

SURVIVAL IN THE TULSA MOUNTAINS: A STUDY
OF THE ADAPTIVE IMPERATIVE
IN HUMAN ECOLOGY

By

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CHAPTER I

NATURE OF THE PROBLEM

Introduction

Throughout history, the process of human adaptation has been recorded with a legacy of a life and death struggle. For primitive man, adaptation meant a daily fight to live. Survival and adaptation were synonymous. Food, clothing and shelter, the basic requisites of life were the sometimes bloody rewards of a constant battle with the elements, animals and other men. Existence was continued or ended in the brutal arena which Charles Darwin calls "the survival of the fittest." With evolution, man has adapted to an everchanging ecosystem by responding to an instinctual need to survive. In this paper, this basic need is referred to as the adaptive imperative.

A descriptive saga of the adaptive imperative can be outlined in the following scenario. On an evening years ago, a man crouching on a high knoll overlooking a dusky meadow, intently watched an ape-like form in the distance. Another male, an intruder, lumbered toward him. Tensed, eyes piercing the darkening twilight, the man launched a blood-curtling scream out on to the meadow. Answering back, the intruder roared his defiance. The man picking up a large branch in the dirt near him began descending the knoll toward the intruder.

In the moments that followed, the man and the intruder would be

locked in a struggle for dominance. Should the intruder defeat the man, the meadow would feel the feet of a new conquerer. In the vignette, basic adaptive processes of invasion, competition, dominance and succession are illustrated. It is through these basic ecological processes that the adaptive imperative is manifested and is transferred from an instinctual urge to overt acts.

Of primary interest to the human ecologist are the collective manifestations of the adaptive imperative expressed in the basic ecological processes such as competition, and succession which have increased man's ability to survive in the ecosystem. These primitive collective manifestations were man's early attempts with technology. They include, for example, the development of fire as a tool, the practice of animal husbandry, deforestation, and large scale agriculture. These technological accomplishments were significant. In addition, social organization also affected basic ecological processes in the process of adaptation. This early social organization evolved from the emergence of the human settlement.

A settlement or community denoted a "community of interest." That is, people within a community tended to have shared values. Additionally, a community increased man's ability to dominate specific areas of land. Territoriality represented man's capacity to lay claim and defend an area of land. From the earliest human settlements, social organization has enabled man to use the resource of shared social values to influence the adaptive process within the territory of the community.

The evolution of social organization from "loose collectivities" of primitive man to the "institutionalization" of modern society has

influenced the process of adaptation. Industrialization and urbanization precipitated from technological achievement have taken adaptation out of the brutal arena and into the market place. Adaptation and survival are not synonymous. Survival is no longer a daily fight to live. For example, institutional social welfare nearly guarantees survival. Adaptation is now primarily a measure of the quality of life.

Even though invention and social organization have insulated man in a semi-protective cocoon of technological society, the premise of this study is that the battle remains the same. Man must adapt to ever-changing conditions attempting once and for all to satiate a basic need to survive. Therefore, modern social adaptation appears to be relatively the same process with technological man as was with primitive man.

Statement of the Problem

The purpose of the study is to examine the process of modern social adaptation. This study will suggest that modern man, insulated by technology and social organization, collectively manifests an adaptive imperative in order to survive in the ecosystem in essentially the same manner as primitive man. In order to operationalize this premise, a community planning and development program in Tulsa, Oklahoma, will serve as an example of a collective manifestation of the adaptive imperative. The community planning program is District Nine, Vision 2000 Urban Growth Guidance System. The Vision 2000 Urban Growth Guidance System is a comprehensive urban development program dividing Tulsa county into twenty-five planning districts. The responsibility of each planning district is to form a District Planning Team which will

evaluate the current growth status of the district and to propose general and specific guidelines and policies for the development of the district through the year 2000 (Tulsa Metropolitan Area Planning Commission, 1976).

Urban Planning: The City of Tulsa

Historically the city of Tulsa was formed in a Land Rush and achieved its original growth as an oil boom town. City fathers, however, decided to make a major public commitment to diversify Tulsa's economy and consolidate efforts toward progress and survival. It was also their wish to preserve Tulsa's picturesque location on the bluffs over a bend in the Arkansas River. Thus, growth planning was in the minds of the early settlers and a program was developed in the late 1950's to channel inevitable urban change. This program was called "A Plan For Central Tulsa."

The City of Tulsa undertook several programs to accomplish this goal:

- (1) Established an urban renewal authority
- (2) Designed an Inner Dispersal Transportation Loop
- (3) Designed a 12-block Civic Center
- (4) Established guidelines for a green belt
- (5) Developed future plans for a river parks project.

"A Plan For Central Tulsa" was presented publicly on November 2, 1959, after more than a year of data gathering, citizen participation sessions and other interim reports. The plan attempted to make good use of existing facilities and conditions, projected what types of facilities would be needed and what conditions might develop during the long and

arduous implementation period, and was designed to include the people of Tulsa in the plan, approximately seventy-five businesses, individuals and groups provided more than half of the \$100,000 needed to finance the year-long study that preceeded the Plan. The Central Business District Master Plan Committee Advisory Board, the Tulsa City Commission, the Tulsa County Commission and the Tulsa Metropolitan Area Planning Commission participated in the project.

Vision 2000: Growth Guidance Program

Vision 2000 Growth Guidance Program is a continuation of the urban planning program, "A Plan For Central Tulsa." Since 1960, the Plan has been the efficient guide for the physical development for the city, the county and other outlying areas near the urban area. It allows maximum citizen input to determine growth guidelines. Developed as the statement of policy in the use of land and the provision of public facilities and services until 1975, the Plan was revised and updated in 1970.

The District Nine Plan

The District Nine Plan includes proposed policies for the growth guidance for that part of Tulsa which is bound by the Arkansas River on the North and East, the Skelly Bypass and the Tulsa County line on the South, and South 65th West Avenue on the West. The District Nine plan is a preliminary inventory of the essential developments needed to update the original "Plan For Central Tulsa." Figure 1 details the comprehensive planning districts of Vision 2000 including District Nine.

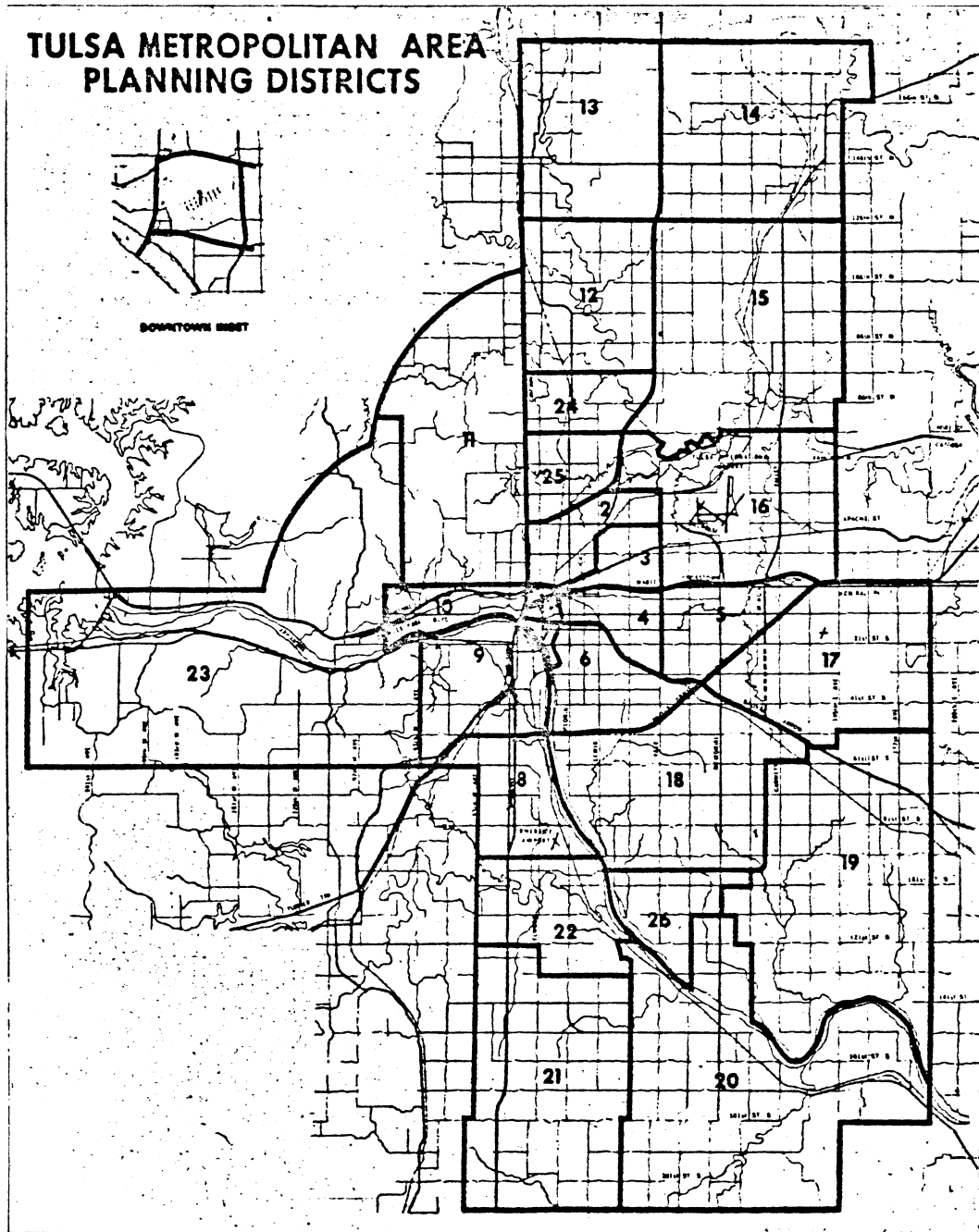


Figure 1. Tulsa Metropolitan Area Planning Commission,
Vision 2000 Comprehensive Planning Districts

Definition of Terms

District Nine People - these people include residents of the district property owners who may not reside in the district, and workers within the district who may not reside there.

Community Development - the process by which undeveloped tracts of land are "improved" through construction or use of any type.

Community Planning - a process involving the municipal government and city residents in which a general set of criteria for future city development is established in the form of a plan or model.

Community Residents - people who reside within the geographical boundaries of District Nine.

Adaptive Imperative - an innate human drive which urges people to survive through adaptation.

Social Impact Assessment - a process of assessing the effects and impacts of proposed interventions at the neighborhood scale.

Human Ecology - the study of the adaptation of homo sapiens to the environment.

Adaptation - a process in which people survive by modifying their behavior according to environmental changes which will enhance the probability of their living rather than dying.

Conclusion

The premise of this study is that modern social adaptation is essentially the same ecological phenomenon as was the social adaptation of primitive man. Historically, man's social development has involved collective manifestations of an instinctual urge to survive, the adaptive imperative. This study will evaluate modern social adaptation

in terms of urban growth guidance systems and will suggest that urban growth guidance is essentially the same adaptive ecological phenomenon as adaptive processes used by primitive man.

Chapter II examines the theory of human adaptation. Topics include the adaptive imperative, modern social adaptation and human ecology. Chapter III outlines the scientific method of inquiry to demonstrate the study premise. Chapter IV, V and VI present the data. Chapter VII draws summaries and conclusions concerning the study premise in light of the data.

CHAPTER II

THEORETICAL NEXUS AND REVIEW OF LITERATURE

Introduction

The literature review for this study begins in the field of human ecology. Ecology embraces the total nature of the study of man and the environment. Human ecology, moreover, delimits ecology to the study of man in a collectivity adapting to the environment. One of the basic processes of human ecology is adaptation. Adaptation is a critical process in the struggle for survival. Since the essence of this research focuses on survival, adaptation provides a conceptual foundation on which to build a theoretical backdrop of ecology.

The Adaptative Imperative

Generally, since people tend to survive in various forms of social organization, it can be said that man is an adaptive creature. That is, within a plethora of social situations, people adapt to their environment and therefore live rather than die. There are, of course, situations in which people may choose not to adapt. But usually people adapt to most situations. It may be argued that people possess an innate, instinctual and inborn need to survive which drives them to adapt to a continual onslaught of social situations. People force themselves to live even though, occasionally for brief moments they may wish to die.

Thus, for the purposes of this paper, an innate human need to survive will be assumed and termed the adaptive imperative.

Adaptation

Bennett (1973:224) describes adaptation in this way:

The inherent vagueness of this term, when applied to human behavior must be acknowledged at the outset. The phrase, "man adapts" can mean: (a) tolerance of existing conditions; (b) adjustments to changed conditions; (c) long-term evolutionary change. Thus, the same term can refer to conformity or to innovation; to minor adjustments or to maximal alterations; to purposive action or unconscious drift.

Thus, human adaptation can refer to several social situations. It may refer to a growth or a no-growth situation depending upon the specific social values of those affected as well as guidelines and restrictions placed upon those adapting by the greater whole or society.

Adaptation can be made in response to changes both real and perceptual. That is, adaptation can occur to changes in the wants and wishes of people; or it can occur in relation to changes in the environmental milieu of those affected. Adaptation can occur in response to action behavior or in response to perceptual desires.

Human Ecology

Speaking of human ecology, McKenzie (1926:30) states,

In the struggle for existence in human groups, social organization accommodates itself to the spatial and sustenance relationships existing among the occupants of any geographical area.

Inherent in McKenzie's statement appears to be the central point that people struggle with one another primarily through social groupings

within the physical confines of a given geographical area. The importance of the statement reflects the key ingredients of human ecology. That is, social relationships as they are formed, continued, changed and terminated usually occur between and among people who have a physical proximity to one another. And the environment, or physical proximity, plays an important part in affecting the quality of the social relations which are interacted within its boundaries. Thus, the fundamental formula implied is people plus social relationship plus environment, equals human ecology. Since human ecology is a product of the general study of ecology, people serve as one of the primary ingredients in the scientific formula. Quinn (1961:139) writes:

The most basic abstraction of the field of human ecology is that of ecological interactions Ecological interaction underlies many aspects of community life. Merchants who want strategic commercial sites at the heart of the city compete for the limited supply of land in this location. Urban residents who wish homes in locations where they can best satisfy their needs bid for the limited supply of residential space available there. Successful job hunters in given industries crowd less fortunate applicants into other occupations or into unemployment. Ecological interaction--wherein influence the limited supplies of land resources, and jobs upon which other men depend--underlies the basic spatial and functional structure of modern American communities

Micklin (1973:9) puts it this way:

The central argument of the present conceptualization of human ecology is that the key to understanding ecological relationships is social organization, which stands in direct relationship to both populations and their environments and moreover, serves to mediate relationships between the two.

Micklin (1973) indicates that the central problem in ecological analysis concerns the issue of how populations cope with environmental conditions; individually and collectively, in the course of existing materially and socially.

In general, human ecologists study the collective manner in which

people adapt to their environment.

Park (1961:23) states:

Within the limits of this system, the individual units of the population are involved in a process of competitive cooperation, which has given to their interrelations the character of a natural economy. To such a habitat and its inhabitants--whether plant, animal, or human - the ecologists have applied the term community.

Thus, according to Park (1961) the essential characteristics of a community are a group of people within a given geographical area living according to the cultural system of the group.

In addition, Park indicates that adaptation is a process of competition, dominance and succession. In terms of community development, Park (1961:25) mentions, "The struggle of industries and commercial institutions for a strategic location determines in the long run the main outlines of the urban community."

According to Wirth, ecological studies have focused on territorial social phenomena. Thus, the community has become an integral conceptual part of human ecology.

Warren (1972:6) states that the community "relates to the shared interests and behavior patterns which people have by virtue of their common locality."

Generally, the literature supports a process whereby people gather in collectivities and adapt to their general environmental surroundings through ecological processes of competitive cooperation, dominance and succession.

Community Planning and Development

From an adaptive perspective, conflicts often arise between and among people as they attempt to exercise their social values upon the

development of the territory or environment in which they exist.

Speaking of the adaptive conflict, Duncan (1973:6) states:

Since most environmental and demographic situations permit alternative solutions to the problems of adaptation and since such solutions have a tendency to persist as they are embodied in organizational forms and technical apparatus, initial differences tend to produce continuing diversification.

Generally, the organizational form to which Duncan alludes in a modern technological society is a community development or community planning effort.

Ross (1967) suggests that planning represents an act consisting of a continuous of action from thought process, to overt manifestation. Planning represents more than solution in the context of a social situation.

Warren (1972) delineates the process of decision-making in terms of community planning. In theory, decisions about changes in the ecosystem should be made by those who are directly affected by them. However, in modern society many of the decisions which are made are delegated to a person or persons who have the skills to make those decisions better than those directly affected. Also, decision-making involves prerogative. That is, there are those people who are more affected than others or who have a greater right, morally, legally or socially to make such decisions. Thus, the problem of who shall make decisions in community planning is a difficult one at best and involves a complex set of circumstances and considerations.

Technology

Traditionally, community development has involved an interaction between society and technology. Ross (1967) states that "technological

development is merely the manifestation of a particular ideology." Technology has been usually interpreted as a positive addition to a community. But, lately in the 1960's and 1970's, the relationship between society and technology seems to have changed.

Koenigsberg (1968) notes that regional planning should include a careful use of land, water and air. It should also include an avoidance of waste.

Several generations of people have been acculturated to the ideas that technological change is positive and therefore should be uncontested. This notion has led Mumford (1968) to write about his concern for a de-emphasis upon socio-economic considerations of urban study and to place more emphasis upon architecture and history. That is, he contends that studies of urban conditions do not question the motives behind the social, technological and economic changes which have occurred. Mumford believes that urban areas can be influenced to meet new changing needs of the people in the cities rather than appease the wants and desires of those whose motives are power, wealth and prestige.

Mumford believes that twentieth-century planning is dominated by power and profit. Therefore, it does not include a fresh multi-dimensional image of the city. It includes the notion that technology has produced a society of systematized role-playing automatons who have no control over their destiny and little control over themselves. The end-products are automatons plagued by nervous tensions, violence, crime, health-depleting sedatives, tranquilizers and atmospheric poisons.

In response to this apparent lack of self-respect and integrity of community development, Mumford (1968:15) offers a plan for change: "The

answer to the problems of human organization and human control will not come from computers: the answers will come from men."

Moreover, the writing of Mumford seems to reflect a growing sentiment within American society. The unanticipated consequences which have arisen from a rapid and uncontrolled urbanization in the form of a myriad of social problems are stimulating people to attempt to influence the future growth of their community. Values not totally related to considerations of money, power and prestige are beginning to influence community planning and development. Inherent in this change appears to be a concern for preserving the status quo and protecting the environment by keeping it intact for the enjoyment of future generations. Consequently, the field of land use planning has become extremely popular and is beginning to play an active and vital role in urban growth programs.

Land Use Planning

A question which has gained more significance as an advancing technology requires more physical space, is the question of land use. In the adaptive process, how can people more effectively use the land about which they live to enhance the probability of a more comfortable and pleasing survival level?

Caldwell (1973) indicates that civilization expresses itself through the use of technology. By continually depleting the earth's resources civilization continues to deteriorate. Evidence from Central Asia and the Middle East suggests that our world is in the midst of a growing environmental problem or crisis. However, some technologists are claiming that the environment can be ignored in its evolved form. Man can will create his own environment. Man can recreate the land to

suit his desires, wants and needs. Values, therefore, will play an increasingly important part of the planning process as people's physical environment is rebuilt to suit the needs of those who have the power to change it. It is at this point when the adaptive process comes to rest in a concrete argument such as land use that the function of social values affecting survival becomes clear.

Lyman and Scott (1971:109) discuss territoriality and territorial conflict:

We can distinguish three forms of territorial encroachment: violation, invasion, and contamination. Violation of a territory occurs when those not entitled to entrance or use nevertheless cross the boundaries and interrupt, halt, take over, or change the social meaning of a territory. Such invasions then may be temporary or enduring Contamination of a territory requires that it be rendered impure with respect to its definition and usage.

The question of land use raises some of the most bitter controversy involving social values relating to technological expansion.

Krutilla (1973) reports that although the preservation of natural resources has been espoused by influential and eloquent advocates, the assault upon America's resources and wilderness including the erosion of the environment continues.

In defense of technological growth Krutilla (1973) states that the extractive processes which have depleted the natural resources of the environment are the very tools which has promoted the growth of the national economy and have contributed significantly to the overall well-being of man and human society. Without utilization of natural resources, a modern industrial nation could not have developed.

Consequently, the literature reveals a dichotomy between "capitalistic" entrepreneurs who wish to continue to develop the environment within economic motive and those people who wish to preserve the

environment intact for whatever personal objectives they may have.

Krutilla (1973) points out that there are no economic incentives for developers to preserve parts of the environment rather than destroy it. Those people who wish to preserve an environmental area should be willing to compensate land owners and developers or provide a positive incentive for land owners and developers to develop the natural environment in ways which would preserve its essential integrity. An aesthetically attractive natural environment may be the most beneficial gift the present population can leave future generations.

In conclusion, there seems to be a great land use struggle which is reflected in the literature. The struggle is between the people whose social values are deeply rooted in capitalism, i.e., the rights of private ownership of property and an importance of the economic motif. Conversely, there are people whose social values lead them to believe that the preservation of the environment and the benefits which are derived from natural landscapes are more valuable aesthetically than economically.

Caldwell (1973) writes that the outlook of life affecting attitudes, values and behaviors of future generations must be influenced in such a way that political institutions which derive direction from these attitudes and values will behave consistently with the preservation of natural resources.

Currently, a growing concern for natural resources has become manifested in the requirement of an environmental impact assessment for proposed development by governmental agencies and private industry.

Commoner (1970:119) indicates:

One of our most urgent needs is to establish within the scientific community some means of estimating and reporting

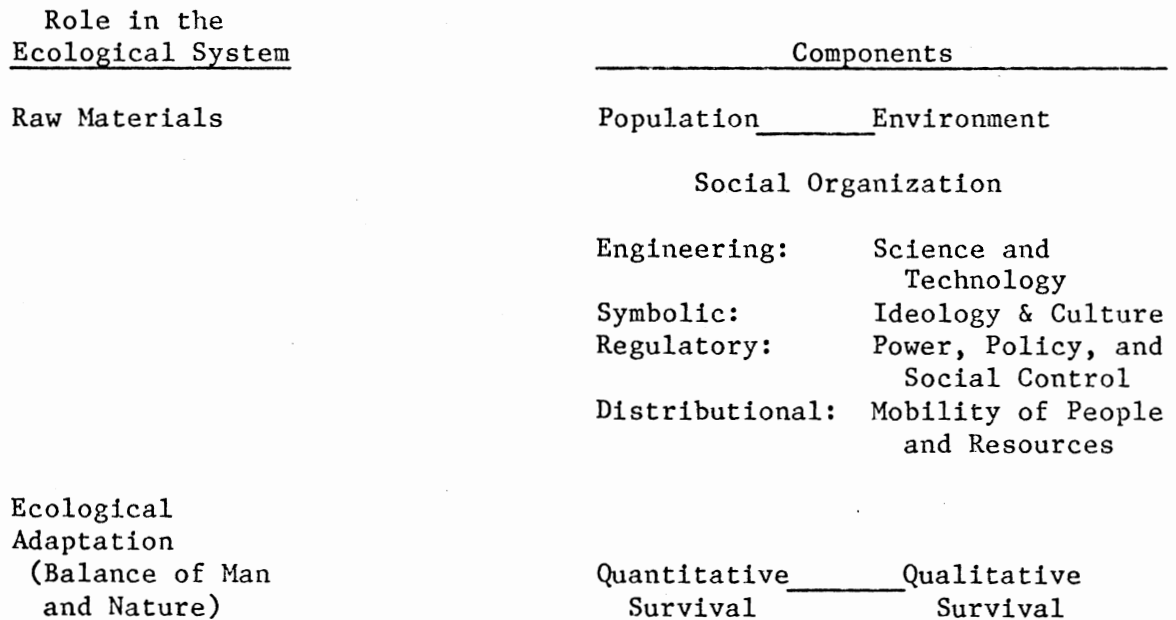
on the expected benefits and hazards of proposed environmental interventions in advance.

Commoner (1970) further indicates that one of the most urgent needs of American society is to develop criteria, tests and other measuring and estimating methods whereby the scientific community can estimate and report the expected benefits and hazards of proposed environmental interventions in advance of their implementation and fruition.

Human Ecological System

The literature review on the human ecology system is summarized in the following conceptual model. The human ecological system, Micklin (1973:6-13), is depicted in Figure 2. In this model, three components comprise the human ecological system: (1) the raw materials, (2) the mechanisms of organizational adaptation, and (3) the levels of ecological adaptation. The first component of the human ecological system, raw materials, consists of population, environment and social organization. Raw materials consist of processes of fertility, mortality and migration, and the structural features of population composition, i.e., age, sex, marital status, race, occupation and other demographic variables. The combination of these ingredients, plus population distribution forms the final feature of the system, population size.

Micklin further outlines raw materials by dividing the environment into human and non-human components. The human component consists of peoples and societies. The non-human component is divided into natural and man-made phenomena. Elements such as space, heat energy, etc. are natural. Man-made environment consists of man's living space and all the things contained therein, i.e., buildings, highways, automobiles, etc.



Source: Micklin, Michael. Population, Environment, and Social Organization. Hinsdale, Illinois: The Dryden Press, 1973:8.

Figure 2. Relationships among Components of the Human Ecological System

Another component of the human ecological system is social organization. Social organization is considered to be the process of "merging social actors into ordered ideas" (Micklin:1973:8). The various structures of social organization consist of positions, roles, groups, institutions, etc. Processes within social organization are represented by activities and patterns of social interaction, the dynamic elements of organized human conduct.

Within Micklin's model, there are four mechanisms of adaptation, engineering, symbolic, regulatory and distributional. For this study, these mechanisms go beyond the scope of the study. The study is interested in studying the basis of the human ecological system and creating a data base whereby the levels of ecological adaptation. Micklin's third component, may be evaluated at a later date and in light of specific development alternatives.

The third component of the human ecological system consists of levels of ecological adaptation. Micklin (1973:12) indicates. "This concept represents the various outcomes of the influence of the adaptive mechanisms on population and environment phenomena." There are three levels of ecological adaptation: quantitative, qualitative, and the overall balance between population and environment. Micklin (1973:12-13) discusses these levels:

Issues of quantitative survival with respect to population, then, deal with such matters as how many people are living at a given time, how rapidly their numbers are increasing over time, how frequently they are reproducing, how many are dying during a given time interval, and how long members of the population may be expected to live

Micklin indicates that modern society has tended to broaden the meaning of population quality to convey a concern with the overall quality of life as it is influenced by quantitative factors. With this

perspective problems such as health, housing, education, family life, etc. become important evaluative criteria in determining the quality of life in a community or other territorial grouping.

The overall balance between population and environment becomes paramount when discussed in light of renewable versus non-renewable resources. There have been pessimistic predictions which stem from concern of whether the supply of resources necessary for sustaining the human population is available in sufficient quantity. But these pessimistic arguments have been confounded by concern that the qualitative aspect of the environment, i.e., water pollution, air pollution, etc. is creating more of a problem to the sustenance of the human population than quantitative concerns. Thus, a concern for the preservation of the environment has been born, fostered, and has now become a primary consideration when evaluating survival and existence.

The importance of this model is that by studying population, environment and social organization, statements concerning quantitative and qualitative survival can be made. These conclusions or statements about survival reflect upon the process of modern social adaptation. Although survival and adaptation may not be synonymous in modern complex society, there is still a strong relationship between the two concepts. Man must ultimately survive or live to continue to adapt. Further, the quality and quantity of survival bear a direct result upon the type of successful or unsuccessful adaptation which man accomplishes.

CHAPTER III

METHODOLOGY

Introduction

The social impact assessment is used to determine the beneficial and/or adverse effects of proposed development alternatives for a community of people. The assessment method of measurement allows the inventory of existing social circumstances to serve as base data to forecast future effects upon the natural and social environment of changes in land use. This research employs the social impact assessment to study parts of the human ecological system. The base study will include base data from which to forecast ecological effects. The base data generated focus upon the people and social organization of the target community. The base study serves as a measuring rod to evaluate survival quantitatively and qualitatively. In turn, survival illuminates the process of modern social adaptation.

The research focuses upon two of the three basic components of the human ecological system, the people and the social organization. The third component, the environment, is important; but the data on the environment of District Nine, the target group of the study can be found in other reports. This study seeks to evaluate an inventory data concerning the people and social organization of District Nine. The data can form base data whereby future development alternatives for District Nine may be evaluated and the beneficial and/or adverse effects

can be predicted. Scrutiny of modern social adaptation must first begin with an inventory of the status quo or a data base upon which hypotheses concerning adaptation can be formulated.

Modern social adaptation suggests that modern man, like primitive man, adapts to everchanging situations through collective manifestations of an instinctual urge to survive, the adaptive imperative. The adaptive imperative is an assumed inherent human characteristic. With this as a given, the task is to inventory the two components of the human ecological system, the people and the social organization, thereby forming a data base upon which to evaluate future development alternatives for the community in the study.

By reviewing the literature on adaptation, the theoretical perspective is enhanced with the foreknowledge that technology and social organization have influenced social adaptation. Community planning and development as well as land use planning are modern institutional manifestations of the adaptive imperative. Through the formation of a data base on District Nine in terms of the population and social organization, the process of modern social adaptation is illuminated and modern collective manifestations of the adaptive imperative are discussed in terms of community planning and development.

The social impact assessment is a popular methodological procedure for research projects conducted by social scientists, urban planners and those officials charged with the responsibility of organizing and implementing community development and planning programs.

The Social Impact Assessment

The social impact assessment can be divided into two components,

the base study and the forecast. Early methodological procedures for social impact assessments usually involved some version of cost benefit analysis, a procedure used from economics. Finsterbusch notes that the economists' approach is that they cannot satisfactorily assess social impacts because (1) they cannot always be measured in money; (2) the impact varies from one group to another; (3) those who are benefited may not incur the costs, and (4) there is often a time lag in receiving benefits (Finsterbusch et al., [1977:43]). Here the social impact study must be expanded to reflect citizens' concerns with specific aspects of the social effects of planning. It is particularly necessary in such assessments to consider the quality of life of the individual, the social well-being of communities, and the feeling of fairness (Fitzimmons et al., 1975:5).

Research Designs

Modern social adaptation is a dynamic process in which individuals and/or groups within the community attempt to implement community development plans which will impact the District in such a way as to maximize beneficial effects toward those whose plan is ultimately implemented. In this manner, the individuals and/or groups answer an instinctual "call" to survive through social adaptation. As stated previously, people attempt to satiate a basic need of adaptive survival. They respond to an innate drive to live which this study labels the "adaptive imperative." Oftentimes, however, development plans are implemented in the exact form in which they were presented. Thus, those individuals and/or groups who struggle with one another using weapons such as power, money, political influence, status, community support, to

1. Process	Sequence of related acts over time
2. Assessment	Identification and prediction
3. Effects	Changes expected
4. Proposed intervention	Buildings, services, policies, plans
5. Neighborhood scale	For people directly affected, then for extra-neighborhood effects.

Source: Stephen J. Fitzsimmons, Lorrie I. Stuart, Peter C. Wolff.
Social Assessment Manual. Cambridge, Mass.: ABT Associates,
Inc., July 1975.

Figure 3. Makeup of the Social Impact Assessment

implement a compromised plan which will impact them with minimum adverse effects and maximum beneficial effects.

This process is known as effect "trade offs" among groups (Fitzsimmons et al., 1975). It is at this primitive level of modern social adaptation that the struggle for survival becomes paramount and most readily accessible for scientific study. Although no specific plans for District Nine have been proposed, the task of the District Nine Planning Team is to create base data to be used to evaluate future development alternatives. This study is intended to be a supplement to the District Nine Report. By participating in the data gathering phase of the planning process, the process of modern social adaptation can be studied from the beginning of the planning program. Later studies may utilize the data in this study and the District Nine Report to study adaptation longitudinally. It will provide base data whereby future development alternatives for the District can be evaluated. The base data reflects the population and social organization of District Nine, two of the components of the human ecological system.

Stages of Data Collection

The body of the research, the base study, consists of data collected from District Nine in three stages: historical information, a social profile of the District, and an analysis of community characteristics and lifestyle. A historical analysis of District Nine reflects why the community exists as it presently does. It gives a continuity to analysis of present-day characteristics and predictions of future trends. It also contributes to the data base for evaluating social impacts in terms of beneficial and/or adverse effects.

The social profile of the community contains most of the data base study reflecting current status of population, environment and social organization attributes.

Data Sources

Data sources in this study include:

1. Records - census, library, public school records, town records, county archives, surveyor's notes, Corps of Engineers, state and regional documents, Chamber of Commerce, Indian Nations Council of Governments Planning Commission, staff data, police records, town library collections, newspapers, local historical documents, special studies, family histories and biographies, directories, maps, anniversary addresses and local church and fraternal organization records.
2. Interviews - only those landowners were interviewed who were actively taking part in the District Nine dispute. This sample represented 92 percent of the land on Lookout Mountain.
3. Questionnaire, Appendix administered to District Nine residents. Pursuant to the objectives of the base study stage of the social impact assessment a structured questionnaire was used as the primary data collection instrument. To recapitulate, the base study objectives are: (1) to gather data from various sources evaluating the residents of the District Nine area of Tulsa, Oklahoma, and (2) to display the characteristics of the District Nine residents in such a manner that forecasts may be developed to analyze different District development proposals.

The sample population of 4115 households was comprised from a list

of registered voters whose residence was located in the District Nine area of Tulsa. This list was obtained from the Tulsa County Election Board.

The questionnaire was designed to be self administered. The scaling methods employed were categorical rating, comparative ranking, and summated scaling.

A systematic sampling technique was employed because of its simplicity and flexibility. In this approach, every Nth element in the population is included in the sample beginning a random start with an element from one to N. Implementation of the systematic sampling design requires the determination of: (1) the total number of households in the file, (2) the sampling ratio to be used, and (3) the random start at which to begin drawing a sample.

To avoid uniform or unvarying tendencies, the population was randomized before the sampling process in order to minimize any monotonic trends.

Cross tabulation and reporting percentages were used as the primary elements of statistical analysis in the District Nine Survey Questionnaire.

Population to be Studied

The population that was studied were registered voters whose residency was located in the District Nine area of Tulsa. Since voters are not classified by the districts where they reside the precincts that are located within the District Nine area had to be defined. The following precincts were identified: 803, 802, 188, 186, 185, 184, 183, 182, and number 181. In total, there were 4115 households with

registered voters.

Sample Selection Procedures

The probability sampling technique used to distribute District Nine survey Questionnaire is a systematic sampling method. In this approach, every 5th element in the population was included in the sampling beginning a random start with an element from one to five. This particular research study began with the 5th element, or respondent, in the file and continued the systematic sampling process by including every 5th respondent thereafter until the file was exhausted. This procedure limited the number of questionnaires to approximately 800 which was desirable because of time and financial considerations.

A computer was used as the mode of randomizing and systematic printing out the list of households that are domiciled in the District Nine area of Tulsa.

Data Collection Procedures

A structured questionnaire, designed by the author, was used as the primary data collection instrument. In several mailings, the survey questionnaire was mailed to approximately 800 households in the District Nine area of Tulsa.

Some advantages of the mail survey are its low cost, better access to those persons who are difficult to reach, ability to produce more accurate responses, and the anonymity that is provided through its impersonal nature.

A cover letter (Appendix) accompanied the questionnaire and introduced the respondents to the survey instrument. After the introduction,

the purpose and justification of the survey was set forth. These respondents were asked to fill out a questionnaire pertaining to certain experiences, attitudes, evaluations, and preferences relating to the District Nine residents. The respondent was urged to complete and return the questionnaire immediately.

It was also noted in the cover letter that the results of the study would give the research team information related to general neighborhood information, natural hazard attitudes and experiences, industrial development, residential development, political affairs, and demographic composition of the area. Pretesting of the questionnaire concluded that it would take approximately 12 minutes to complete the survey. Anonymity was stressed in the survey, as well as sincere thanks for the respondents' cooperation. The cover letter was signed by the director, also the author, and his assistant and stressed the importance of the research project. See Appendix for a sample of the cover letter and the questionnaire. Approximately 300 questionnaires were returned. After eliminating incompletes, the final number was 276.

Instrumentation

Scaling can generally be defined as a procedure for the assignment of numbers (or other symbols) to a property of objects in order to impart some of the characteristics of numbers to the properties in question.

Categorical (rating) scales were the response forms used when a respondent scores some object without reference to other objects. This type of scaling technique was used in the survey in questions requiring the ranking of the most serious problems in the neighborhood and the

most important factors when choosing a new place to live in the Tulsa area.

Using a Likert scale, the respondent was asked to respond to a question in terms of five degrees of opinion. An example of this would be the strongly agree and strongly disagree questions.

Methods of Analysis

Cross tabulation was one method of analysis used in this study. This method of analysis follows a reporting of findings format which presents the percentages of how respondents answered various questions.

A second statistical method of data analysis is path analysis. Path analysis applied an arbitrary and apparently logical set of relations among a group of variables to measure the precise level of influence from one variable to another in a single direction toward the dependent variable. The analyst can place any variable in any position considered logical. The individual path coefficient measures the unique effect of one variable on the next, excluding the indirect effects operating from the relation of a causal variable with other variables in the set. The path coefficient is the standardized regression coefficient indicating the amount of direct effect of the causal variable on the dependent variable.

In order to more clearly focus upon the adaptive imperative embedded in ecological adaptation processes, a scale for Amount of Community Action was constructed from questionnaire items. In this study, Amount of Community Action is the dependent variable upon which the effects of other variables are measured. Two intervening variables, (1) Attitude to Community; and (2) Attitude to Development were scaled

from questionnaire items. Lastly, two causal "exogenous" variables (1) Years of Education; and (2) Years of Age were utilized to evaluate their combined effects upon the dependent variable.

The intervening variables and exogenous variables are employed to suggest influential variables upon community action. Community action allows hypotheses to be generated concerning basic ecological processes discussed earlier. The following is a listing of questionnaire items by scale:

Scale	Questionnaire Items
1. Amount of Community Action	1,2,6,10,31
2. Attitude to Community	3,7,8,12-15
3. Attitude to Development	11,16-27
4. Years of Education	32
5. Years of Age	28

Limitations of the Study

According to the literature, many social impact assessments have been too narrow in perspective. In some cases, the unanticipated consequences of development plans have been severe (Fitzsimmons et al., 1975:44). Consequently, the question is raised as to whether it is best to seek a broad perspective of social impact; or continue the study to an in depth assessment of a pre-selected number of social indicators. For the purposes of this study, although there may be a lack of depth of some indicators, a broad orientation was used to gain an overall perspective of range of social impacts at various levels. If a particular plan implementation has significant social effects at specific levels, then this study should identify a number of those effects.

Lastly, factors such as time, money, availability of data sources, lack of data, cooperation of research participants and other factors have contributed to the success of this study. In spite of all the potential problems, the data in this study were collected with a great and careful concern for authenticity, validity and reliability.

CHAPTER IV

HISTORICAL DATA FOR TULSA DISTRICT NINE

The primary emphasis is upon people, their attitudes, values and behavior.

Historical Information

Basic Facts

District Nine is comprised of residence, undeveloped hills and wooded valleys and heavy industry. Its development has been unique to the City of Tulsa. The private residences and commercial development are contained primarily in the communities of West Tulsa, Red Fork and Berryhill. People who live in District Nine are proud of their community and often refer to themselves as "West-Siders" or "West Tulsa." The combined communities publish a weekly newspaper containing media events which either happened within the west-side community or pertain directly to west-side businesses, civic organizations and schools. In terms of physical development, there is a distinct demarkation of city-county services on the west bank. Services not offered to the communities of Red Fork and Berryhill for instance include city sewer services, proper streets, fire department services, adequate police protection, consistent electric service and uniform natural gas service. Although these services have improved markedly in the last few years, many residents of Red Fork and Berryhill use septic tanks for sewer, use propane

tanks rather than natural gas, have gravel and asphalt streets with no curb, and experienced electrical power surges which damage home appliances, heating and air conditioning equipment and other electrical problems.

Topographical Features

The topography of District Nine is extremely varied compared to the Tulsa Metropolitan Area. The center of the District is marked by the Lookout Mountain Area. This area has been designated as "Development Sensitive" by the District Nine Plan Report. This is because, according to the plan, the Lookout Mountain Area is:

1. Low areas are prone to flooding
2. Sloped in excess of twenty percent plus erodible soils
3. Unique in terms of environmental qualities

There are several creeks running through District Nine. One of these creeks is Cherry Creek. Cherry Creek meanders through the Lookout Mountain Area through the community of Red Fork and eventually finds its way into the Arkansas River. Since the River comprises the northern and eastern border of the District, its influence is significant. The City of Tulsa plans a low water dam which will provide a tremendous development opportunity to District Nine. This development should impact the District significantly and effect it in terms of economics, community services and facilities, commercial establishments, prestige, housing starts as well as many other factors.

Scenic Landmarks

Lookout Mountain stands amidst residential, commercial and

industrial development. It rises from the conflict and diversity of District Nine as a magnetic scenic inspiration to the City of Tulsa. There is limited oil and gas development on the Mountain with all of that development controlled by the largest landowner of the Mountain Area. While livestock, horses and cattle, are raised on the Mountain, wildlife abound including small animals, i.e., rabbits, squirrels, birds and fowl, raccoons, possums, snakes, insects, fox, beaver, muskrat, coyote, deer, bobcat, cougar and bear. While most of these animals are indigenous to the habitat, other wildlife migrate through the area from preserves in western and southern Oklahoma, to areas in Southwest Kansas, Southwest Missouri (Ozarks) and Northwest Arkansas. There are several farmponds for fishing. However, these are privately owned and are not used commercially and are not open to the public. Generally, public fishing takes place abundantly on the Arkansas River with such bottom-feeding fish as catfish, carp and gar the more popular. The soil in District Nine is rich, black and fertile. The Arkansas River Basin comprises much of District Nine and is the ecological source of the scenic topography, lush and rich vegetation and varied wildlife.

Business and Industry

Heavy industry in District Nine is a major source of economic stability. Two large refineries, Sunray DX and Texaco, as well as pipe yards, oil field supply warehouses, welding supplies and welders, trucking suppliers, jobbers and cleaning companies of all types and many other businesses and industries comprise the mega-support system for the vast oil fields of Glenpool, Tulsa, and eastern Oklahoma.

Subcultural Groupings

While there is an overall comradery among the "west-siders" of District Nine, there are several homogenous, sub-groups. Each community, West Tulsa, Red Fork and Berryhill have their own unique political cliques and are highly regionalized within the District. At the same time, these sub-groups while parochial; are similar in many of their beliefs, attitudes, cultural activities and customs. Many families are ultra-fundamental in religion. These religious groups include Baptist, Pentecostal and other non-denominational fundamentalists. Many of these religious denominations are evangelical. Indeed, as within the rest of Tulsa, the evangelical movement is prevalent in District Nine; the difference is that the evangelical influence has been a part of the religious setting of District Nine throughout its development, and has not simply become popular in the last several years.

Housing

Many of the District Nine residents are employed at business and industry within the District. Most residents have lived in the District for some time. Many are older people who have retired from jobs within the District. These people retire and continue to reside in the District. Many people have a great deal of money invested in their homes and land. Because of the socio-economic conditions set forth in the Community Lifestyle section of this chapter, the retiring workers cannot sell their houses for an amount of money to enable them to purchase adequate housing in other sections of the city. Thus, many District Nine residents are caught in an economic trap which ties them to the

District. Others choose to remain in the District because of family ties, convenience and contentment with surroundings.

Employment

Concerning recent development in West Tulsa, it is interesting to note that the area of the city south and west of District Nine has flourished in terms of commercial business, other business and industry. In a sense, the recent rapid growth of south and west Tulsa has skipped over the stagnant oasis of District Nine in favor of more volatile areas to the extreme south and west.

Community Settlement

District Nine was settled by blue-collar workers. As Tulsa emerged, the professional oil men and other businessmen settled in the downtown area on the east bank of the Arkansas River. Various support industries to oil and gas production are located on the west bank of the river. In this way, oil was produced from nearby fields and brought to the refineries in West Tulsa for processing. In addition, oil well supply and service companies of all types settled in West Tulsa to service the oil fields. Thus, blue-collar workers at the refineries, oil well suppliers and other petroleum-related business and industries resided in West Tulsa near their employment. Over the years, the City of Tulsa has consistently discriminated against West Tulsa in terms of city services. The city limit on the western boundary of Tulsa passes through the eastern side of District Nine. Consequently, the District is directed by the Tulsa City Commission and the Tulsa County Commission. In the past, the two commissions have not functioned harmoniously. As a result,

many residents of the District have been the victims of political gamesmanship and bureaucratic incompetence. Red Fork and Berryhill, in particular, have suffered in terms of poor sewer systems, utilities, streets and highways, fire protection, and police protection. Areas of District Nine have been the "step-child" of the city. Adding to the problem, city influentials and power groups have consistently exercised an "elitest" attitude toward city development and pushed development to the south and east. West Tulsa, although located within two miles of downtown Tulsa, has poorer quality city and/or city-county services than areas of Tulsa ten to fifteen miles to the south.

Conclusion

In conclusion, historically District Nine has a colorful past which dates back to the first days of Tulsa's birth. It emerged as "the other side of town" on the west bank of the Arkansas. Although many people value the scenic beauty of the District more than any other part of the city, city development has almost exclusively flowed to the south and east. Many residents in the District are typical blue-collar workers who have lived and grown up in the District. Because the District has been so stable and stagnant, it has a past history which reaches back into the early 1900's. In many ways, District Nine mirrors the historical growth and development of the City of Tulsa and stands a historical marker to the days of the rush for petroleum.

CHAPTER V

THE SOCIAL PROFILE OF TULSA

DISTRICT NINE

Below is a list of general characteristics which characterize the "typical household" found in District Nine. The "typical household" in District Nine is a family with two to three people in residence. This type of household represents over 65 percent of the respondents.

1. The respondent was 41 years of age or older in 71 percent of the typical households.
2. The median income was determined to be approximately \$15,000 annually.
3. Only 52 families reported membership in a civic organization while 24 reported membership in a conservation organization.
4. Forty-two households reported membership in fraternal organizations while 84 households reported membership in a professional organization.
5. Fifty-six families reported membership in organizations other than those listed in the survey.
6. Concerning education, 92 percent had completed their high school education.
7. Only 12 percent had received degrees from institutions of higher education.
8. Fifteen percent were graduates of a vocational institution.

9. The religious preference most often represented was Baptist.
10. Occupations were fairly even among blue collar, white collar and others. Only 19 reported professional occupations while 30 were entrepreneurs.
11. The majority listed "white American" as their ethnic background.
12. The "typical household" family reported residency in Tulsa of more than 21 years.
13. The length of residency in their present home was evenly spread from five to twenty-six years or more.
14. Over fifty percent indicated that their neighborhood was a "good" place to live and most households agreed that the owner of a home should have the right to do with his land what he wishes.
15. The residents felt stray dogs, litter on lawns and general upkeep were the most serious problems facing the neighborhood.
16. Crime, lack of recreational facilities and traffic problems were generally reported as the next highest concerns.
17. In dealing with neighborhood problems, over one-half of the typical families have talked with local officials while approximately one-third either ignored the problem or simply signed a petition.
18. Over one-half of the typical households felt neighborhood residents had shared interest and values.
19. When asked what were the most important factors in choosing another home, price of the home ranked as the most important factor and closeness to work ranked second. A nice looking

house, nice neighbors, and close to shopping were chosen as other important factors. Prestige was not indicated as being an important factor in the decision making process.

20. Less than fifty percent of the respondents have ever attended neighborhood meetings to help solve problems.
21. When asked about preference for future development, the primary response was medium residential while light commercial development ranked second, agricultural development ranked third and industrial ranked fourth.
22. There is little threat of flooding in the neighborhood as perceived by the typical family and nearly two-thirds feel no threat of pollution.
23. Approximately 33 percent of the "typical households" live near their place of work.
24. While the "typical household" would not like to see future industrial development, two-thirds reported they are "not afraid" of industrial growth.
25. When asked if they would like to see more new homes in the district, respondents answered a "moderate yes."
26. The "typical household" was fairly neutral in their view of whether or not population growth would mean more taxable income for developing community resources.
27. Eighty-four percent of the "typical household" were at least somewhat interested in political affairs.
28. Less than one-half of the respondents were familiar with Vision 2000 and only fourteen percent had ever heard of the District Planning Team.

29. When asked whether or not the District Nine Planning Team had asked their opinion concerning community plan, few respondents answered yes.
30. Five respondents reported attendance at a District Nine Planning Team meeting.
31. Few respondents felt the District Nine Planning Team represented their attitudes.
32. The majority of respondents reported that a person should be able to do with their land what they wished without government interference but 91% support zoning laws.

A Description of District Nine

From an analysis of the typical household of District Nine as constructed from the data of this study, District Nine is a community with several distinctive features when compared with general characteristics and features of the Greater Metropolitan Tulsa Area. The median income for the typical family in District Nine, \$15,000, seems low in terms of the income needed to maintain a middle-class standard of living in today's society.

Concerning professional affiliation and occupational involvement much of District Nine seems to be blue collar and belong to unions and union organizations. If not involved with union organization, many District Nine residents do not appear to be involved with community and/or social organizations with residents in the greater Tulsa Area. Primarily, women tended to belong to local church groups.

Although the vast majority of District Nine residents seem to be educated through the high school level, a small percent do have college

degrees. Other post secondary training seems to center on vocational, technical and junior college training.

Religion appears to play a dominant role in District Nine activities and attitudes. Ninety-six percent of the respondents indicated a religious preference. The majority of District Nine seems to prefer the Baptist faith while there were few Catholic respondents and no Jewish respondents. Other religious preference indicates a tendency by District Nine residents toward fundamental traditional religious beliefs which are reflected in community involvement. The primary method of community cohesion and communication seems to be strongly related to involvement with church groups. And, since the vast majority of church groups are Baptist, communication is good between church groups and the community as a whole.

In terms of ethnic background, many District Nine residents have an Anglo-Saxon heritage. The black community is segregated into an urban development project in West Tulsa. The "project" as locals refer to it also contains a significant number of American Indian families. Again, there were no Jewish respondents.

District Nine seems to be fairly static community. Two percent of the respondents indicated that they have lived in Tulsa less than five years. Over 60 percent of the respondents to this survey have lived in Tulsa over 26 years. More specifically to District Nine, 34 percent of the respondents have lived at their present address 21 or more years. These results indicate that District Nine residents have lived in their community for a considerable length of time compared to statistics on nationwide mobility.

Perhaps this is due, in some part, to the attitude of District Nine

residents concerning their community as a place to work, live and raise a family. Seventy-nine percent of the respondents rated the living conditions in their neighborhood as either excellent or good. Concerning other community and neighborhood problems, the response category marked "other problems" received the most response. Thirty-four percent of the respondents indicated that city government and maintenance of the community by city government was the number one problem facing their community. An insight into this statistic may be rooted in the initial development of the city of Tulsa in its inception. As was noted earlier in the study, the Arkansas River was used as a natural barrier to located industry and business on the west side of the river and the residence of the oil barons and their community members as well as the "city" proper of Tulsa on the east side of the river. For tax purposes as well as for political reasons, the city-county line was located approximately one mile west of the west bank of the Arkansas River. Since the central business district of the city of Tulsa has edged its way over the years down to the east bank of the Arkansas River, and now with the new "West bank project" brought on by the proposed low-water bridge on the river, residents of Tulsa located from the Arkansas River east have adequate city services such as sewers, city water, fire protection and other utilities. However, most of the District Nine residents, some of whom live within one mile of the central business district of Tulsa use septic tanks rather than sewers, have to provide their own fire protection as well as other problems covered in Chapter IV. This is due in part to the fact that the county over the years has not been as sensitive to community problems as city government has been; as well as the fact that county government is not funded nearly as well

as city government; and what funds the county has oftentimes do not seem to reach the problems indicated by the respondents. In terms of housing, District Nine has not changed greatly in the last 25 years according to many of the respondents who have lived at their residence for over 21 years. Perhaps this statistic has a correlation with the result that 44 percent indicated poor maintenance and pride of the fellow neighbors as a major problem of the area. Examples in the survey include stray dogs, litter and trash cans on front lawns and poor home upkeep as specific neighborhood problems. In addition, crime was reported as a problem of the District. However, newspaper, radio and television reports recently have indicated that crime has also dramatically increased in the greater metropolitan area of Tulsa. Thus, District Nine may simply be a reflection of a growing urban city.

In terms of community action to solve neighborhood problems, 22 percent have tended to ignore community problems, while 26 percent were not particularly concerned with neighborhood problems. Of those respondents who were actively concerned about neighborhood problems, talking with local officials seemed to be the method of communication or path of action most preferred. Over 50 percent of the sample were satisfied with the way local officials handled neighborhood problems.

About 50 percent of the sample indicated that they felt that people in their neighborhood tended to have shared interests, values and behaviors. This statistic seems to reinforce much of the data in Chapter IV.

The survey was designed to give the respondents a chance to indicate that if they could move to a new location to reside, what would be the factors that would influence their decision to purchase a new home. In order of importance, the most important factors were price, nice

neighbors, closeness to shopping areas, closeness to work, one large lot or yard, closeness to schools, natural woodsy area, secluded and private while prestige neighborhood was ranked last.

This data supports responses found in other parts of the survey as well as unobtrusive data reported in Chapter IV concerning the history of the District. While the average District Nine resident is on a limited income price is not surprising as the number one factor in choosing a home. However, nice neighbors which are reflected in church group meetings, religious importance to the community, length of time at present address; all these statistics seem to support the historical ethnic and blue collar data reported throughout this study.

The majority of District Nine residents sampled preferred that the Lookout Mountain area not be developed with medium or high intensity usages including agricultural, commercial, industrial and residential. However, if developed, residents preferred residential development to the other usages measured. Most respondents did not desire industrial and commercial development regardless of usage intensity.

Regarding political affairs of the District, respondents reported an interest. However, 68 percent of the respondents were unfamiliar with the Vision 2000 Urban Planning Program in Tulsa. In addition, 84 percent reported that they were not aware of the District Nine Planning Team. Of the 16 percent who indicated familiarity with the District Planning Team, no respondent had been canvassed by the Team concerning attitudes toward community growth and development. Two percent reported that they thought the District Nine Planning Team represented their attitudes toward community development.

CHAPTER VI

COMMUNITY LIFESTYLE OF TULSA DISTRICT NINE

The area of District Nine covers a diverse community including single family residence, urban renewal multifamily dwellings, light to heavy commercial business and light to heavy industry. Although District Nine is included in the Tulsa Standard Metropolitan Statistical Area (SMSA), the satellite communities of West Tulsa, Red Fork and Berryhill have not enjoyed equal benefits of urban services as the communities in south and east Tulsa. Tulsa has emerged as an urban area with the downtown section and the "professional" community on the east side of the Arkansas River while heavy industry and the "blue collar workers" are located on the west bank of the River. District Nine is a unique blend of urban and rural. While the satellite communities, West Tulsa, Red Fork and Berryhill are considered urban areas, there is a large tract of undeveloped land between these satellite communities and the heavy industry located along the west bank of the Arkansas River. This tract of land is known as the Lookout Mountain Area consisting of several large hills characterized by steep slopes, large trees with heavy underbrush, and valleys with the rich black soil of the Arkansas River Basin. The Lookout Mountain is named after Chief Lookout, a prominent Osage Indian Chief who lived in the hill area. Presently, the land is primarily zoned agricultural. However several hundred acres on the east side of the undeveloped tract was zoned heavy industrial in 1957.

In addition to residential and undeveloped, a third land usage is industrial. Approximately one-half of District Nine is zoned industrial. The major heavy industries of Tulsa including the two large refineries, Sunray DX and Texaco, are located in District Nine. Much of the economy of District Nine is based on heavy industry with the two refineries contributing a major portion.

The population per acre in District Nine has remained constant over the last ten years and is projected to stay constant for the year 2000. Table I indicates population trends per acre for the year 2000.

Concerning basic demographic characteristics of the community, Table II displays data contrasting District Nine with the Tulsa Metropolitan Area. Specifically Table II indicates that while the Tulsa Metropolitan Area experienced a 26 percent growth from 1960 to 1970, District Nine totaled an 11 percent decrease in population for the same time period.

From 1960 to 1970, District Nine incurred a loss in number of people employed of 6.6 percent. This figure may suggest that the population is aging as a whole. People may be retiring and leaving the work force.

District Nine incurred a nine percent decrease in number of families while the Tulsa Metropolitan Area experienced an increase of 17 percent.

Moreover, 21 percent of the population of District Nine have an income below poverty level. Conversely, nine percent of the population of the Tulsa Metropolitan Area have an income below poverty level. This statistic reveals that the older population of the District who have retired from the work force live on an income of less than the poverty level.

TABLE I
POPULATION PER ACRE: CURRENT AND PROJECTED

	<u>1974</u>	<u>1982</u>	<u>2000</u>
Population/Acre	1.3	1.3	1.6

Source: Tulsa Metropolitan Area Planning Commission
Research Department

TABLE II
TABLE DEMOGRAPHIC COMPARISON: DISTRICT
NINE AND METROPOLITAN TULSA

<u>Item</u> <u>Tulsa</u>	<u>District Nine</u>			<u>Metropolitan</u>		
	1960	1970	Change	1960	1970	Change
Population 1000's	18.0	16.0	-11%	349.0	441.0	+26%
Families, 1000's	4.9	4.4	- 9%	93.1	108.5	+17%
Family Size	3.4	3.1	- 6%	3.1	3.0	- 3%
Households, 1000's	5.5	5.2	- 6%	111.1	135.4	+22%

Source: Vision 2000, District Nine Planning Report

From 1960 to 1970, District Nine experienced a negative growth in the number of households of 5.8 percent. This compares with an increase of 22 percent for the Tulsa Metropolitan Area. By the year 2000, however, District Nine is forecasted to experience a positive growth of 17 percent in a number of households.

Table III indicates that a higher percentage of the population of District Nine receive income from social security, pensions and public welfare than occurs in the population of the Tulsa Metropolitan Area. This table reinforces previous statistics concerning age and retirement of the District Nine population.

Table IV demonstrates that District Nine is a slow developing area in comparison with the Tulsa Metropolitan Area. In 1974, for instance, there were no zoning applications or recent subdivision in District Nine. While there were 42 building permits issued, the Tulsa Metropolitan Area had 3,740 building permits issued which average 150 building permits per district. District Nine experienced one-third of the growth in building permits of the average district in the Tulsa Metropolitan Area, it is not being demolished and rebuilt as fast as the average district. These figures suggest that District Nine is not changing physically compared with the Tulsa Metropolitan Area or the average district in the Tulsa Metropolitan Area.

In conclusion, an analysis of the community lifestyle of District Nine indicates that residents are retiring from the work force and remaining in the District subsisting on social security, pensions and public welfare at an income below the poverty lifestyle. Many people who reside in the District are "blue collar workers" who have lived in the District for some time. In terms of physical change, District

TABLE III
INCOME SOURCES

	Wages and Salaries	Self-Employed		Social Security and Pensions	Public Welfare	Other
		Non-Farm	Farm			
D.9	4,278 (55%)	470 (6%)	63 (.8%)	1,178 (15.1%)	408 (5.25%)	1,371 (17.6%)
TMA	116,032 (52.9%)	15,475 (7%)	2,332 (1.1%)	28,485 (13%)	9,112 (4.2%)	47,758 (21.8%)

Source: Vision 2000, District Nine Planning Report.

TABLE IV
LAND USE ACTIVITY COMPARISON

	D-9	TMA
Zoning Applications	0	39
Recent Subdivisions	0	96
Building Permits	42	3,740
Demolition Permits	6	240
Major Projects (\$100,000+)	4	97

Note: Based on 1974 Permits

Source: Vision 2000, District Nine Planning Report.

Nine does not seem to be growing and/or dying out at a rapid pace. District Nine seems to be staying undeveloped and unchanging. People do not seem to be moving into District Nine or out of District Nine at a rate equal to the overall Tulsa Metropolitan Area or the average district in the Tulsa Metropolitan Area. In general, District Nine is aging in terms of population and physical characteristics. While much of Tulsa's growth has been to the south, east and north, little change has been experienced on that part of the west bank of the Arkansas River designated as Planning District Nine.

CHAPTER VII

SUMMARY

The structure of the path model as outlined in the study methodology is a five-variable diagram shown in Figure 4. The scales for the path diagrams are: (1) Amount of Community Action; (2) Attitude to Community; (3) Attitude to Development; (4) Years of Education; and (5) Years of Age.

In this diagram, the path coefficients depict the causal effects upon the dependent variable, Community Action. Although the diagram provides a good look at the structure of the five-variable model, it is complex. The relationships between (1) P₁₅, Age and Community Action; (2) P₂₅, Attitude to Community and Age; and (3) Attitude to Community and Community Action appear to be significant. To further clarify the analysis, Figure 5 depicts a three variable path model.

For the three variable model, the significance criteria for the standardized path coefficients are

$$n = 276$$

$$r_{.05,276} = .12.$$

The basic path coefficient formula as reflected in the relationship P₁₂, Community Action and Attitude to Community is:

$$r_{25} = .19 \quad P_{12} = \frac{r_{12} - (r_{15})(r_{25})}{1 - r_{25}^2}$$

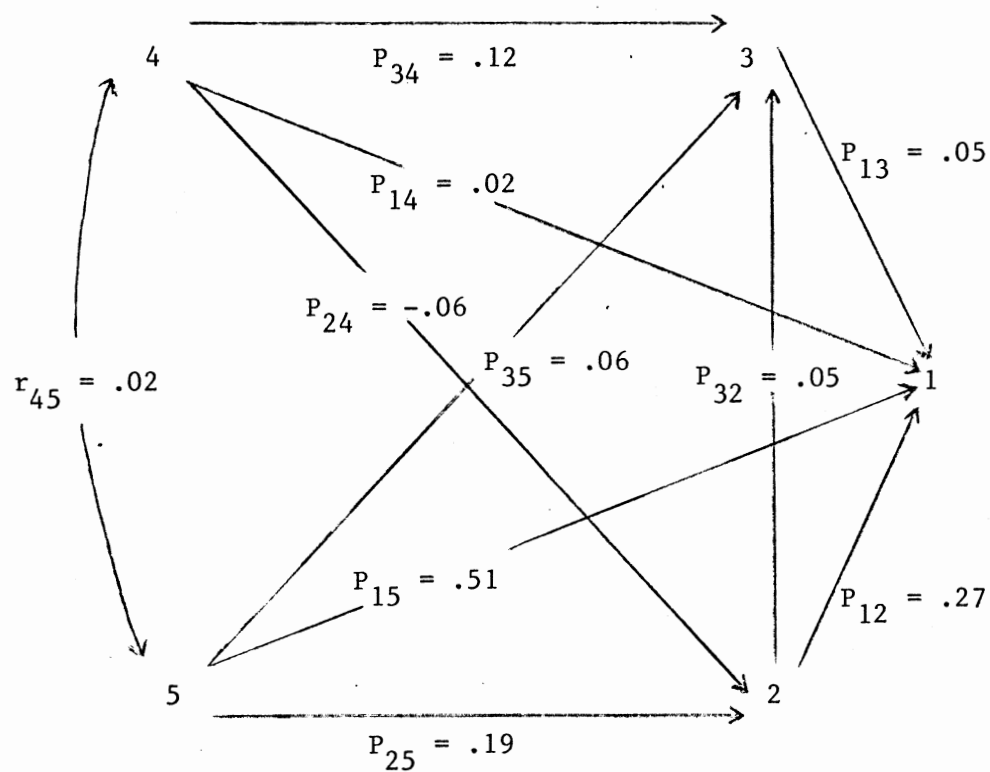


Figure 4. Five-Variable Path Diagram

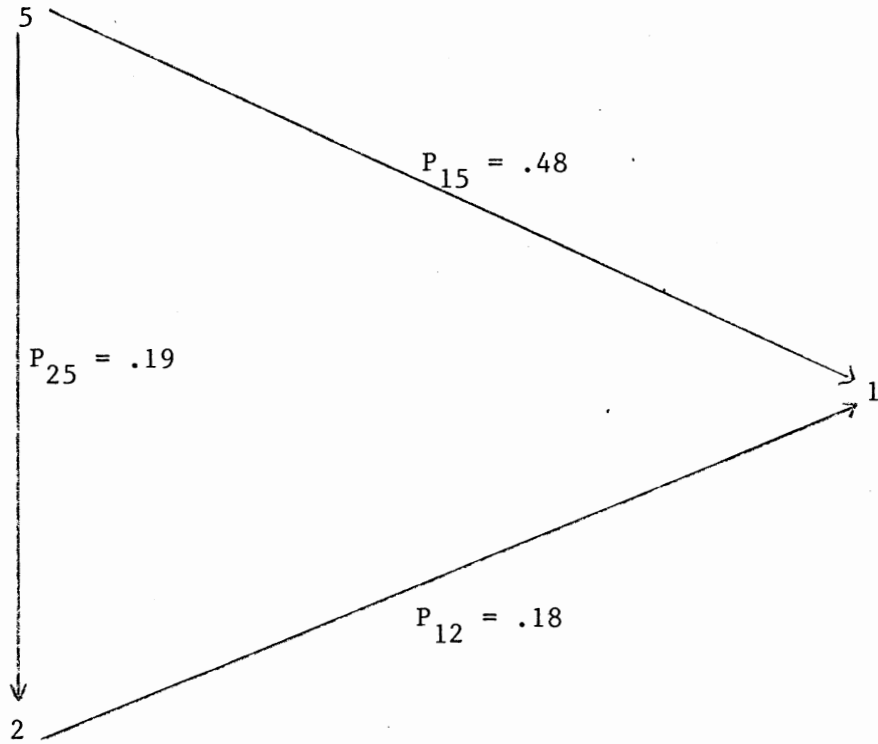


Figure 5. Three-Variable Path Model

$$r_{15} = .51 \qquad P_{12} = \frac{.27 - (.51)(.19)}{1 - (.19)^2}$$

$$r_{21} = .27 \qquad P_{12} = .18.$$

The path coefficient calculated from regression coefficients for the effects of Attitude to Community upon Community Action level is .18. In the three-variable model, much of the less significant data generated by the five-variable model is omitted thereby giving a clearer indication of the strongest relationships in the study.

The strongest relationship is the effect of Age upon Community Action. That is, as people age and become more entrenched in their community, their level of community action increases. Other socio-economic factors such as attitudes toward community, community development and level of education have less effect upon Community Action than Age.

Thus, if Community Action is an indicator of activity expressed through basic adaptive processes such as competition, dominance and succession, Age is a primary factor which influences people to actively adapt to their environment. The logical ramifications of Age suggest that people invest money, energy, emotion and other factors in their community over time. It may be the investment which encourages people to increase community action level to protect their place in the community. In any event, Age has a direct causal effect upon Community Action level in this model.

In summary, District Nine is a development area which has remained fairly static. The older population of the District seems to have influenced a policy of no-growth. Perhaps much of the success residents have had keeping the area static is reflected by the effects of the Age

variable upon community action. In the case of District Nine, the primary ecological process exhibited seems to be dominance. That is, residents have dominated efforts by intruders to compete for territory and eventual social change. The demographic and historical data as well as the statistical evaluation of questionnaire items suggest that the District population will avert beneficial and adverse effects of development forecasts through an increased action level exhibited in basic ecological processes designed to enhance an adaptive potential.

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APPENDIX

Dear Tulsa Area Resident:

We, as members of a research team at the Ecology Research Group, Inc., are offering you an opportunity to participate in a study of preselected Tulsa residents. We consider your attitudes and experiences important and valuable. We hope you feel the same. Your completion of the enclosed questionnaire is one way to express your attitudes and experiences that we both feel are significant.

You have been included in a small representative sample of persons living in your area. Please fill out the enclosed questionnaire. Your immediate completion and return of this questionnaire will be greatly appreciated. The results of the survey will give the research team information related to general neighborhood information, natural hazard attitudes and experiences, industrial development, residential development, political affairs, and demographic composition of the area.

As mentioned above, you have been selected from a very small sample of Tulsa residents. Your reply is valuable to the success of the study.

Pretesting of an earlier form of this questionnaire has shown that it will take approximately 12 minutes to complete. Please take time now to sit down, fill it out, and return it in the prestamped envelope provided for your convenience. We need your response as soon as possible. Your answers will remain completely anonymous.

We sincerely thank you for your consideration and cooperation.

Richard B. Fenimore
Project Director

ECOLOGY RESEARCH GROUP, INC.

DISTRICT NINE SURVEY QUESTIONNAIRE

THE FOLLOWING GENERAL INFORMATION QUESTIONS CONCERN YOU AND YOUR RESIDENCE IN THE DISTRICT NINE AREA OF TULSA. PLEASE READ EACH QUESTION CAREFULLY AND ANSWER IT TO THE BEST OF YOUR KNOWLEDGE. PLEASE CHECK THE APPROPRIATE RESPONSE.

1. How long have you been living in the Tulsa area?

<input type="checkbox"/> 5 years or less	<input type="checkbox"/> 16 to 20 years
<input type="checkbox"/> 6 to ten years	<input type="checkbox"/> 21 to 25 years
<input type="checkbox"/> 11 to 15 years	<input type="checkbox"/> 26 or more years

2. How long have you lived at your present address?

<input type="checkbox"/> 5 years or less	<input type="checkbox"/> 16 to 20 years
<input type="checkbox"/> 6 to 10 years	<input type="checkbox"/> 21 to 25 years
<input type="checkbox"/> 11 to 15 years	<input type="checkbox"/> 26 or more years

3. In general, how do you feel about the living conditions in your neighborhood?
 - Excellent place to live
 - Good place to live
 - Fair place to live
 - Poor place to live

4. As long as there are no direct adverse effects on others, a person ought to have the right to do what he wants with his own home and/or land.

<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree
<input type="checkbox"/> Agree		<input type="checkbox"/> Strongly Disagree

5. What do you consider the most serious problem in your neighborhood? (rank in order, #1 being the most serious)

<input type="checkbox"/> Crime	<input type="checkbox"/> Recreational areas (lacking)
<input type="checkbox"/> Industry	<input type="checkbox"/> Schools (inadequate)
<input type="checkbox"/> Flooding	<input type="checkbox"/> Traffic
<input type="checkbox"/> Other (specify) _____	

6. With respect to neighborhood problems, which of the following actions have you taken in the past? (check those that apply)
 - Ignored the problem
 - Not aware of any neighborhood problems
 - Signed a petition
 - Taken the problem into your own hands
 - Talked with local officials

7. Are you satisfied with the way local officials handle problems in your neighborhood?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------

(over please)

DEMOGRAPHICS

28. Age:
- | | |
|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> 20 or under | <input type="checkbox"/> 41 to 50 |
| <input type="checkbox"/> 21 to 30 | <input type="checkbox"/> 51 to 60 |
| <input type="checkbox"/> 31 to 40 | <input type="checkbox"/> 61 or above |
29. Sex:
- | | |
|-------------------------------|---------------------------------|
| <input type="checkbox"/> Male | <input type="checkbox"/> Female |
|-------------------------------|---------------------------------|
30. Income (annualized):
- | | |
|---|---|
| <input type="checkbox"/> \$4,999 or under | <input type="checkbox"/> \$15,000 to 19,999 |
| <input type="checkbox"/> 5,000 to 9,999 | <input type="checkbox"/> 20,000 to 24,999 |
| <input type="checkbox"/> 10,000 to 14,999 | <input type="checkbox"/> 25,000 or above |
31. Organizations that you are involved with:
- Civic
- Conservation
- Fraternal (Elks, Shriners, etc.)
- Professional (Unions, societies, etc.)
- Other (specify) _____
- None
32. Education:
- | | |
|--|--|
| <input type="checkbox"/> High school graduate | <input type="checkbox"/> Vocational graduate |
| <input type="checkbox"/> College graduate (4 yr) | <input type="checkbox"/> Junior college graduate |
| <input type="checkbox"/> Master's degree | <input type="checkbox"/> Other (specify) _____ |
33. Number of persons living in your household:
- | | |
|---------------------------------|-------------------------------------|
| <input type="checkbox"/> One | <input type="checkbox"/> 6 to 7 |
| <input type="checkbox"/> 2 to 3 | <input type="checkbox"/> 8 to 9 |
| <input type="checkbox"/> 4 to 5 | <input type="checkbox"/> 10 or more |
34. Religious Preference:
- | | |
|--|--|
| <input type="checkbox"/> Assembly of God | <input type="checkbox"/> Interdenominational |
| <input type="checkbox"/> Baptist | <input type="checkbox"/> Jewish |
| <input type="checkbox"/> Catholic | <input type="checkbox"/> Lutheran |
| <input type="checkbox"/> Christian | <input type="checkbox"/> Methodist |
| <input type="checkbox"/> Episcopalian | <input type="checkbox"/> Presbyterian |
| <input type="checkbox"/> None | <input type="checkbox"/> Other (specify) _____ |
35. Occupation:
- Blue collar (wage-earning employee)
- Entrepreneur (own your own business)
- Professional (charge a fee for service, e.g., lawyer)
- White collar (salaried employee)
- Other (specify) _____
36. Ethnic background: (choose only one as a major portion)
- | | |
|--|--|
| <input type="checkbox"/> American Indian | <input type="checkbox"/> Jewish |
| <input type="checkbox"/> Black American | <input type="checkbox"/> Polish |
| <input type="checkbox"/> German | <input type="checkbox"/> Spanish |
| <input type="checkbox"/> Irish | <input type="checkbox"/> Other (specify) _____ |

THANK YOU FOR YOUR COOPERATION

VITA²

William John Lamberton IV
Candidate for the Degree of
Doctor of Philosophy

Thesis: SURVIVAL IN THE TULSA MOUNTAINS: A STUDY OF THE ADAPTIVE
IMPERATIVE IN HUMAN ECOLOGY

Major Field: Sociology

Biographical:

Personal Data: Born in Tulsa, Oklahoma, September 11, 1947, the
son of Mr. and Mrs. W. J. Lamberton.

Education: Graduated from Tulsa Central High School, Tulsa,
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Professional Experience: Graduate teaching assistant, Oklahoma
State University, Oklahoma State University, Stillwater,
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State University, Stillwater, Oklahoma, 1973-1974; graduate
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