life in an urban area can often stimulate further improvements. Such locations tend to attract high-paying, non-routine industries (often including "high-tech"), for their employees tend to demand the options that are described below as characterizing good quality of life.

An upward spiral of economic growth, fulfilling work, responsive local government, and a rich social and cultural milieu may continue until certain factors (e.g., city size) militate against further enhancement.

A local municipal plan may contribute toward the promotion of high quality of life. However, that result cannot necessarily be produced by public actions, for its components are too diverse. Municipal government can provide police protection, fire safety, locations for housing and locations for business, roads for movement and interaction, sewer and water utilities for public health, housing assistance for the poor, parks, recreation, and library programs, civic identity and leadership, and promotion of economic growth. These public actions can establish the necessary foundation upon which a multitude of personal activities can occur and flourish.

This chapter of the Oak Ridge Comprehensive Plan will concentrate, then, on those actions which the City can take that most distinctly influence the quality of life of its citizens. Many of these actions may be mentioned elsewhere in this Plan but will be collected here for special attention. Also included in this Chapter will be suggestions for social and corporate activity which may advance quality of life just as directly as any public endeavor.

COMPONENTS OF QUALITY OF LIFE

There are various ways to define the components of quality of life, and one approach is presented here. The following factors combine in various ways for each individual to influence his or her happiness. An important consideration in this "menu" is a person's ability to choose among a wide array of possibilities under each topic to create the combination that is best for him.

Physical Needs

Everyone requires food and shelter, health and health care, and physical safety. Personal income is needed to supply most of these needs. Private businesses and industry is, of course, the major generator of individual wealth and prosperity, and, as such, it is essential to individual and community physical satisfaction and the basis of quality of life. When quality of life is discussed, business and employment must be considered. Conversely, other elements of quality of life can attract new industries to a community.

Local government supplies police and fire protection and sewer and water utilities for physical safety; is a participant in the creation of various types of housing, and provides parks for exercise. State and federal agencies and local charitable organizations assist the needy with food, shelter, and health care.

Social Needs

The emotional and practical support of family and close friends is essential to personal well being. Similarly, a network of acquaintances and secondary friends enriches one's life in many ways.

Local government can aid in friendship formation by working cooperatively with developers in encouraging the design of residential areas which promote interaction among neighbors; by providing parks, recreation and social gathering buildings, and recreation programs which foster companionship; and by promoting a diverse population as to allow the growth of rich social networks. Clubs, special-interest organizations, churches, and sports teams provide excellent socialization opportunities.

Spiritual Needs

Religion plays a large role in many persons' lives. This is one element of quality of life in which government has no place.

Environmental Needs

Beyond the weather that affects daily lives, the quality of urban life is shaped by the physical environment of our cities. Urban design influences human interaction and affects how we feel about our relationship to the natural world. Municipal government can influence the basic parameters of privately-financed urban design and can build or improve two of the major elements of a city -- streets and parks.

Labor Needs

Nearly everyone must spend a major portion of his or her adult life working to provide necessities and luxuries. The degree of satisfaction and fulfillment one derives from his job can be critical to his self-image and happiness. City government may influence job satisfaction by promoting economic growth, job diversity, and a higher level of job selection. Cities have long been the location of labor improvement and economic expansion. Public schools, community colleges, and other educational agencies assist job satisfaction through training and education for non-routine work.

QUALITY OF LIFE IN OAK RIDGE

The quality of life in Oak Ridge is generally regarded as being high. Most residents feel it is a good place to live, work, and raise a family. However, there are some shortcomings which are identified below. The unique economy and history of Oak Ridge seem to be the source of what is valued about this City as well as what is not.

Physical Factors

Oak Ridge residents enjoy fine police and fire services and good public utilities. There are very good regional outdoor recreation opportunities

available, and the local park and recreation system is superior to most other southeast cities of comparable size. There are many well-paid and challenging jobs in Oak Ridge, and many households enjoy relatively high incomes. However, there is a small proportion of households which suffers with less desirable occupations and low incomes.

More diversity is needed in housing types, sizes, styles and prices. There is a shortage of attached housing, mid-priced housing, and housing for the very low-income segment of the population. Also, since so much of the housing stock was built as temporary dwellings during World War II, continued housing rehabilitation, maintenance, and/or renewal efforts are essential.

There are many minor improvements needed to the street system, particularly to provide better east-west movement. Unless steps are taken to correct these problems, quality of life will be affected by the delay caused by the street system.

An often-mentioned need is for more and better. Also, some expansion or improvement of playfields is desirable.

Social Factors

Oak Ridge consists, generally, of well-educated and culturally-aware people who have a wealth of personal interests to share. Learning and personal improvement are lifelong aims of a large portion of the population. Therefore, Oak Ridge has a disproportionately great number of clubs, organizations, and cultural resources. Social opportunities for those aged 30 to 55 are generally adequate.

However, the composition of the Oak Ridge population is deficient in several ways. Many of the City's residents have lived in Oak Ridge for many years, which offers stability but also risks stagnation or a closed attitude. The average age is above the national average, and the proportion of young adults and small children is rather low. Social opportunities for young, unmarried people are said to be available but more difficult to identify than in other communities. On the positive side, racial interaction continues to improve, and the crime rate is relatively low.

There is a demand for more opportunities for interaction among senior citizens (who form a small but growing segment of the population) and among teenagers. Also, there is a general demand for more and better restaurants, taverns, other places of entertainment, and public places to gather, stroll, and watch others. Night life in Oak Ridge is generally lacking for all age groups.

To its credit, there seems to be a consensus that the municipal government adequately represents the community's interests and that the average citizen can have some influence on local, public decision-making. Thus, public participation in community events is high.

Environmental Factors

Oak Ridge enjoys a mild climate, and air and water quality are good. However, there is justifiable concern about mercury contamination of soil along the East Fork Poplar Creek and about proposed long-term storage of hazardous wastes on the DOE reservation.

Oak Ridge needs greater definition of the city center concept that was put forth in the 1948 plan for the City. Desired is a central site where people can gather and which may become the focus of civic pride. Several elements of that goal are already in place, but further work is necessary to produce a viable city center consisting of commercial, recreational, educational, and civic facilities.

Other elements of community charm leave room for improvement. Once-prominent and popular overlooks are now gone. Signs and "strip" commercial development have eroded the pleasant appearances of Oak Ridge Turnpike.

Trees, a major visual element throughout most of Oak Ridge, are lacking along the community's two major thoroughfares. The entryways to the City, especially at Solway, present a poor image and do not properly announce the heritage of the City. Some housing conditions are more than a visual problem and pose health, safety, and livability concerns.

Labor Factors

The fear of job loss is great in Oak Ridge. Since two-thirds of the labor force is employed by the DOE contractor, policy decisions in Washington, D.C., could put thousands of people out of work in a very short time. Alternative employment in Oak Ridge is rather limited.

The quality of work life in Oak Ridge is generally quite high due to the many non-routine scientific and technical positions available at the DOE plants and laboratories. Other "high-tech" firms are beginning to move to Oak Ridge and the vicinity, adding to the quality of the job market.

However, much more economic and employment diversity is needed in order to provide more entry-level jobs, more positions which do not require a college degree, and more opportunities for mobility for those scientific and technical personnel now employed by the DOE contractor. Such diversity would help reduce the fear of job loss experienced by those involved in DOE work.

Finally, the quality of the Oak Ridge schools is excellent. Unfortunately, most of the graduates cannot begin their career in Oak Ridge because of the lack of sufficient entry-level positions.

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Quality of Life Plan

SOCIAL AND CULTURAL NEEDS

The Oak Ridge population is fairly uncommon in terms of occupations and income, but is gradually becoming more normal in its age profile, as is discussed in the chapter of this Plan addressing Population and Housing. Oak Ridge has an outstanding number of social and cultural organizations for a community of its size due to the intellectual energy of its population and their experience in other cities. There is a desire to continue to build on this foundation and enhance opportunities for recreation and socialization in the community through improvement of public and private facilities and the introduction of more restaurants, night spots, public gathering places, team sports, and contemporary attached housing.

POLICY Q-1: The City will strive to enhance Oak Ridge population diversity (age, marital status, income occupation) by promoting new industrial and commercial opportunities, by promoting more new mid-priced owner- and renter-occupied housing, and by promoting increased housing alternatives for elderly homeowners.

POLICY Q-2: The City will attempt to increase social interaction opportunities in Oak Ridge by promoting the development of additional commercial entertainment and by making maximum use of such community facilities as parks, community centers, and schools.

POLICY Q-3: The City will continue to work to promote racial integration, following equal opportunity guidelines in all local public hiring, housing assistance, and service provision practices.

Employment Opportunities

The City of Oak Ridge will diversify employment opportunities and lessen the community's dependence on DOE operations by continuing to market properties in its municipal industrial parks and through Martin-Marietta Energy System's development of its Technology Park. These efforts will provide new openings in light manufacturing, office, research and development as well as create jobs in support businesses such as retail sales. The Economic Development chapter of this Comprehensive Plan describes actions the City will take to achieve these results. (See also Policy Q-4, below.)

Housing Opportunities

New, affordable housing will be encouraged by the Oak Ridge Land Use Plan (refer to Figures 9 and 10), which designates locations for urban growth and promotes a variety of housing types and intensities. Existing housing will be maintained as a valuable component of the total stock through a variety of

charm. Lack of a clearly defined city center has been identified as another component of the aesthetic shortfall of the community.

POLICY Q-8: The City will improve, protect, and publicize the image of Oak Ridge as a clean, safe, and attractive environment.

POLICY Q-9: The City will aggressively promote Oak Ridge as a "center of excellence" reflecting not only the City's tradition as a location of technological advancement, but also as a progressive community rich in its outstanding natural beauty, unique social and cultural heritage and amenities, and favorable quality of life.

POLICY Q-10: City will develop a plan for landscaping and sign control along the City's major thoroughfares and at the entry points of the community.

POLICY Q-11: The City will promote community pride and identity.

POLICY Q-12: The City will seek to further enhance its commercial-civic-recreational-educational City Center through an urban design master plan, proper zoning for new retail, office, hotel and entertainment activities, improved park space, pedestrian and bicyclist amenities, landscaping, and possibly, expanded educational facilities.

POLICY Q-13: The City will strive to remain reasonably free of environmental hazards and will strongly encourage adherence to highest standards in all hazardous material handling practices on the Oak Ridge Reservation.

Image Improvements

Oak Ridge will continue to insist upon good quality site design and landscaping among private developments. This will be complemented by sound land use planning, zoning administration, public facilities provision, and public landscaping. The City will update its 1972 streetscape plan, which called for a program of tree and shrub planting along the major thoroughfares, and it will budget for its long-term accomplishment. Special emphasis will be placed on landscaping, lighting, and signage improvements at entrances to the urban area and the city center (Turnpike-Illinois-Rutgers). Throughout the community, signs will be allowed only in an subdued fashion.

Community pride and identity will be encouraged through continued citizen participation in the ongoing planning, budgeting, and improvements process, through support of volunteer, recreational, service, and neighborhood organizations, and neighborhood identification signs.

The City of Oak Ridge will spread the word about this community's attributes through the Martin-Marietta Welcome Center at the Museum of Science and Energy, advertisements at McGhee-Tyson Airport, development information

packets to be periodically made available to realtors, builders, and bankers, and through the State's tourism department.

The Oak Ridge Land Use Plan contains broad recommendations for promoting more intensive development in the Turnpike-Illinois-Rutgers vicinity. The City regards this area as its central business district and will seek ways to promote fine shops, restaurants, offices, and an improved Bissell Park. Boulevard landscaping will add to the desired sense that this is the social and psychological center of Oak Ridge.

East Fork Poplar Creek

As suggested in the Parks and Recreation Plan, the City will consider the development of a linear park along East Fork Poplar Creek. After extensively reviewing this proposal with area landowners and environmental officials, the City will seek DOE's financial support in acquiring East Fork Poplar Creek floodway areas that have been contaminated as a result of Federal manufacturing activities upstream and set the area aside as an undeveloped preserve until on-going environmental research is completed by State and Federal agencies.

Once the technical, legal, and financial issues surrounding the soil contamination problems of East Fork Poplar Creek have been settled, the City will move to establish a linear public open space and trailway system in this floodplain. This will help to erase any negative public perceptions associated with the creek as well as providing a valuable community amenity.

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GENERAL MANAGEMENT AND IMPLEMENTATION

General Management and Implementation

City spending, local government structure, use of human resources, and program evaluation techniques are key tools for implementing the Oak Ridge Comprehensive Plan and achieving the City's aims.

The Priority Framework described in this chapter of the Plan offers a way of thinking about City spending and a fairly simple way of relating budget proposals to the long-range planning objectives of the City. The Priority Framework has been developed primarily to guide the development of the six-year capital improvement program and the capital budget. By setting priorities for City action, both within and between program areas, it links the policies of the City, as established in the Comprehensive Plan, to capital investments.

In addition to its use in the capital improvement program process, this framework should be used to evaluate proposals funded in the operating budget. It may also serve as a guide and framework for discussing the merits of proposals that follow one City policy while conflicting with others.

PRIORITY FRAMEWORK

To make the policies and plans of this document operational, the Priority Framework proposes two classes of actions to be expressed in the City Capital Budget. First, there are those basic things that must be done in order to keep the City livable, regardless of long-range trends or goals: basic public services. Second, there are discretionary actions which will shape the future: strategic investments in opportunity areas.

In Step One of the evaluation process, project proposals should be sorted out between and within these two classes. Is the project required to provide basic, necessary services, or does it represent a strategic investment? How closely aligned is the proposal to the policies and programs of the Comprehensive Plan?

Step Two provides further evaluation after project proposals have been reviewed on this basis. In this step, cost-effectiveness criteria are applied to each proposal.

Capital Budget Categories

Capital Budget categories parallel to the program areas in the plan are fundamental to the success of a coordinated planning and budgeting process.

In order to see how City spending relates to City policies, and in order to facilitate plan implementation, the same organizational categories used in the plan should also be used for programming, budgeting, monitoring and

evaluation. All City actions grouped in one category should have common objectives or direction. These categories or programs areas are:

- **Population and Housing:**
Activities which provide decent, attractive housing and help the community grow.
- **Economic Development:**
Activities which foster diversified economic growth to help support City services and create improved job opportunities.
- **Land Use and Development:**
Activities which help build an attractive and functional environment.
- **Transportation:**
Activities which help move people and goods about the City.
- **Facilities and Services:**
Activities which relate to the provision of water and sewer lines, parks, fire safety, schools, etc.
- **Quality of Life:**
Activities which are not directly related to or transcend the previous categories and which enhance the attractiveness of the City as a place to live.

POLICY M-1: The City will maintain capital budget categories parallel to the categories of the Oak Ridge Comprehensive Plan.

Spending Priorities

Municipal capital and operating spending priorities should be established in Oak Ridge according to the following policies. These policies establish four groups of projects according to order of importance, with basic public service projects given higher priority than strategic investment projects. The number of projects that may be annually undertaken from each group depends on the total amount of budgeted resources available. Figure 17, Relationship of Priority Framework to Budget Resources, illustrates this concept.

Basic Public Services:

A basic public service or facilities is one that would not be provided without public action, and that is either:

- essential to the health and safety of the City's "citizens"; or
- necessary in order to avoid irreparable damage to City resources; or
- a service without which the City would be generally unacceptable to its residents.

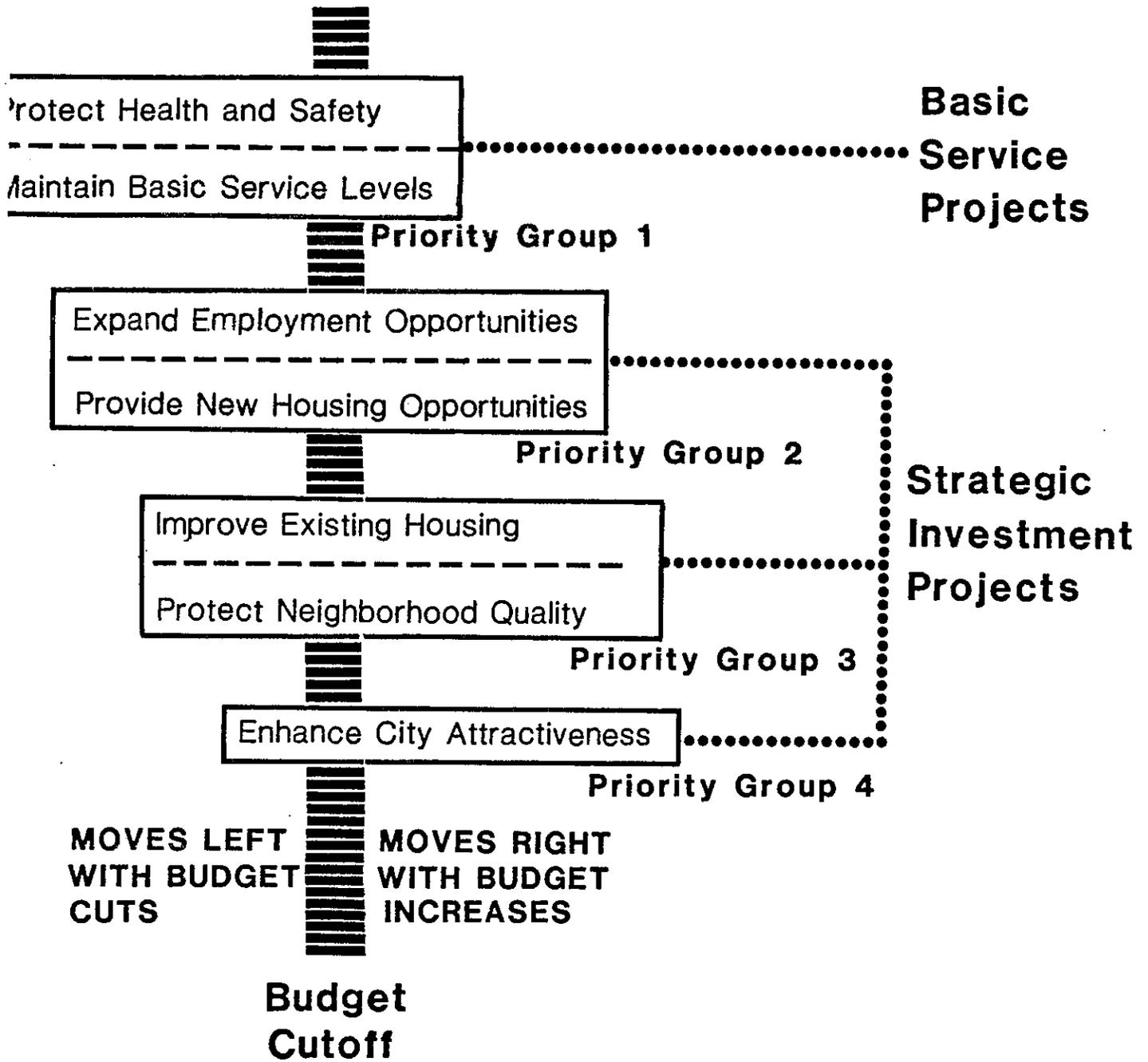


Figure 17:
Relationship of Priority Framework To Budget Resources

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POLICY M-2:

The City will maintain basic public services and facilities to meet the needs of its residential, institutional, commercial, and industrial "citizens." Basic public service actions are the City's highest priority.

Priority Group 1:

- Projects that protect the health and safety of citizens. This may include actions to prevent or correct critical breakdowns and to maintain the basic level of municipal services essential to the health and safety of citizens.
- Projects that maintain the City's physical plant, provide access to municipal services, and protect the City's natural resources. This should be limited to actions needed to prevent irreparable damage to the City's natural resources or physical plant, and actions needed to assure access to those municipal services without which the City would be generally unacceptable to its citizens.

Strategic Investments in Opportunity Areas:

Strategic public investments can contribute to a reasonable quality of life among the community and to the goals of population growth and economic and social vitality.

POLICY M-3:

The City will make strategic investments in programs and actions that go beyond basic public services and which contribute to a reasonable quality in the lives of Oak Ridge citizens, to population growth, and to economic and social vitality.

Opportunity and strategic investment projects are defined within Priority Groups 2, 3, and 4 as follows:

Priority Group 2:

- Projects that stimulate and guide commercial and industrial development, generally expand employment opportunities, and improve the economic status of individuals.
- Projects that provide or stimulate new housing opportunities or additions to the City's housing stock.

Priority Group 3:

- Projects that preserve or improve the existing housing stock and/or improve the quality or availability of housing for current City residents.

- Projects that preserve or improve the quality of residential neighborhoods and associated commercial services.

Priority Group 4:

- Projects that protect and/or enhance the attractiveness of the City for residents, institutions, and commercial and industrial "citizens."

Cost-Effectiveness Criteria

After a potential capital project has been classified into one of the four Priority Groups listed above and illustrated by Figure 17, it must be ranked in relation to the other potential projects in its Priority Group. Cost-effectiveness criteria, listed below, are used to do this. Cost-effectiveness is a relationship that expresses how well the City's money is converted into a City objective. Some of these aspects of cost effectiveness may be considered as more important than others for any particular project. A standard ranking form will be developed with which to score each potential project on its cost-effectiveness.

POLICY M-4: The City will take into account the cost-effectiveness of project proposals as well as plan priorities in its decision-making process.

Capital Costs:

Is the project's capital cost necessary and justified in relation to its useful life and to other comparable public and private projects?

- Is the proposal a necessary capital improvement for the City to undertake? Would the proposal's objectives be achieved more appropriately through private action or by another public authority if such action were not taken by the City?
- How well are proposed capital costs justified?
- Is the useful life of the project long enough to justify the capital costs?
- Does the project leverage significant outside funds?
- Will the project achieve its objectives without the need for additional capital expenditures?
- Would delay result in accelerated deterioration of a resource, necessitating a much larger capital cost in the future?

Operating Costs:

Will the project reduce or minimize operating costs as compared with other alternatives?

- What impact will the project have on operating costs?
- Would the project achieve its objectives without the need for additional programs and operating costs?
- Would delay result in an accelerated increase in City operating expenditures?
- Is the project coordinated with other public and private actions in order to minimize the City's operating expenditures?

Effect on the Tax Base:

How will the project effect the City's tax base?

- Will the project reduce or have no effect on the City's tax base? Will it produce some expansion or cause major expansion of the tax base? Is the expected tax base increase significant even if discounted for the time lag and risk involved?
- Will the project stimulate private investment that would not otherwise occur? Would delay greatly reduce the potential for tax base increase due to changing economic or other external factors?
- Will the project put public property back on the tax rolls? Will existing neighborhood properties increase in value as a result of the project?

Packaging:

Is the project packaged with other public or private projects in order to increase effectiveness in achieving the City's objectives?

- Is the project packaging essential in order to achieve City objectives?
- Does the project require or need coordination?
- Does the project reinforce other projects focused on a geographical target area?
- Would its effectiveness be reduced if the implementation of individual projects in the package were not coordinated?

Service Efficiency:

How will the project effect the service efficiency of existing facilities or programs?

- Does the project increase the capacity of existing facilities or programs to serve City residents?
- Is the project needed to capture the benefits of existing facilities or programs?

Commitment:

Does the project represent a commitment to continue ongoing programs or an in-progress project to assure efficiency?

- Is the commitment weak, modest or strong?

Personal Needs:

Does the proposal serve the personal needs of certain segments of the City's population?

- How well does it serve low and moderate income persons?
- How does it benefit the young, aged, minorities, handicapped?
- How well does it serve the community population as a whole?

Area Needs Served:

Does the project serve local, community, or City-wide needs?

- How many people will be served?
- Will the project serve an area of the City receiving less service than other areas with similar needs?
- How does the project match up with the priorities expressed by citizen organizations?

RELATIONSHIP OF THE ANNUAL BUDGET TO THE PLAN

As the Priority Framework indicates, the Comprehensive Plan will become the central guiding document for municipal spending decisions in Oak Ridge. The City Manager will determine his priorities for the year based upon this document. Budget requests which come to the City Manager from the various department heads should be in conformance with these priorities and, thus, the Comprehensive Plan. The Priority Framework should be used to evaluate the draft operating and capital budgets before submitting them to the City Council, Planning Commission, and general public.

POLICY M-5: In order to ensure that the City's operating expenditures effectively contribute to the achievement of the Comprehensive Plan, the City Manager and others involved in the operating budget preparation process will use the priorities expressed in the Oak Ridge Comprehensive Plan as a framework for the formulation and review of the budget.

POLICY M-6: The City Manager and his staff, the Planning Commission, and the City Council will use the Priority Framework to rank projects in the creation and review of the capital budget and six-year capital improvements program.

The City's six-year capital improvements program (CIP) is a key element in carrying out the Comprehensive Plan. The CIP anticipates capital needs and compares them to projected revenues for a six-year period. Expenditures are programmed over a multiple-year period in order to maintain an affordable annual expenditure level.

POLICY M-7: Proposed projects will move up and down in the capital improvements program sequence based on urgency of need related to City policies or on cost-effectiveness criteria related to the timing and coordination of department operations and funding.

The annual capital budget is a one-year statement of capital improvements. When adopted, the City has made a commitment to its listed projects by appropriating funds.

POLICY M-8: In general, all items in the City's annual capital budget should have previously appeared in the City's six-year capital improvements program.

GOVERNMENT STRUCTURE AND OPERATION

The structure of the Oak Ridge municipal government should facilitate optimum general management of the City. It should minimize duplication of services, communication problems, and expense while providing convenient access to citizens and responsive, high-quality services. The elected and appointed bodies (e.g., City Council, Planning Commission, Housing Authority) should be of appropriate size and term of office and have a relationship to their constituents which facilitates communication while allowing each member to represent the broad needs of the city. Similarly, staff departments should be structured according to their duties, not vice-versa.

POLICY M-9: All departments of the City will continue to periodically examine and effect changes in responsibilities or management which would improve productivity, lower costs, enhance service, and further communication with the public.

information over five years old. This is crucial if the plan is to guide the annual preparation of six-year capital improvement programs.

Unforeseen events, such as rapidly changing economic conditions or new federal aid programs or regulations may occur during the planning period. These events sometimes require a rapid reallocation of resources and changes in policies and plans. The normal plan update process and the departments primarily responsible for planning, research, evaluation and monitoring should maintain the flexibility to respond to these events.

In any case, plan amendments should be based on careful analysis of current conditions and events, the City's progress toward its objectives, and evaluation of program effectiveness in achieving those objectives. In addition, long-range planning and the long-range goals of the City should guide the plan amendment process, just as the Comprehensive Plan guides the capital program and budget.

POLICY M-17: The City will periodically review and amend the Comprehensive Plan on a regularly scheduled basis so that each section of the plan is thoroughly updated at least every five years. More frequent reviews and amendments should occur when warranted by the nature of the topic area or by changing conditions.

APPENDICES



APPENDIX A

City of Oak Ridge 1986 - 1991

Capital Improvements Program

(Printed as separate report in 1986, and
1990 - 1995 Capital Improvements Program
printed as separate 148-page report in
1988 - 1989.)

APPENDIX B

Forecast of Oak Ridge Population, Households,
and School Enrollment, 1986 - 2005

FORECAST OF OAK RIDGE POPULATION, HOUSEHOLDS, AND SCHOOL ENROLLMENT, 1986-2005

YEAR	Annual New Jobs	Annual New Job Pop.	Annual Job Capture Rate	ANNUAL NEW JOB POP. CAPTURED	DOE Positions Refilled from		ANNUAL ADD'L D.O.E. POP. CAPTURED	Annual Net		Annual Migration	Rate of Natural Increase	POPULATION INCLUDING ADJUSTMENT		Add'l Pop. Over 1985	Persons per Hshld.	Total Hshlds.	Total Public School Enrollment	Add'l Public School Enrollment Over 1985	YEAR
					Annually	Outside of Region		Annual Potential New DOE Pop.	Net Ind Jobs Lost			Net Other Jobs Lost	FDR						
1985	46	97	39.55%	38	413	9	9	50	15	-6	1.0015	28300	36	2.49	11380	4450	-48	*1985*	
1986	92	194	40.10%	78	412	17	17	50	15	42	1.0015	28336	36	2.487	11394	4330	-72	1986	
1987	138	291	40.65%	118	411	26	26	50	15	91	1.0015	28421	121	2.484	11441	4227	-89	1987	
1988	185	388	41.20%	160	410	35	35	50	15	141	1.0015	28554	254	2.481	11509	4152	-119	1988	
1989	231	485	41.75%	202	409	43	43	50	15	192	1.0015	28738	438	2.478	11597	4042	-143	1989	
1990	231	485	42.30%	205	408	52	52	50	15	203	1.0015	28974	674	2.475	11707	3986	-185	*1990*	
1991	231	485	42.85%	208	407	60	60	50	15	215	1.0015	29221	921	2.472	11821	3985	-186	1991	
1992	231	485	43.40%	210	406	69	69	50	15	226	1.0015	29480	1180	2.469	11940	4006	-177	1992	
1993	231	485	43.95%	213	405	77	77	50	15	237	1.0015	29750	1450	2.466	12084	4011	-176	1993	
1994	231	485	44.50%	216	404	86	86	50	15	248	1.0015	30033	1733	2.463	12193	4051	-160	1994	
1995	277	581	45.05%	262	403	94	94	50	15	303	1.0016	30326	2026	2.46	12328	4122	-131	*1995*	
1996	277	581	45.60%	265	402	103	103	50	15	315	1.0017	30678	2378	2.457	12486	4185	-106	1996	
1997	277	581	46.15%	268	401	111	111	50	15	326	1.0018	31045	2745	2.454	12651	4251	-89	1997	
1998	277	581	46.70%	272	400	120	120	50	15	338	1.0019	31428	3128	2.451	12823	4320	-52	1998	
1999	277	581	47.25%	275	399	128	128	50	15	349	1.002	31826	3526	2.448	13001	4391	-24	1999	
2000	277	581	47.80%	278	398	136	136	50	15	361	1.0021	32240	3940	2.445	13188	4465	6	*2000*	
2001	277	581	48.35%	281	397	145	145	50	15	373	1.0022	32670	4370	2.442	13378	4542	37	2001	
2002	277	581	48.90%	284	396	153	153	50	15	384	1.0023	33115	4815	2.439	13577	4622	69	2002	
2003	277	581	49.45%	288	395	161	161	50	15	396	1.0024	33576	5276	2.436	13783	4704	102	2003	
2004	277	581	50.00%	291	394	169	169	50	15	407	1.0025	34053	5753	2.433	13996	4789	136	2004	
2005	277	581			394	169	169	50	15	407	1.0025	34546	6246	2.43	14216	4877	171	*2005*	
TOTALS	4615	9892		4411	8070	16948	1793	1000	300	5140									

School Enrollment Forecast Procedures:
o 1986-1995:

1. Calculate net enrollment change: OR Schools' projected net change + (annual add'l. hshlds. x 0.5)
 2. Add result to previous year's enrollment to get revised enrollment.
 3. Subtract enrollment from 1985 enrollment and split 40/60 between K-5 and 6-12.
- o 1996-2005:
1. Assume K entries equal graduations.
 2. Assume 0.4 students/new household.

Preceding year's population plus annual net migration x rate of natural increase

Col.5
+Col.9
-Col.13
Col.15

Net ind jobs lost x 0.3
Jobs:Pop 1:2.1
Capture rate= 39%

2.0% of Contractor Positions Open Annually.
DOE/ Contractor employment declines from 20,651 to 19651

Ratio of jobs to pop. = 1:2.1
Marginal jobs to capture rate = 1:2.1 increases by 1% per year.