THE UNIVERSITY OF ALBERTA

A COMMUNITY DEVELOPMENT MODEL
ILLUSTRATED WITH HINTON, ALBERTA

by

JOHN MICHAEL HARVEY

A THESIS

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ABSTRACT

If environments are not consciously designed, certain "natural" (i.e., not intellectually controlled) processes occur. Populations tend to increase to the carrying capacity of the resources such that each individual just subsists; high levels of competition exist; extinction and monopolization of energy sources occur with concomitant increase in entropy associated with transactions; system complexity and therefore stability decrease. These trends are common in both ecosystems and economic systems. The results, both figuratively and in fact, are suffering and death for those individuals and corporations who cannot compete.

Appreciation of these processes can allow intellectual controls to reduce competition and to provide a high standard of living. To this end a community development model was suggested in which objectives are stated in terms of human behavior rather than economic development, population growth, etc., and in which the environment is designed to produce this behavior. Man is what he does, and his environment (defined as all factors that could possibly affect him) causes his behavior through operant conditioning. The behavioral effects of environmental factors can be determined and the concept of safe minimum standard can be applied to their reinforcing ability. Environments can then be designed which will produce the desired behavior.

The model was illustrated by the development of Hinton, Alberta. Most components of a standard of living were found to be adequately available in the town, and the local resources appeared capable of

supporting the present population of 5200. The population was thus considered approximately at the carrying capacity but below an optimal population size. Planning of the town's development, however, appeared to be oblivious of the "natural" processes of growth described above. Instead, emphasis was on increased industrial and population growth. It was predicted that standard of living cannot be maintained in the face of largely unpredictable and uncontrolled economic growth. Three main areas were identified as critical for town planning: calculations of optimum population ranges for towns; technological assessment to evaluate the ability of various economic systems to provide a high standard of living; and parent government control of industrial allocation and population size so that optimum size towns could be planned in advance, and in accordance with parent government objectives.

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INTRODUCTION

Background Information

Large areas of poverty exist in Canada (Chernick, 1966; Adams, et al., 1971). This situation is unpleasant for those involved and results in a variety of costs to Canadians as a whole. The loss in human resources and potential is considerable. In some areas even basic education is absent and fatalistic hopelessness prevails (Hetland, 1969). Welfare costs are high but are still inadequate to do more than provide housing and food. Important socializing amenities such as educational TV channels or varied entertainment are generally scarce.

Such areas often contain valuable natural resources that could be developed to benefit not only the local area but all of Canada as well. A variety of plans have been suggested to inspire economic development, and consequently human development. Regional development, however, has proven a difficult problem, and financing plans such as ARDA (McCrorie, 1969) have been criticized on the grounds of inefficient planning and poor management (Mohammad, 1969).

The encouragement of large corporations to develop resources in certain areas is considered by many to be a useful approach to both regional development and acceleration of the Canadian economy. Multi-million dollar pulp mills, iron mines, and coal mines have and are being developed by those with capital, usually U.S. corporations. Often these have received financial aid from the Canadian and Provincial governments in the form of tax easements, as they are believed to contribute sig-

nificantly to the Canadian economy through royalties, taxes, salaries and payment for services. The multiplier effect whereby new businesses arise in the wake of the large corporation is difficult to estimate accurately (Pfouts, 1960) but is considered to be an important contribution to economic growth. Employment, in-service training, and the presence of a more modern industrial culture are expected to have a socializing effect on the local inhabitants and thus to develop both the region and its people.

Such big businesses, however, have been criticized on several counts. They often maintain high hiring standards with the result that few if any local people benefit from employment (Hetland, 1969). Relatively few employees are required due to mechanization. The contribution to the local economy is often small compared with the total assets of the corporation (Laxer, 1970), and large profits may be returned to the home country (Magdoff, 1969). Thus it is possible that the mere provision of a large industry will not ensure a satisfactory standard of living for local employees or the secondary employees who will form a town near the industry.

The large corporations represent huge investments. The installations are relatively permanent and the commitments of the corporation are great. Profits must be realized and the business must be operated efficiently. But profitable operation of such enterprizes does not necessarily contribute greatly to the social development and welfare of the community--a process which may require a slow development. More detailed studies than just those of cost-effectiveness are required if this approach to regional development is to continue. Many questions pertaining to the sociological as well as to the economic aspects of

corporate development should be answered.

In Alberta a pulp mill has been operating at Hinton for several years and a new one is in the building stage at Grande Prairie. Large coal mines have recently opened at Grande Cache. It is apparent that large corporations are considered useful regional development agents, yet few studies of the social or economic aspects of them on the communities have been made. Indeed, little economic information has been made public apart from scattered news releases.

General objectives such as increased Canadian employment and government revenues were associated with the development and operation of the Hinton pulp mill. The formation and growth of a town around the mill may or may not have been a specific objective but it has occurred. Similarly, new towns are and will be forming near the sites of other mills and mines in previously undeveloped areas.

There is an apparent lack of the use of community development principles or of human resource development methods in the development of many natural resources, even though these developments have considerable effects upon many people. Towns are not just inanimate collections of people but are living changing environments that shape the lives and attitudes of those within, and ultimately affect the nation as a whole. It is important that towns do not just grow but that they be developed or planned along guidelines established by social workers, city planners, and community developers. It is also important to understand the ability of a mill or other enterprize to support a town by means of revenues from the basic resources.

Purpose of the Thesis

The purpose of this thesis is to discuss objectives and methods of human development through community development and to describe a model of community development using these objectives and methods. A small town, Hinton, Alberta, is evaluated with respect to this rationale in order to test and improved the model. Such a model should prove useful in the future development of new communities and in the restructuring of existing ones.

The study is based on several concepts that are discussed in Chapter II. These are:

1. The ultimate objective of community development, human resource development, urban planning, or any other development involving people is human behavior. A man is what he does. Without agreement and a clear description of the desired behavior, planning will be haphazard and unlikely to succeed.
2. The environment of an individual shapes and develops his behavior to a significant degree. The operant conditioning model of Skinner (1953, 1971) is accepted here.
3. The community is considered equivalent to environment. It is somewhat different for each individual and includes all factors that contribute, or ever have, or ever will contribute, to his behavior.
4. Community development is the construction of an environment which will produce the desired behavior. This task requires a knowledge of the desired behavior and an understanding of the effects of environmental factors on behavior.
5. Town and city environments are most critical due to the urbanization trend and to the fact that urban environments present a high

concentration of reinforcing elements and therefore strongly affect behavior.

Objectives

The specific objectives of this thesis are:

1. To discuss behavior patterns as community development objectives.
2. To relate standard of living components to behavior modification and to define standard of living in these terms.
3. To identify environmental standards that have evolved, and to suggest research needed to further develop our knowledge of minimum standards required to maintain a desired standard of living and to achieve the behavioral objectives.
4. To assess the presence or absence of accepted environmental standards in Hinton, and to assess their costs.
5. To estimate the additional costs required to improve or supply missing environmental components.
6. To assess the ability of local resources to pay for the required components.
7. To suggest methods of extending this approach to give estimates of optimum population size.

Thesis Outline

Chapter II discusses objectives and methods of community development, and describes the use of environmental standards to define a standard of living.

Chapter III describes the Town of Hinton with respect to objectives and standards. Chapter IV discusses the economic resources available to the town and the factors that have contributed to community design

and planning.

Chapter V summarizes the thesis and discusses the importance of estimating optimum population size and assessing technological impact in the development of communities.

CHAPTER II

OBJECTIVES AND METHODS OF COMMUNITY DEVELOPMENT

Defining Objectives

Community development is not an end in itself but a means to an end. It is impossible to practice community development without clearly defining this end, and the present lack of clear statements of objectives is a reason for the ambiguous nature of community development. A possible reason for a lack of community development objectives is the inherent difficulty of the problem, for a discussion of these objectives soon leads to the ultimate questions of the purpose and style of life. However difficult these questions may be, they must be clarified, at least in general terms, before methods of community development can be adopted.

Many authors have tackled the questions of a desirable or worthy style and purpose of human life, and a useful observation is that the objectives have usually been described in terms of behavior patterns rather than in terms of physical accomplishments or other tangible products. Religious teachings, for example the ten commandments, have defined appropriate behavior, as does the golden rule; and Huxley (1948) suggested the purpose of life should be to ensure survival and to control our own evolution through technical and psychological research. He applauded the fast-approaching demise of organized religion and called for scientifically-based decision-making and psychoanalytical understanding to allow us to develop in directions our research indicates will best ensure survival.

Somewhat similarly Maslow (1968) described the ultimate man as one

who has the freedom to develop to the limits of his genetic constitution. Such "self-actualized" persons develop a variety of behavioral characteristics, e.g., superior perception of reality, greatly increased creativeness, and many others (Maslow, 1968, p. 26). Experiencing these "B-experiences," then, is the objective of life for Maslow. Rogers (Rogers and Skinner, 1956) held similar views regarding suitable and useful long-range objectives for man.

In a much different vein, Ayn Rand (1957, 1964) defined the ideal society as one in which each person behaved in a predictably selfish and profit-oriented manner. It was not necessarily a materialistic society that she considered important, however, but rather an objectivistic ethic which conceived of man as a heroic being who strives for his own happiness through his innate powers of reason and productivity. Her main concern was for human creativity and for an economic system that would not hinder its expression. According to her this ethic, if allowed to flourish, would result in technological innovation and a smoothly-functioning market system.

Philosophers and scientists through the ages have called for an ideological basis for our development. From Plato to Guevara (Sinclair, 1970) to Thoreau (1854), McHarg (1969), and D.L. Meadows, et al. (1972, p. 184) who wrote: "The two missing ingredients [for creating a lasting society] are a realistic, long-term goal that can guide mankind to the equilibrium society and the human will to achieve that goal.", intelligent people have recognized the importance of identifying and following objectives stated in terms of human behavior patterns.

Yet few nations have specific goals that its citizens are aware of and toward which they can strive, and some authors consider them un-

necessary. Plessas and Fein (1972), for example, discussed the difficulties of identifying social goals or of measuring successes, and Smith (1970) suggested that urban planning was difficult and probably unnecessary. Dimond (1971), however, reported the apparent success of medical service to all citizens of Red China and attributed the success largely to the decision to succeed. I suggest that few such attempts have been made, even on a regional scale, and that more information from highly planned societies such as Red China and Cuba could be very useful to us, as, Smith to the contrary, we are becoming more and more aware of the problems of urban proliferation, competing industries, fluctuating employment, and other characteristics of largely uncontrolled economies.

In summary, it appears that most philosophers and researchers have called for a clear statement of society's objectives stated in behavioral terms, yet few nations have clearly defined objectives other than statements of materialistic development.

Methods of Development

Regardless of the difficulties of identifying society's goals, three main methodologies have developed to attain them. These are the doctrines of economic growth, technological development and human rights.

Economic Growth

There appears to be several underlying assumptions to the argument for economic growth. Most of its proponents assume that population growth is inevitable and often necessary; that man is by nature "economic man" whose decisions are predictably selfish; that there will always be an insatiable desire for more income and material things; that if man

is provided with environmental objects and comforts, social systems will automatically adjust in a harmonious way; and that the market system, with some constraints, is an effective method of allocating resources.

Proponents of economic growth thus assume that it is synonymous with human development, and indeed it is difficult to discuss them separately, as Gallaher's statement (1968): "Economic growth is the core of development." indicated. Considerable argument exists, however, as to the exact methods to be used, even among those who agree on the need for economic development.

One quite basic dichotomy is the balanced-unbalanced approach to economic growth. Some believe that development is best stimulated by comprehensive simultaneous investment in complementary fields of production. Others argue that this is impossible and undesirable. They say that investment concentrated in one or a few sectors at a time is more productive.

The balanced growth method received some support by Galbraith (1964). He seemed to form his proposals in order that inequities among groups of people would not occur. For this reason he ruled out the value of all-out production and prescribed instead his popular consumption criterion whereby production would be focused generally on the needs of the masses. Seers (1969), although not arguing so strongly for a purely economic approach, believed that development could be roughly measured by personal income, provided income distribution was relatively even. Hagen (1968) has outlined other traditional arguments in favor of balanced growth.

Hirschman (1958), however, has argued that balanced growth is

impossible because a poor country lacks both the capital and management required. Unbalanced growth, on the other hand, creates bottlenecks which require attention. This response causes more bottlenecks and so on. A feed-back system is established and decision-making is simplified.

The question of income distribution is implicit in the question of growth rates. The idea that unequal distributions were required so that the rich could be able to invest has been derided by Seers (1969) and Parmar (1970). They argued that in a poor country even the rich may not have sufficient capital, and when they do they tend to spend it on luxuries produced in other countries, thus further harming their own economy. Parmar (1970) believed that the rich of the U.S. exploited the working class and that it was the latter who were forced to save while the rich kept the profits and income distributions became even more skewed.

Schumpeter (cited in Hagen, 1968), on the other hand, identified the entrepreneur as the motivating force behind economic development, and many attempts to identify and encourage entrepreneurial behavior in undeveloped countries have been studied (McClelland, 1961). Kolko (1967), however, argued that the role of entrepreneurs had been greatly overstated and in fact it was a few very rich early Americans who were the real forces behind much development. Mills (1956) also emphasized the role of a few powerful individuals to make decisions without consideration of public opinion. Thus the argument regarding the importance of income distribution in economic development appears unsettled.

Another debatable question is the use of foreign capital in the

development of a country. It is generally conceded that a poor country must borrow or allow foreign investment because of an acute shortage of money (Gallaher, 1968; Tagumpay-Castillo, 1967). Yet Galbraith (1964) repeatedly suggested that the importance of capital could be over-stated, and Parmar (1970) stated that foreign aid has not had the desired results of generating a self-liquidating process or causing progress from imitation to adaptation to innovation in the developing country. Others (Magdoff, 1969; Laxer, 1970) have gone much further and described the motives behind the giving of aid and the considerable debilitating effects foreign aid can have on the aided country.

The effects of foreign investment in a country are no doubt controlled to a considerable degree by the ability and organization of that country's government. Galbraith (1964) believed that an efficient administration was essential for development, but this reasoning is somewhat circular since efficient administration defines, in part, development.

In summary, even among those who agree on the economic growth approach to development, the exact methods are not clear.

Technological Development

A second approach to development is to determine the general needs of people through studies of human behavior and to supply these needs through engineering technology and innovative design. The attitude is somewhat akin to Galbraith's (1964) suggestion of catering to the average citizen's needs, but is motivated more from the desire for human welfare than from the perspective of the industrialists' opportunities.

Staley (1961, p. 92) used the following criterion: "The test of a development program ought to be its effects on human beings directly and indirectly affected by it." He then listed the human needs he believed to be nearly universal, and argued for accepting them as objectives in human resource development. They were: an adequate living (physical requirements); a sense of security; a sense of freedom and participation; creative opportunities; a sense of belonging; and a sense of purpose. This approach attempted to identify the needs of the individual, rather than to apply a uniform process to a group or country, and would appear to be a useful approach if methods can be found to provide the ends. Trudeau (1968) similarly identified objectives at the individual level when he said: "In order to focus programs on those who need them, we must define with as much clarity as possible, the essential components of a minimum standard for satisfactory living--not a subsistence standard but one which allows for dignity and decency."

In general, however, the technical control advocates have spent less effort determining what is wanted or needed by people, and more effort using technology either for its own sake or as solutions to existing problems. Norbert Wiener (1954) and Buckminster Fuller (1969a, 1969b), the most creative and optimistic of the "technology for man" school, have suggested many examples and original ideas as to how life could be improved by machinery and design, and Spilhaus (1971) predicted a revolution in the use of ecological and physical principles in developmental design so that less energy would be wasted, people would have more relation with the land and would control their own environment rather than vice versa. It is the difficulties of

administration and not of technology that maintain most inefficient and harmful systems, he concluded, and to avoid many of them he has detailed the design and construction de novo of an experimental city, using the most modern technology for transportation, pollution control, waste removal, and all the other physical requirements of a city (Spilhaus, 1968). Important characteristics would be strict population control (¼ million limit) and the preservation of surrounding rural land.

In these designs little discussion was given to psychological and sociological needs of people; no doubt proponents of technological control either underrate this aspect or assume that their designs will solve those problems also. And they may be right. Perhaps a large proportion of social problems do spring directly from physical annoyances --poor transportation, dirt and air pollution, lack of recreation facilities, inefficient communications, etc. The hypothesis has never been tested.

Yet the "tech-fixers" do not lack for critics. Nieburg (1969, p.211) described their plans as ". . . a vulgar, self-serving, and optimistic myth. . .," and Whyte (1968) devoted a chapter to the New Towns and why they are not and will not be successful. The major arguments (Ellul, 1954) are that technology will continue to be a force of its own and the needs of people will continue to be subservient to the desires of the technologists. "If it works, it's obsolete" is their by-word. Completely planned communities will be boring and uneventful. People will not enjoy living in them. And who will administer them? To test these queries the new field of technology assessment is developing and will be discussed in Chapter V.

Human Rights

The third approach to the development of a country is the provision of human rights or social justice before all else. This attitude is new and poorly defined; it may be a result of frustration with the failure of economic methods, or as Parmar (1970) argued, it may be a more basic human need than all but the most urgent of physiological necessities.

Economists, perhaps lead by Mishan (1967; Greene and Golden, 1971) are questioning the ability of economic growth and free enterprize to supply real choices, decent living conditions, ever-increasing standard of living, and the other components of a utopian life. Mishan argued for a more careful assessment of human needs and wants, and suggested that economic growth with its external diseconomies is not a useful goal.

Many people are becoming disenchanted with aspects of present life styles. Morris (1969) described anomalies in human behavior and identified possible causes of them such as high living densities, traffic and city noise, and enforced cycles and living patterns, to name a few. As these conditions and their causes receive publicity more and more people are questioning the way of life that has been designed for them. And as injustices to man are publicized, for example the presence and plight of the poor, there are the beginnings of a revolution of awareness and the questioning of ethics heretofore accepted. Taxation systems, income distributions, the causes of poverty, the purpose and mechanism of education, all are receiving scrutiny by people who are moved by the apparent unfairness of much of the system and the relative importance of human justice over material largess.

Reich (1970) believed that a change in human values is sweeping

through the younger U.S. generations that will result in a rejection of the materialistic life and will emphasize instead intrapersonal relations, introspection, the creative arts and learning. Nyerere (1968) discussed the importance of respect for human dignity, the sharing of resources, and work by all, exploitation by none, in the development of Tanzania.

Parmar's (1970) arguments are compelling and based in part on the empirical evidence that disenchantment and revolution occur even in the presence of an expanding economy. Many questions need be answered in this area, however. Do people constantly demand a higher and higher standard of living as Silberman (1966) suggested, or at some point do they become satisfied? Are the desires for material things innate or learned, perhaps through advertizing? Can social justice be obtained even with a low standard of living or must the two develop together?

This approach may be more applicable for underdeveloped countries, and may be difficult to apply in partially or highly developed countries where a proportion of the population has a high standard of living. Here a gradual change in ethics can occur but not at the immediate expense of material things and incomes to which many have grown accustomed.

Summary of Development Methods

Economic growth does not differentiate between method and objective. Growth and revenue are tacitly assumed to be the universal human wants and also to be auto-catalytic. A prosperous economy will generate an even more prosperous one. These uncritical assumptions occur even in Galbraith's (1964) chapter on the purpose of economic development and may

reflect the fact that economic growth is often organized by individuals with personal short-run desires and but few reasons to consider the source of the profits or the very long-run effects of the project.

The publication of two Canadian poverty reports (Adams, et al., 1971; Special Senate Committee on Poverty, 1971), the Kerner Report (Kerner, 1968) on civil disobedience, and other similar books, clearly indicate that countries with the highest GNP and standards of living as traditionally measured have not solved the problems of social equality and opportunity. Some authors (Adams, et al., 1971; Magdoff, 1969) have suggested that poverty and other forms of social injustice are the result of an economic climate that provides vast opportunities for the few who can take advantage of them.

As discrete methods neither social justice nor technical development are sufficient, but I suggest they complement each other. Social justice is less a method than a statement of objectives, and technical development is more a method than an objective. In the following sections I wish to distill these two methods into a model for community development, and to relate the growth of Hinton to this model. Many small towns will be developed around resource industries in the future and the type of communities that they become will be dependent upon the growth concepts employed. Thus the above discussion of developmental methods and the evolution of a community development model may be of assistance to planners of such prospective towns.

Community Development Model

The following section describes an approach to community development incorporating elements of the doctrines of social justice and technolog-

ical development, discussed above, and relating them to the psychological theory of operant conditioning. It leads to definitions of community and community development, and indicates important variables affecting human behavior.

Theoretical Background

Operant Conditioning

The operant conditioning model of behavior holds that organisms act for a variety of reasons, e.g., physiological needs, random actions, etc. For many actions there are environmental responses to the behavior. These may be only coincidentally perceived aspects of the environment or there may be actual cause and effect relationships. If a certain environmental response typically follows a certain action, it may positively or negatively reinforce that action, with the result that that particular behavior is more (or less) likely to occur again. If, by a certain action, an animal finds food when it is hungry, it is likely to repeat that action. Thus the environment shapes or modifies behavior by rewarding or punishing it.

An environmental reinforcer is a stimulus that reinforces. It cannot be predicted, but must be identified empirically. Often reinforcers reduce physical deprivation, e.g., hunger, and all are probably of a biological nature. Primary reinforcers may become paired with others (conditioned reinforcers). Thus, money, of itself useless, has become a strong stimulus (conditioned reinforcer) since it is associated with many of our primary requirements.

Skinner (1953, 1971) propounded the psychological theory of operant conditioning and has demonstrated its effects in experiment and example. By controlling aspects of the environment (supplying or removing rein-

forcers), he can quickly shape the behavior of a pigeon so that it will walk without bobbing its head, or he can train a rat to do complex manoeuvers and manipulations with objects in its cage. But his more urgent claim is that human behavior is likewise controlled or modified daily by the environment, and that we must recognize this force of the environment upon us and critically assess the types of behavior our environment is producing, and the types of behavior we think it should produce. We are not free to arbitrarily behave as we think we should behave, he states, but we must, within the limits of our scientific ability, design the types of environments that will subsequently make us behave in whatever manner we think desirable. Skinner has done much to improve our scientific ability through the elucidation of operant conditioning theory, understanding of reinforcement schedules, and many other aspects of behavior modification. Perhaps most importantly, he has reduced, somewhat at least, the stigma attached to terms such as behavior control and conditioning.

Operant conditioning techniques have proven useful in psychotherapy, in education, and in intrapersonal communication. Madsen and Madsen (1971) based their argument for the use of behavioral modification techniques in teaching on the conclusion that such modification occurred constantly, whether recognized or not, and they illustrated the effects of certain environmental factors (reinforcers) to encourage desired classroom behavior. Ginott's (1969) philosophy on child-raising and communicating with teenagers made use of developing an intrapersonal environment in which the child's behavior would not be negatively reinforced, i.e., the child always had a face-saving route, and the desired behavior was thus easy to develop.

Many studies have recognized that "the environment makes the man" and have centered on the more obvious and urgent physical effects of our environment. For example, health and sanitation codes, food and drug regulations, building codes, consumer product safety regulations, all have developed in an attempt to control our environments and provide a safer, higher standard of living. Nutrition research has indicated that malnutrition is associated with reduced mental development and, incidentally, supports the operant conditioning theory, as Latham (1971) concluded that mal- and under- nutrition acted to reduce activity and consequently to reduce the opportunity for learning experiences, with the result of lowered I.Q. measures. Schorr (1966) listed five diseases commonly associated with poor housing conditions, and Wheeler (1969, p. 217) stated: "Upper respiratory infections among women and children and psychoneurotic disorders among women have been found to be much more common in flat dwellers than in those living in houses."

Organism-environment interactions are often more subtle than direct physical reaction, however; there is a gradation of response through efficiency and productivity to attitudes and beliefs. All levels of this continuum affect the long-run survivability of the species, and it is the present thesis that the higher psychological levels are the most important if higher standards of living and evolutionary control are to be attained. In true Protestant ethic form, these levels are the most difficult to measure and to understand.

Poulton (1970) has collected the results of many recent studies showing the relationship between environmental factors such as vibration, noise, temperature, isolation, sleep disturbance, etc. and human response, both of a physical nature and of performance ability. For a number of

such factors limits can be identified that will ensure physical safety or affect performance. Poulton suggested that with more data pairs of environmental factors must be studied, and finally entire environments, since interactions among factors often occur.

Problems resulting from noise are perhaps better documented than others. Wheeler (1969) noted that unwanted noise caused annoyance, especially when interpreted as privacy invasion, and it could interfere with sleep, relaxation, and communication, thus resulting in stress. The pervasive effects of noise were well illustrated by Kryter (1970), and similar compendia are required for other environmental factors.

The effects of housing on behavior have also received some consideration. High density appartment living could result in social isolation and lack of privacy which could lead to tension and anxiety (Wheeler, 1969). Frustration, monotony, and perhaps loss of masculine identity were also suggested. Schoor (1966) stated: "...the evidence is overwhelming: extremely poor housing conditions perceptibly influence behavior and attitudes.", and Plant's (1930) research indicated that crowded living conditions could destroy a child's sense of individuality and illusions about adults. Many other examples are available to illustrate the harmful effects of poor housing conditions, yet few specific parameters and their effects are known.

There can be little doubt that behavior patterns and attitudes are largely shaped by the individual's environment. Proshansky, et al. (1970, p. 29) stated: "Human behavior in relation to a physical setting is enduring and consistent over time and situation; therefore, the characteristic patterns of behavior for that setting can be identified."; and Sivadon (1965, p. 418) wrote: "Personality can be viewed as a con-

tinuous process of integration of an individual history with situations constituted by the meeting in space of the organism with objects and persons."

The mechanism of behavioral modification by environmental factors best described by the Skinnerian model of operant conditioning, and this model can be tested only by experiment and analysis of environmental effects. More research on the behavior modifying factors is needed in order to allow rational design of our environment.

The importance of realizing the conditioning power of the environment has been illustrated by several studies. Lewis (1961) showed that poverty conditions could perpetuate themselves through the development of a peverty culture, and Fried and Gleicher (1961) found evidence that there was a strong attachment for slum conditions by people who had lived in them many years. This observation partially explained the many social difficulties attached to enforced slum clearance and resettling in new areas such as public housing. Similarly, Casasco (1969) believed that slum dwellers could become strongly attached to their homes and suffer severe relocation problems.

In summary, a rapidly growing awareness of the importance of understanding environmental effects both on man's physical well-being and on his behavior patterns is apparent. With Skinner's psychoanalytical theory at its base, a host of publications has recently appeared (see Mann and Hagevik, 1971, for a good review) relating environmental design to human efficiency (Poulton, 1970), stress (McGrath, 1970; Kryter, 1970), learning (Fatouros, 1968; Abidin, 1971), and others. This awareness will contribute much to the reduction of social and psychological problems stemming from urban renewal programs or public housing developments, and can supply a human component and

direction so sorely lacking to the proposals for new, technically-operated cities.

Reinforcement Schedules

Reinforcement must occur at certain frequencies if behavior is to be modified and directed. Many types of reinforcement schedules have been identified and studied (Skinner, 1953) and the parallels between laboratory experiments and social conditioning are apparent. In our present heterogeneous environment behavior is often randomly reinforced with resultant conflict and the production of superstitions and cynicisms. Glowing advertizements positively reinforce a person's desire to buy an object; the quality of the object often negatively reinforces his action. Society positively reinforces a person's desire to go to school; and negatively reinforces his action through the irrelevance of courses and lack of later employment. The head of a censorship board is sent to jail on a morals charge. The demands of profit motive contradict humanitarian teaching. The result of such contradictory reinforcement can be mental conflict for the inhabitants of such a society. Cognitive dissonance can result (Festinger, 1957). The central nervous system cannot stand conflict and must resolve it in some way or suffer physiological consequences such as ulcers, nervousness and other psychosomatic debilitations (Berlyne, 1960). Superstitions, cynical attitudes, outright denial of one component of the conflict, avoidance of the entire issue, perhaps through alcohol or "dropping out," are common ways of reducing such mental conflict.

In other aspects our environment has become quite homogeneous, especially with respect to living conditions, employment, transportation,

noise levels, etc. The urban environment, which presently affects some 75 percent of Canadians (Science Council of Canada, 1971), is remarkably uniform. Its effects on behavior were noted in a study of National Park users (Clark, et al., 1971) where researchers found that Washington State campers held similar objectives to those of the park wardens, i.e., desire to commune with nature, to teach their children about nature, etc., but, quite contrary to the wardens' beliefs, felt they were achieving their objectives in crowded, noisy campgrounds. They were complacent about the presence of motorcycles, loud tape cassette players and littering in the park, and this complacency was attributed to the urban environments which conditioned their behavior for the larger part of the year. A quiet, clean campground would now be a foreign, hostile environment for such people. This comparison points up the fact that environmentally-caused changes in our behavior are gradual, progressive, and easily unnoticed. They occur unaware except to those who maintain a much more diverse environment, either through travel, or vicariously through books and other communications.

Felt Needs

The Skinnerian model holds that a person is a product of his environment and can only evaluate his needs in terms of that environment. Detractors of this statement appear to ignore the fact that "environment" includes more than the immediate surroundings, and involves also news media, travel, literature, friends and acquaintenances, memories, and all other bits of information that impinge on the person. Individuals also have varying abilities to mentally synthesize parts of their environments and to create hypothetical situations.

To acquire a large and varied environment requires time, money and effort. To synthesize situations conceptually requires time, effort, and a certain mental ability, perhaps largely of a genetic nature. As a result, many people have rather limited appreciation of the world. Schorr (1966, p. 320) summarized this discussion: "Thus, one evaluates his surroundings far from objectively, and himself in terms of his surroundings." At Edson, Alberta, most men recruited for job training chose "welder" as they knew of few other forms of employment, and one chose "veterinarian" with no concept of the requirements (F. Belyea, pers. comm., 1972).

Postman and Weingartner (1969) recommended a revolution in teaching methods in which students are first given some knowledge of various environments, e.g., what it is to be a chemist. An assumption was that without an "environment", a student could not find the subject relevant to him, i.e., could not have a felt need, and thus could not be expected to fulfill that need by studying the subject.

It is almost heresy in Community Development work to say a person cannot know what he wants or what is best for him. Yet, although behavior modification designs are usually attributed to Skinner, Rogers (Rogers and Skinner, 1956) also appreciated the fact of, and importance of understanding, behavioral controls. He was concerned with who would do the controlling and for what aims, but accepted the evidence that a person's ability to have felt needs is largely a function of his past experiences and awareness of possibilities. Those with limited experiences have limited appreciation of their needs and desires.

This discussion of felt needs does not imply that certain uneducated or otherwise deprived people should simply have programs forced

upon them. But it does suggest that, as well as opinions, other means should be sought to help determine the desirability of a program. It follows from the logic of operant conditioning that programs should be in the hands of those who best appreciate the physical and behavioral effects that environments will have. Such decisions exist at every level of education and experience. How many college graduates, for example, are qualified to have a strong opinion on the SST debate? This problem requires, in part, interpretation of highly technical research data better left to physicists than to plebicite.

Books such as those of Packard (1957, 1960), Galbraith (1958, 1967), McLuhan (1964), Reich (1970) and Toffler (1970) have done much to expand the average citizen's concept of the environment and its effects upon him. Much research and writing is needed so that the public can be further informed, and perhaps each citizen will eventually be sufficiently knowledgeable to voice a considered opinion.

Community and Community Development

Many definitions of community exist. Most include certain physical boundaries; others focus on the attitudes or feelings of a group of people. Panzetta (1971) considered community an epiphenomenon, a response primarily to oppression but also to leadership, thus giving it a temporal dimension.

In the present model community is defined as the environment that shapes behavior. This environment includes all elements that affect man's behavior, from physical elements (e.g., nutrition), to social and psychological elements (people, noise, odors, education), and will extend to memories, dreams, past occurrences, and our conception of

possible future conditions. Each person's environment will necessarily be different. The criterion is whether or not a certain element affects, or ever has affected, or ever will affect, an individual, physically or behaviorally. By this definition community will have a probabilistic component derived from the various kinds and strengths of the reinforcers. Certain elements of the environment will have strong influence, others less, and still others very little influence. Thus geographic boundaries can delimit perhaps most of the environmental influences, but communications, travel, etc. will add a certain, and likely significant, influence.

It logically follows that community development is the design of environments that will produce the physical conditions and behavioral responses desired. In order to be successful, considerable research is needed that indicates the relationships of environmental elements to physical and behavioral responses.

Objectives

Objectives of community development must be clearly defined before successful communities can be developed. These objectives can be usefully stated in terms of human behavior rather than in terms of physical conditions or materials, and may remain relatively generalized and in the realm of ethics or attitudes rather than of specific behavior patterns. It is not the purpose of this thesis to suggest objectives, but examples of ones I favor are: significant inter-personal relationships, appreciation of knowledge and learning, an appreciation of health and sports, a love of nature and conservation. Skinner (1948) described the Good Life as consisting of good health, a minimum of unpleasant labor,

a chance to exercise talents and abilities, intimate and satisfying personal contacts, and relaxation and rest. Environmental factors can be designed to produce these and other ethics. Perhaps some will be mutually exclusive; others may prove to be of a relatively basic, genetically-controlled nature; and others may have dysfunctional ramifications. I feel, however, that certain such ethics can be chosen, that, if developed, would result in a highly acceptable and self-sustaining culture. I believe that such objectives should be instituted at the national or provincial level since many of the most significant of controlling factors (industrial incentive plans, communications, advertizing) are controlled by the parent governments.

As discussed above, many of our present environmental systems (e.g., competition, high value of money, advantage of short time preferences, etc.), conflict with certain other environmental components (the "golden rule", anti-racist education, appreciation of nature, etc.). We must agree, even regionally, on the most desirable ethics, and then apply methods of economic development, technical control, and other processes of production that will be functional and at the same time positively reinforce these ethics.

We must aim directly for the loftiest of ethical objectives through behavioral modification. It is a futile mistake to aim for less and hope that, as a result, greater successes will follow. Our society has always chosen the pragmatic secondary objectives, the conventional goals of Wynne-Edwards (1962): the higher employment rate, the oil discoveries, the aerospace contracts, the make-work programs. Higher objectives have not spun off, nor are they likely to. But if we identify and strive for the primary objectives, and if we recognize and utilize the force

of environmental reinforcement, success will be much more probable.

Methods

Standard of living components have two variables--their physical existence, and design features. Desire for more and better standard of living components is a measure of felt needs, and, as discussed above, is in turn a measure of experience and comparison with other people and other times. The fact that poverty is a relative concept was demonstrated by the recent rioting of poor and suppressed people in the U.S., largely as a consequence of mass media presentations of middle and upper class life styles (Kerner, 1968).

Thus the concept of a standard of living is a product of experience and the ability to mentally synthesize possible living conditions. An important method of community development is to assess the various standard of living components considered necessary for normal human development in a given culture and to work towards providing them. Many of these, such as education, sanitation, transportation systems, are virtually commonplace in North American society, and to be without them is to be isolated from the society.

The design of a component may be at least as important as its physical existence, for it is design that greatly contributes to behavioral modification. A very recent trend is the demand for the standard of living to be measured in terms of results rather than in terms of supply available. Jensen (1971) accused U.S. dental schools of having misdirected evaluation of their programs. Supplying more dentists is only part of the solution, he believed. Assessing service to the people is the ultimate measure of success; and in counterpart,

Austin (1971) described the importance of replacing "cybernetic model A" (medicine is a disease-based system; should collect vital statistics; etc.) with model B (measure deficiencies in service; measure access to to service; measure the effects of poverty; etc.). Silberman (1970) similarly identified a major problem in the public education system as being, not the lack of facilities, but the lack of efficient teaching techniques and attitudes.

I interpret these authors as demanding increased attention to design of standard of living components and as making a clear statement that the mere physical provision of the component is far from adequate. This, then, is the second and most difficult step of community development--the identification of environmental effects on behavior. Each standard of living component must be assessed, not only for its adequacy to fill its physical role, but more importantly, for its effects on the behavioral objectives, earlier defined. A school should be assessed by its production of appreciation for intellectual ability (if this is a behavioral objective), rather than in terms of its annual budget, number of students graduated, etc. A city should be assessed by its reduction of a certain disease (if low illness rates are an objective), rather than by its number of doctors, hospital budgets, etc.

The measurement of these behaviorally-defined results is very difficult. Perhaps the concept of safe minimum standards (Ciriacy-Wantrup, 1968) can be adapted to determine design efficiency. Safe minimum standards are the minimum levels, use rates, design patterns, etc. that still allow the objectives to be obtained. Ciriacy-Wantrup originally used the term with respect to the conservation or depletion of natural resources, e.g., the maximum rate of logging beyond which

irreversible forest destruction would occur, or the maximum concentration of oil wells beyond which oil wastage would occur. The concept has been used in legislation setting limits on environmental pollutants. Where exact data are lacking, e.g., the concentrations at which DDT becomes toxic to humans, a safe minimum standard can be set, e.g., .05 ppm, and as new information becomes available, this standard can be adjusted.

Safe minimum standards can also be used in the design of environments to modify behavior patterns, although data here are even less exact or plentiful than for the physical components of the environment. Some examples are the Canadian Code of Advertizing Standards that limits advertizing deemed harmful to impressionable children; film and literature censorship; legislation providing for park and play areas in urban settings; and others.

There may also be what Ciriacy-Wantrup described as critical zones in the design of environments. He used the term to refer to the level of resource use rate beyond which the resource would be irreparably damaged. For example, if a game population is reduced to a certain level it may not be able to reproduce, and will become extinct; or if logging exceeds a certain high rate, erosion may occur and destroy the entire stand. Similarly the concept may apply to environmental design in that there may be critical limits to the frequency of reinforcement required to maintain a certain behavior. The method of operant conditioning has been used with considerable success in the treatment of certain mental disorders and also in physiotherapy. In these treatments effective reinforcement schedules have been determined which will best ensure the desired behavior change. Environmental reinforcers must similarly be

available in certain proportions if their effects are to be observed. It is the role of community development research to determine the safe minimum reinforcement rates that will shape the desired behavior (or refrain from causing undesired behavior).

In summary, the methods of this community development model include the listing of all standard of living components deemed necessary for adequate living conditions, and then the provision of these components for the people. Design features of the various components will result in behavioral patterns of people and considerable experimentation is required in order to predict these results. The principle of safe minimum standards may be useful in determining effective designs. The ability to supply an adequate environment will depend in part upon the available resources, discussed in the following section.

Resource Inventory

This topic may be considered by some to be out of the realm of community development but resources are of such importance that they will influence almost any community developer's actions. Resources are the wealth of a country or community and are thus the ultimate sources of any projects in which the community developer may be involved. It is easy to become estranged from the country's resources and to believe that money for projects can be continually demanded of a government. This attitude achieves perspective when equated to the "cargo cult" wherein certain Pacific island natives steadfastly await the munificent return of U.S. cargo ships. An objective assessment of available resources is necessary and it would be a disservice to a group of people to suggest new projects or to encourage them to demand fin-

ancial support if the resources are unavailable.

Resources may be divided into materials such as metal, water, etc. that are relatively indestructable, and energy such as oil, coal, etc. which are usually valued for their ability to do work. Materials can be transferred from place to place and reused. Energy, on the other hand, is dissipated as it is used and is therefore not reuseable. Our present economic system does not clearly differentiate between the two, however, and we can regard dollars as a form of either energy or materials.

A very important aspect of energy systems is the positive feedback system that develops between life forms and energy sources. Both the rate of processes and the complexity of a system is a function of the energy available to it, and there is a close parallel, as Odum (1971) has shown, between natural ecosystem development and human economic and social system development. Tropical areas (large amounts of solar energy) have many species of plants and animals all highly specialized to utilize the available energy and to pass it gradually through the biotic hierarchy in small increments until it has been so degraded that it is no longer capable of sustaining life. This process occurs rapidly and forms a relatively stable system. A disease or storm that disrupts one species' activities has only minor effect on the system due to the large number of similar species and many interactions between them. Arctic areas (small amounts of solar energy) have few relatively unspecialized species and the energy passes slowly through the system but in large increments. Here unstable conditions exist. A disease in one species results in starvation of another since there are few "buffer" species.

A similar situation develops in human social systems. A large amount of energy (money) entering a system will result in the presence

of more people. Well-paid pulp mill workers soon attract grocers and doctors, and it is the potential energy in the form of salaries, and not the demand for food and pills, that brings them. This attraction of grocers and doctors will result in waste products (food, pills) that will improve the viability of other groups with lower energy requirements, just as the attraction of a new animal or plant will result in waste products which in turn allow the presence of lower life forms with lower energy requirements. A doctor or dentist requires large amounts of energy (money) to be available before he will move into the system, while others, e.g., barbers, require considerably less. Also, if sufficient energy is available, people tend to have more children, primitively because more will survive, and in the advanced society, because of conscious decisions. Thus the number of people in the system will tend to rise until energy becomes limiting. At this point each individual has available a subsistence amount of energy and the population is at the carrying capacity of the resources.

If there is sufficient input, a complex economic and social system will develop, and also the rate at which changes occur will increase. The entropy associated with energy exchanges (money transactions) will be low. Stability will increase and fewer enterprizes will fold after a brief start. Thus many people conclude that more inputs, large numbers of people, and more and more processes are desirable goals.

The first important point from this discussion is to recognize the parallel between the "natural" system and the social system in its response to energy. New energy (industry, capital) will result in a larger population, more complex interactions between individuals and groups, more stability over time, and more competition. But, as the

discussion of Human Rights (p. 15) indicated, many people are beginning to realize that this natural process resulting from increased inputs does not necessarily result in more energy per capita, equitable income distribution, a higher standard of living, community spirit, happiness, or other such attributes. For example, Gamble (1964, cited in Odum, 1971, p. 182) showed that although the production of oil in the U.S. between 1944 and 1960 had greatly increased, the per capita amount of oil and per capita incomes had not changed. Similarly, large industrial developments do not usually change the proportion of welfare recipients, and may even increase it. Considerable Canadian GNP increase has not significantly changed income distributions (Report of the Special Senate Committee on Poverty, 1971, p. 15 and 41).

The second important point is that this situation occurs in the "natural" system but it can be overridden by intellectual processes. The first step is to recognize it's importance, and the second is to identify the aspects that do not coincide with our objectives and to force controls upon them. This discussion of resource inventory thus suggests that great control and intelligence is required in the development and allocation of resources in order that primary objectives be realized. The discovery of energy sources such as oil have provided a higher standard of living only indirectly and probably temporarily. Similarly the allocation of manufacturing plants, unless carefully controlled, will provide only temportary increases in standard of living. The natural processes of population dynamics must be overridden to ensure that additional energy inputs result in real gains to the population. This requires careful design of the community environment, discussed in the next section.

Community Design

Community design is the willful structuring of towns and cities into environments that will produce the desired objectives. The exact political process that will accomplish this is beyond the present thesis; however I favor initiative by federal and provincial governments rather than by local municipal action. This structuring of urban areas requires knowledge of the needs of people, the effects of various environmental designs upon behavior, and the resources available. Traditionally it has been the role of competitive economics to allocate scarce resources among people, but the almost universal observation that too few people gain too much control of the resources leads one to question the efficacy of this approach. Other problems occur also, and serve as too-common traps to community development; several of these are briefly described below.

The previous section indicated how populations naturally increase in response to new energy supplies. This result is perhaps the single most important variable in the process of human development. It is such a common reaction than many have come to consider it an independent variable--a cause of growth in its own right, instead of the result of growth which it really is. Ricardo saw this with respect to laborers and stated that wages should be always controlled by competition so that the price of labor would be that "which is necessary to enable the labourers, one with another, to subsist and perpetuate their race, without either increase or diminution." (Sraffa, 1951). We no doubt would chose to differ with Ricardo's solution, but it is apparent that population control in some form is essential if resource use is to result in a higher standard of living. The supply of more and more

resources for more and more people is not a useful solution to community development problems. It is possible that the most needed research in this area is the analysis of economic systems to indicate the results of additional energy inputs.

Uncontrolled technology has been cited as one of the most severe causes of social problems (Commoner, 1971), and technology assessment is a fast-growing field of inquiry. The alarming growth of technology as a force of its own has been described by Ellul (1954) and Toffler (1970) among others, and many people are beginning to question the direction society is going under this influence. Technology often represents an immediate source of income for an area, however, and is eagerly sought without regard to the consequences. Even widely publicized needs for pollution controls may be ignored and "pollution havens" created, all for the promise of money and employment. Such problems represent traps to community development and considerable research is needed to foresee the ramifications of industrial development. Yet few studies have asked: precisely what effects, upon whom, and of what magnitude will result from a new factory? For example, who benefits and to what extent, from increased tourist trade? What psychological factors are involved? How deeply in the economy do effects spread?

Economic efficiency is a similar area deserving community development research. Efficiency may act to increase entropy in an economic system--that is, increase the increment size at which money moves through the system. This has the effect of making the system less complex but more efficient in terms of time and energy. But what are the effects throughout the community? Do unemployment, alienation, or feelings of

non-involvement increase? Who actually benefits from changes such as automation? These and similar questions need to be answered in the interests of community development. Garret Hardin (1963) wrote: "Whatever it is that we want to maximize, it cannot be efficiency. We can remain free only if we accept some waste." Efficiency in manufacturing processes may come at the expense of people's life styles and standard of living. We must identify the results of alternate economic methods and chose that which provides best for the citizens.

Thus, within the framework of controlled population and technology, community development research must proceed to determine optimum population sizes for given resources and resource technology. This is a difficult procedure and few prototype studies exist. The Science Council of Canada (1971, p. 28) however, called for such studies, recommending the use of systems analysis techniques to relate inputs available to human needs. Such data could encourage increased provincial and federal government involvement in urban planning and could result in controlled, purposeful industrial allocation to areas, greatly reducing risk of uncertainty and increasing the planners' scope and knowledge.

In summary, community design involves the organization of urban areas into functional environments. Three main problems that must be solved are: ways of controlling the population below carrying capacity of the resources; organizing an economic system that does not interfere with the objectives; and determining an optimum population size such that minimum constraints need be applied to the economic system.

Summary

A community development model has been suggested that differs from others such as that of Warren (1971) basically in the belief that many important aspects of the environment can be objectively evaluated. Warren's model was based upon the belief that there are very few, if any, objective truths and that all decisions must be compromises. In his view, community development depends upon subjective evaluation of a problem, discussion and compromise until some workable solution is found that is at least partially satisfactory to all.

In my opinion, considerably more control can be exercised and fewer constraints need be recognized. The model is as follows:

Behavior is considered the ultimate measure of a person or society. A description of desired behavior patterns is the most useful definition of a nation's objectives, and is much more functional than descriptions of materialistic objectives such as GNP. Such objectives should be clearly stated and made common knowledge.

Behavior is largely a product of an individual's environment, and is developed to a considerable extent by means of operant conditioning. The environment must be homogeneous with respect to its reinforcing power so that individuals can easily adapt to the environment. Many environmental factors can be controlled in order to directly affect behavior, and these include physical objects, other people, communications, ideas, memories, past and future occurrences, and many other aspcects of a person's environment.

Community can thus be functionally defined as that environment which achieves the behavioral objectives. The community is designed by providing the requirements of a standard of living to the best level allowed

by the available resources. Population size must be controlled so that optimum population size is maintained.

The process of community development thus includes:

1. Defining the objectives in terms of general behavior patterns.
2. Researching the reinforcement effects of environmental components for their ability to shape behavior to the desired objectives.
3. Assessing the available resources and estimating appropriate or optimum population sizes for the resources.
4. Supplying the environment that will produce the behavioral objectives.

CHAPTER III

HINTON: OBJECTIVES AND STANDARD OF LIVING COMPONENTS

This chapter discusses the development of a small town, Hinton, Alberta and compares its growth to the Community Development model described in Chapter II. The first parts of the model (objectives and components of a standard of living) are described as they apply to the town.

Objectives

Introduction

Factors affecting town development exist at several bureaucratic levels. Economic policies at the federal, provincial and municipal levels will influence the direction and rate of town growth as will demand in the world markets for locally produced manufactured goods. The local people themselves will influence the future town in various ways. Chapter II held that objectives should be stated clearly and published so that all could appreciate them. The above influences (government, market, etc.) may thus not be objectives *qua* objectives, but may be in fact spontaneous (or even random) occurrences which eventually have an effect. To be objectives they must be foreseen, understood, and deliberately instigated. An analysis of the Hinton situation indicates that there are relatively few specific objectives to guide the development of the town.

Federal Government

There are no specific objectives outlined by the federal govern-

ment with respect to town or city location or development. The establishment of a Ministry of State for Urban Affairs is a promising start that may eventually produce city development guidelines. However, such guidelines are now the sole responsibility of the local units themselves. The Canadian Federation of Mayors and Municipalities (1969, cited in Science Council of Canada, 1971, p. 14) stated:

> The municipalities continue to be charged with the responsibility for achieving a variety of goals in our society, but they are given neither the institutional ability, nor the legislative means, nor the policy directives, nor the taxing authority, nor the revenue needs to satisfactorily discharge these responsibilities.

The federal government does exercise influence, however, through economic actions. The Department of Regional Economic Expansion (DREE), through industrial incentive payments and regional zoning to define areas most in need of economic development, can determine the future growth of an area. For example, the Town of Hinton is virtually the direct product of industrial development, as are Grande Prairie and Grande Cache, Alberta. DREE has not published specific objectives of its financing programs, perhaps because it feels they are self-evident. Yet the effectiveness of DREE programs has recently been questioned by the Federal Treasury Board (Edmonton Journal, 28 June 1972), and changes in its policies and operation are expected under its new administration.

The Economic Council of Canada (Economic Council of Canada, 1971, Annual Report) was established to recommend policy and advise government programs that will lead to:

- full employment
- a high rate of economic growth
- reasonable price stability
- viable balance of payments
- equitable distribution of rising incomes.

Like DREE, the objectives are very general and do not necessarily apply to individual locales.

Provincial Government

Town government, development, and growth rates are not directly influenced by provincial governments except, as with the federal government, when industrial incentives are allocated, or when towns request technical assistance from the Provincial Planning Office. This office of the Department of Municipal Affairs carries out basic research on development activities to determine trends, assists regional planning commissions financially, reviews municipal by-laws. There are no doubt many innocuous economic and administrative influences operating which affect town development but as yet there are no openly publicized urban development objectives.

Municipal Government

Each municipality determines its own growth rate and direction. The Alberta Planning Act (1963) states that a municipal council may prepare a general plan for its town and that, if enacted, this plan must be revised every five years. Hinton has no generally published objectives but has engaged Makale, Holloway and Associates, Ltd., Edmonton, to provide a general town plan. This plan intends:

> to shape the future growth of the town for the next twenty years, to lay this foundation of growth of the town beyond the next two decades and to organize the development that we find at present, in order that the town and its citizens would achieve the maximum in functional efficiency of the various components of the town, the best possible living amenities and all that is to be achieved through the most economical use of land and capital expenditures. (Makale, Holloway and Assoc., 1967-68, p. iv).

The Hinton general plan and urban renewal scheme puts emphasis

upon the importance of attracting revenue and industry and upon continued industrial development to cause town growth. The plan is in no sense specific; rather it recommends certain zoning changes, developments, etc., always with the proviso of unforeseen industrial growth.

Summary

Almost all aspects of town planning are left to the municipalities themselves. They in turn largely rely upon attracting industry, tourism, and government spending in the hopes that these sources of revenue will result in adequate growth and standard of living.

Long-range objectives are not defined; and short-range objectives are concerned largely with increasing revenues, although urban renewal plans do attempt to improve living conditions somewhat. There is little concern for the individual *per se*, and virtually no consideration of behavioral effects of planning. Objectives, town plans, or progress are not openly publicized and do not become a personal ethic or goal at the individual level.

Living Standard Components

Introduction

In order to define a standard of living for people it is necessary to identify the components of a standard of living and to be able to measure or evaluate each one. Each component can vary in quality and quantity and can ideally be measured both with respect to its effects on human behavior and to its costs or other requirements. For some components criteria of quality have evolved; for others little is known of their importance; and still others are recognized as important

to human development, yet few good measures of their quality exist.

In this chapter some components of a standard of living are identified and standards that have evolved for them are discussed. The Town of Hinton is described with respect to these components but it should be stressed that this thesis is less a study of Hinton than it is an attempt to identify necessary standard of living components and to discuss criteria for their evaluation. Since in many cases criteria are poorly defined or non-existent, it is also an attempt to identify areas in need of social research.

The description of Hinton may indicate certain components that are slighted during the development of a town or perhaps components receiving unusual attention and assistance. Primarily, however the use of an actual town was in order to examine the economics of supplying certain components, the additional costs to improve components and the ability of local resources to pay for them.

Brief History

The town of Hinton (53° $25'$ N, 117° $34'$ W) is located on the Athabasca River in Alberta Census Division 14, 185 miles west of Edmonton on Highway 16. It originated as a trapping centre and became a small railroad townsite. Both coal and oil were discovered in the area but the town remained undeveloped until 1955 when North Western Pulp and Power Company leased 2900 square miles of timberland and developed the present pulp mill. A modern townsite has grown as a result of the mill. Subsequently several industries have developed, nearby coal mines are operating, and tourism is increasing.

Standard of Living Components -- Physical Characteristics

Employment

Standards.--The question of employment is not entirely clear. Some hold that a certain level of unemployment is necessary in a growing economy, while others regard it as a most basic social problem. Both Canadian and U.S. Governments have used the technique of allowing unemployment to rise in order to reduce inflation.

Adams et al. (1971, p. 128) recommended 3.5 percent maximum unemployment and much less if possible in order to reduce poverty. The Economic Council of Canada (1969) set a goal of 3 percent. Yet in recent years these ideals have been greatly exceeded. Canadian annual unemployment averages for 1969 and 1970 were 4.7 and 5.9 respectively (Special Senate Committee on Poverty, 1971, p. 44) and the U.S. rate was 5.9 percent in 1971. Such high levels are indications of an unbalanced economy, but a clear understanding of the causes of unemployment and an acceptable level of it is not yet available.

Hinton.--Actual figures are difficult to obtain and fluctuate widely over time. Both Mr. R. Ellis, Hinton Town Manager, and Mr. C. Johnson, Canada Manpower, Edson (pers. comm., 23 February 1972 and 16 February 1972, respectively) stated that unemployment was an insignificant problem in Hinton. Neither the Unemployment Insurance Commission (Edmonton) nor Statistics Canada would or could supply data as they are considered confidential at the sub-provincial level.

Discussion.--Many criteria of employment other than mere availability could be examined. Suitability, desirability, working conditions, feeling of accomplishment, salary, fringe benefits, etc., all contri-

bute significantly to a person's environment and help make him who he is. As the labor force is an integral part of the national economy, inadequate employment conditions provide one of the sharper paradoxes in our society. Industry and productivity are necessities for a high standard of living, yet the roles offered many workers commit them to a low standard of living, injury and even death. The ramifications of this topic put it far beyond the scope of this thesis, yet the all-encompassing role of employment with its powerful economic sanctions, its claim of one third of a person's hours, its control of people's behavior, physical condition, even geographical location, demands research.

Public Utilities

Standards.---No standards exist with respect to human need. A continuum of service can be described, however, and an area or situation rated on it. The continuum can be measured in terms of availability and quality of service and in terms of cost. Availability of most public utilities is generally taken for granted since they are so common, but some people do not have adequate supplies of water or power, and this lack is a clear indication of regional poverty. Where public utilities are available rigid standards exist with respect to design and safety features. Electrical and gas instalations are regulated by the Alberta Electrical Protection Act and by the Alberta Gas Protection Act. Provincial inspectors enforce these acts, thus ensuring a high degree of safety. Similarly water quality is monitored by the Alberta Department of Public Health.

A standard of living must always include the prices of services since certain utilities, although available, may be priced beyond the

means of some families. No standard price can be identified, but prices can be compared regionally to indicate relative costs of living. Table 1 indicates domestic rates in Edmonton.

Table 1

DOMESTIC PUBLIC UTILITY RATES PER MONTH, EDMONTON, 1971

Utility	Price
Electricity	1st 25 KWH $1.50 26 - 100 KWH @2¢/KWH over 100 KWH @1¢/KWH
Water	1 - 800 cu. ft. 40.7¢/100 cu. ft. 801 - 4000 cu. ft. 31.1 " 4001 - 7000 cu.ft. 24.4 "
Sewer	15¢/100 cu. ft. water used
Natural Gas	1 - 20 Therms $3.00 over 20 Therms @3.5¢/Therm

Hinton.--Electricity is supplied by Calgary Power, and natural gas by Northwestern Utilities Ltd. Water is provided by North Western Pulp and Power Co. from the Athabasca River and meets Provincial regulations. It is chlorinated and fluoridated. The sewage treatment facilities are also provided by NWP & PC and are sufficient to adequately service a town of double the present population. Monthly domestic rates are indicated in Table 2.

Table 2

DOMESTIC PUBLIC UTILITY RATES PER MONTH FOR HINTON, 1971[a]

Utility	Price
Electricity	1 - 20 KWH $2.60 21 - 300 KWH @1.5¢/KWH over 300 KWH @1.5¢/KWH
Water and Sewage	$5.00 flat rate
Natural Gas	1 - 20 Therms $3.00 over 20 Therms @6.9¢/Therm

[a]Alberta Bureau of Statistics, 1970.

Discussion.--Public utilities are readily available in Hinton, but costs are considerably higher than for Edmonton, as Table 3 indicates. As Alberta rates are less than in other areas of Canada and the U.S. this comparison is of questionable importance. Within Alberta, however, such a difference could contribute to a feeling of relative deprivation for those living in Hinton.

Transportation

Standards.--As with public utilities, no standards exist with respect to human need. Increasing costs and problems have recently lead to an awareness of the importance of transportation systems and the need for long range planning. Within urban areas air pollution, lack of parking space and crowded streets have resulted in a demand for rapid transit systems for moving people. Such systems are very expensive and few cities have efficient ones. Outside of urban areas the

Table 3

COMPARISON OF PUBLIC UTILITIES COSTS IN EDMONTON AND HINTON, BASED ON THE USE RATES OF A THREE BEDROOM BUNGALO IN EDMONTON, MAY 1971 TO APRIL 1972

Utility	Mean Use Rate per Month	Costs ($)	
		Edmonton	Hinton
Electricity	100 + 382 KWH or 20 + 447 KWH	3 + 382(.01) = 6.82	2.60 + 447(.015) = 9.30
Gas	20 + 160 Therms	3 + 160(.035) = 8.60	3 + 160(.069) = 14.04
Water	594 cu. ft.	5.94(.407) = 2.42	
Sewer	594 cu. ft. water	5.94(.15) = 0.89	
Water and Sewer			5.00
Totals		18.73/month 224.88/year	28.34/month 340.08/year

high cost of land and decreasing fossil fuel supplies indicate that railroad freight transportation is much more economical than that by air or highway (Commoner, 1971, p. 171), yet truck haulage has continually displaced railroad haulage in recent years. Research such as Commoner's and others' will eventually provide guidelines indicating the most ecological, economical and effective modes of transportation.

Hinton.--Following is a list of transportation facilities available in Hinton: Highway 16, Edmonton to Jasper
Gravel roads to Grande Cache and Luscar
Local roads, 10.8 miles paved, 9.9 miles gravel
CNR transcontinental

Sod air strip
Greyhound Bus Lines, daily
One taxi company, two cars.

Main roads are maintained in good condition by the Alberta Department of Highways which has a building with staff and equipment in Hinton.

Discussion.--Although Hinton is separated into two distinct areas, there are no local buses. With the prevalence of automobiles there may as yet be little demand for them; however the fact the East Hinton children make up the majority of the kindergarten classes may indicate a need.

It is difficult to suggest at what stage a growing town should contemplate rapid transit systems. Without such systems, however, automobile traffic will continue to influence development and the now well-known growth sequence from pleasant small town to crowded, polluted city core will occur. At that point transit design becomes difficult, and construction becomes very expensive. An alternative would be to plan for a city of 70 to 100,000 and develop transit right of ways as the town grows. Or, as Spilhaus (1968) advocated, national or provincial planning agencies should force the development of a town so that it erupts rather than grows. Thus long range planning and development of a full size city could be done efficiently and quickly. Whatever the method, transportation systems must be efficient. It appears that in slowly growing towns transit needs are slighted and the resulting larger cities have ineffective systems that are very expensive to improve.

Security

Standards.--There are no police standards or guidelines recognized in

Canada[1]. Each locality determines its own needs. Similarly, no specific standards have been developed in the U.S., with the exception of education and training requirements[2]. Most states have enacted minimum police training laws. Methods of determining police manpower needs, such as on the basis of the number and types of calls for service, have been suggested (Bristow, 1969; McLaren and Wilson, 1972), but the determination of police needs has proven to be a very difficult problem (Kakalik and Wildhorn, 1972) and is one of the areas to be addressed by the National Advisory Commission on Criminal Justice Standards and Goals, established in 1971 and scheduled for publication in 1973.

Canadian cities averaged approximately one policeman per 600 population in 1955; Edmonton's ratio in 1971 was 1:578 and this ratio is expected to be further reduced. The Edmonton police budget in 1971 was $20.05 per capita.

There are no rigid fire protection standards; however, the Canadian Underwriters' Association (1960) suggested many guidelines and measures of effectiveness. In addition, larger cities have passed by-laws based on the National Building Code, Canadian Electrical Code, Fire Prevention Code, and others that control building practices, handling of flammable materials, etc. The C.U.A. recommendations, however, are not enforced, except in that they may be used to set fire insurance rates for a community.

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[1]Letter from H.I.Moore, Superintendent of Administration, Edmonton Police Dept., 22 March 1972.

[2]Letter from International Association of Chiefs of Police, Inc., 11 Firstfield Rd., Gaithersburg, Maryland. 20760. 24 April 1972.

The Edmonton Fire Department follows the C.U.A. recommendations of 3/4 mile travel distance in high value areas and 1½ miles in other areas (Day, 1972).

Hinton.--Two R.C.M.P. officers are stationed in Hinton and assigned to the provincial highway and to rural areas. The 1971 per capita budget was $5.20 (excluding capital costs)(R.C.M.P., 1972). The Town of Hinton employs six policemen (1:866 population) and in 1971 budgeted $61,700, or $11.90 per capita.

Fire protection consists of a fire chief, 21 volunteers and two pump trucks. NWP & PC also maintains modern equipment. The 1971 budget was $12,370, or $2.38 per capita.

Discussion.--The problem of crime and juvenile delinquency appears to be increasing in most parts of North America. It is a very complex problem rooted in the very social fabric of a nation and springing from such diverse situations as unemployment, the feeling of relative poverty, inadequate educational facilities, general dissatisfaction with life, and many others. Thus the difficulty of identifying standards upon which to base police effectiveness is apparent. Measures such as the number of police or the annual budget for police departments are crude but may provide some guidelines until this area is researched in greater detail.

The Town of Hinton maintains approximately 2/3 the per capita number of police as does Edmonton and other large Canadian cities, and it allocated approximately ½ the per capita budget to police protection as did Edmonton. These figures exclude the R.C.M.P. contribution since federal and provincial police are also associated with the larger cities. There

is little reason to believe that police requirements vary linearly with population size, but the fact that many respondents to the opinion questionnaire (p. 69) indicated dissatisfaction with the local police department suggests that Hinton may need to allocate a larger budget to police security.

Fire protection appears to be adequate, and met with local approval.

Education

Standards.--(1) Schools. Neither the Alberta Department of Education (1972) nor the Alberta Teachers' Association (1972) have clearly defined measures of adequate educational facilities. Standards based on research with respect to educational efficiency do not exist. This may be due to the difficult nature of the research required; however, the recently published Worth Report (Commission on Educational Planning, 1972) demanded that guidelines for efficiency and productivity be established. In Alberta the following situation existed in 1971 (Table 4) but it is not the result of research and is not to be considered an ideal criterion.

Table 4

ALBERTA SCHOOL DATA, 1971

Teacher:pupil ratios of 1:25-26 are suggested
Annual budget, grades 1 to 12 = $800.00/student
Teachers: 62 percent with at least one university degree
School libraries hold 8 volumes per student

(2) Preschool. No regulations exist for kindergarten facilities in Alberta. Teachers are advised by the Alberta Department of Education

that classes should not exceed 25 students.

(3) Adult Education. Many forms of adult education could be described. I have selected public library facilities as a typical example. A more comprehensive study could consider extracurricular courses, radio and TV courses, public lectures and clubs, job training, and many others.

Guidelines for public libraries are set by the Canadian Library Association and the American Library Association. Following are several measures of library service (Table 5).

Table 5

RECOMMENDED LIBRARY FACILITIES

2-4 volumes per capita; at least 2 volumes per capita for cities of one million[a].
3 volumes per capita for populations of 6-10,000[b].
2.5 volumes per capita for populations of 10-35,000[b].
1-1.75 volumes per capita for populations over 35,000[b].
Minimum stock of 6,000 volumes[b].
1.5-2 volumes per capita for populations of 50-100,000[c].
1.75-2 volumes per capita for populations 100-200,000[c].
1.25-1.5 volumes per capita for populations over 200,000[c].
At least 16-17 professional and subprofessional librarians per 100,000 population[a].

[a]Minimum Library Standards for Public Library Systems, 1966.

[b]Standards for Planning for Public Libraries.

[c]Public Library Standards, 1967; Appendix to the Public Library Standard, 1969.

No guidelines exist on annual expenses or budgets for public libraries. Edmonton spent $6.13 per capita in 1971, while most large Canadian cities spent more (London, $9.33; Regina $6.50). Edmonton facilities are considered less than adequate but could be greatly improved with a budget of $6.60 per capita (Ross, 1972).

Hinton.--(1) Schools. Two elementary and one high school, administered by the Yellowhead School District #12, Edson, are located in Hinton. Table 6 gives some statistics.

Table 6

HINTON SCHOOL DATA, 1971

School		Students	Teachers	Ratio
Crescent Valley Elementary	(grades 1-6)	510	24	1:21.3
Mountain View Elementary	(grades 1-7)	608	28.5	1:21.3
Harry Colinge High	(grades 8-12)	579	30	1:19.3

Teachers: 71.4 percent with at least one university degree.
Annual budget: $866.00 per student.

The school and public library are combined with a total of about 18,000 volumes. The volumes are divided 50 percent as to content, with wide overlap. Thus, if 75 percent are considered "school books", the library holds 8 volumes per student, identical to Alberta schools in general.

(2) Preschool. Private kindergarten classes are held in Crescent Valley school. Two teachers give morning and afternoon classes which

draw about 20 children each. Tuition is $17.00 per month. In general, only valley children make use of this service since there is no transportation to the classes.

(3) Adult Education. Public library facilities are in the high school and are open two nights each week (total of 4 hours). As discussed above, there are 18,000 volumes of which 75 percent (13,500) may be considered "public library" volumes. Thus the public library may be said to hold 2.6 volumes per capita. The school board and the Town contribute equally to the library budget, thus it is not possible to calculate a per capita library budget.

Discussion.---Hinton schools appear to be at least as well developed as others in the province if budget, teacher:pupil ratios, teacher education, and library facilities are criteria. If the town continues to grow at the expected rate, a new high school will be needed within 1 to 3 years. Teacher turn-over has been high but this has been due to promotions rather than to dissatisfaction (Marshall, 1972).

The kindergarten facilities are less than adequate in terms of availability to all children. This reflects a general provincial malaise on the subject (Olsen, 1955) although the Alberta Government has recently mentioned the importance of preschool education. Hinton school principals showed little concern about the kindergarten and indeed knew little about it.

The library facilities appear comparatively adequate for the town although four hours service per week are not many.

Communications

Standards.--There are no standards or guidelines with regard to communications service (other than the possibility of limits being imposed on the number of radio or TV stations operating in an area).

Hinton.--Following is a list of communication media in Hinton:

TV: Channel 8 (relayed from CBC, Edmonton and received via antenna).
Channels 3 (CTV, Edmonton) and 5 (CBC, Edmonton) (received via cable, $6.00/month).

Radio: Edmonton: CFRN, CJCA, CHED, CKUA, CHX, CHFA.
Edson: CJYR
FM: one station included with TV cable.

Newspapers: Edmonton Journal (A.M. edition).
Hinton Herald Parklander (weekly).
Chinook (Hinton, weekly).

Alberta Government Telephones.

Canadian National Telegraph.

Teletype (CNR and NWP & PC).

Discussion.--Communications systems are widespread and readily available. Some people regret the inability to receive TV Channel 11, Edmonton; and some Edmonton AM stations are not clear without an aerial. There is a rumor of a newspaper merger: the Chinook is expected to buy out the Parklander. Quality of service is not expected to deteriorate.

The opinion questionnaire (p. 69) indicated some dissatisfaction with news media availability, especially among those recently moving to Hinton.

Recreation

Standards.--U.S. Government action has demonstrated awareness of the importance of physical education, health education, and recreation. The President's Council on Physical Fitness and publications such as the Outdoor Recreation Resources Report and Health Education (National Education Association, 1961) emphasized the need for recommendations and standards to be used as guidelines in recreation planning. Such standards have remained flexible and can be adapted to changing conditions, in part because it is difficult to accurately specify optimum conditions.

In the area of physical fitness, certain physiological measures of adequate conditions have been determined (Cooper, 1970); in the areas of leisure use, outdoor park design, green belts, etc., less accurate data exist. None-the-less recommendations have been suggested by the National Recreation Assoication, California Recreation Commission, (1956), and others.

Standards regarding size, location and development of school and public recreation areas have been proposed in order to make possible programs which serve the physical and recreational needs of people. A commonly accepted space standard is at least one acre of recreation and park area per 100 population. The National Recreation Association and National Park Service recommended more than one acre per 100 population. Large, densely populated areas (over 500,000) require one acre per 200 population, and perhaps one acre per 300 population for cities of one million. These estimates are apart from school recreation areas. These and other recommendations for a variety of city sizes and situations have been compiled by The Athletic Institute (1966).

With respect to parkland needs, Whyte (1968) cited the following recommendations:

10 ac./1000 population within a city

15 " " " in suburbs

65 " " " in State parks.

25 miles of hiking trails/50,000 population

25 miles of cycling trails/50,000 population

5 miles of horseback trails/50,000 population.

Whyte also cited some Wisconsin recreation standards as follows:

3.6 acres of water/fisherman

8 " " " /fishing boat

1 mile of stream, or 1/4 mile of river/fisherman

40 acres of water/waterskier.

In summary, a perhaps surprising amount of attention has been given to developing guidelines for recreational needs. As affluence increases, these guidelines may have to be adjusted to ensure supply of space and quality of the recreational environment.

Hinton.--There is a large amount of recreational area, park and playground maintained in Hinton. In addition, large areas of the NWP & PC forestry lease are available for outdoor recreation purpose (by provincial law), and several Provincial and National Parks and Wilderness Areas are within easy access.

Hinton has a highly developed recreation program organized by a Recreation Board of six and a full-time Recreation Director. Facilities include: large swimming pool (heated, summer only) that is free to the public; artificial ice arena with free skating except during organized

sports periods; a commercial curling rink (four sheets); nine-hole golf course. In addition the Hinton Minor Sports Association organizes many competitive sports. Although the demand for curling at times exceeds the facilities, recreational opportunities in Hinton are excellent.

Discussion.--In its wilderness setting, Hinton does not lack for outdoor recreational facilities. In addition the municipal government and other agencies provide a diverse program of sports and also many social and educational programs (see p. 66).

Goods and Services

Standards.--(1) Consumer Items. No minimum standards exist. Rather the available goods and services reflect the general economic level of the region. Prices and Price Indexes (Stastics Canada) indicates monthly trends and interregional comparisons of the prices of goods and services. This method could be useful; however, the published data refer to cities of over 30,000 population and cannot be validly compared with smaller centers.

(2) Health Services. Somewhat strangely, there are no standards in existence for health service apart from the licencing of practitioners and the inspection and approval of hospitals by the Alberta Hospital Services Commission (Giles, 1972; Decker, 1972; Legris, 1972). In addition, very well equipped hospitals may win accreditation by the Canadian Council of Hospital Accreditation. Some comparative data for health services are given in Table 7.

Table 7

HEALTH SERVICES, SELECTED DATA

Physicians	1:650-680 population	(Ontario, Alberta)
	1:465	(Edmonton)
G.P.	1:1,250	(Alberta)
Dentists	1:3,000	(Canada)
	1:1,700	(U.S.A.)
	1:1,300	(Sweden)
	1:750	(Canadian Armed Forces)
	1:2,800	(Alberta)
	1:1,820	(Edmonton)
Hospital Beds[a]	1:6,280	(Canada)
	1:8,480	(Alberta)

[a]Alberta Hospital Association, 1972. Brief presented to the Executive Council, Province of Alberta.

Hinton.--(1) Consumer Items. Most items and services appear to be available in Hinton; however there is no question that prices of most consumer items are higher in Hinton than in larger cities. Gasoline, for example, is about seven percent higher than in Edmonton. Some Hinton residents drive monthly to Edmonton to shop, even for food. The cost of domestic public utilities averages approximately $10.00 per month more than in Edmonton (p. 50), and the opinion questionnaire (p. 69) indicated a certain amount of dissatisfaction with local prices. As yet, however, there is no adequate interregional measure of prices or service for small towns.

(2) Health Service. Hinton has an accredited 27 bed hospital, three clinics, five doctors, four visiting medical specialists, and two dentists. The Edson Health Unit maintains a sub-office in Hinton and

provides a variety of services (immunization, pre- and post- natal care, health inspection, etc.). Table 8 summarizes Hinton health facilities.

Table 8

HINTON HEALTH FACILITIES, 1971

Doctors (full-time)	1:1,040 population
Nurses	1:473 "
Dentists	1:2,600 "
Hospital beds	1:193 "

The opinion questionnaire (p. 69) indicated satisfaction with health care with the exception of dental treatment which was considered inadequate.

Discussion.--The area of consumer service is a difficult one to assess objectively. The problem of measuring the availability of consumer items is further compounded by the difficulty of measuring quality, both of purchased items and of service. Large cities may have fresher food, larger stocks, more experienced repair men, all due to volume service. Such factors are a measure of standard of living, yet only very crude differences can be noted.

It is also difficult to suggest improvements or techniques to alleviate problems since service is largely allocated by market mechanisms which require in part a large capital input to the system. The shortage of dentists is no doubt due to the relatively poor market prospects in Hinton, although the national shortage is also a factor.

Possibly, too, the demand for dentists represents a backlog of poor service that may in time be corrected, as the per capita ratio is now lower than for Alberta in general. On the other hand, the per capita ratio of doctors is higher than for Alberta generally, although perhaps the visiting specialists alleviate the shortage sufficiently.

Standard of Living Components--Social Characteristics

This section considers some social characteristics that may be useful in defining a standard of living. Few standards or even guidelines have evolved for these characteristics and one must rely upon interregional comparisons, although this method too is subject to error. The ability to measure them is considered important in order to understand their effects upon life styles and social behavior. Discussion has been left to the end of the Chapter.

Population

Standards.--Ideal population densities are the subject of many recent books and reports. Studies based on artificially controlled animal populations (Morris, 1969; Calhoun, 1962; Weiss, 1972) have suggested that many social problems could be products of overcrowding. Galle, et al. (1972) found that five measures of social instability could be related to population density in Chicago, and showed that certain measures of density, e.g., persons per room, housing units per structure, were more significant than others, e.g., rooms per housing unit, structures per acre.

Howard (1969) used economic analyses to determine that per capita city costs in the U.S. increased rapidly with populations over 275,000. His review of the literature, however, revealed little consensus of

opinion with regard to desirable city size. He concluded that purely economic measures were less useful than were design efficiency, quality of service and other city life features for which, unfortunately, few adequate measures exist. Other authors have recommended city sizes of 50-100,000, and 500,000. Spilhaus (1968) limited his theoretical model city to 250,000.

Hinton.--Table 9 gives some population characteristics of Hinton.

Table 9

POPULATION CHARACTERISTICS OF HINTON, 1970[a]

Population: 5,200 (estimated)
Average family size: 3.7
Number of families: 1,405
Predicted growth rate: 8,000 by 1973

[a]Makale and Holloway Associates, 1968-1969. p. 14.

Planned expansion of the pulp mill was expected to bring Hinton to 8,000 by 1973. This expansion has been delayed and an increase of employment via a new mill-operated saw mill has been balanced by increased mechanization in the woodlands operation. As a result, growth has not been as fast as expected. Industry is still avidly sought by the local chamber of commerce and others, however, and growth will continue.

Social Organizations

Standards.--It is possible that guidelines could be obtained to indicate desirable levels of social organizations and social involvement. Such

measures would need to consider many factors such as age and income distributions, nationality, alternative activities, and others. Measures of citizen interests and involvement could be used to indicate social malaise, or, alternatively, a dormant desire for educational, social or recreational participation, and thus could guide planners and community developers. Possible measures of citizen interest and participation could be the numbers and kinds of associations that are formed, interest in local and national affairs, voter turn-out and others.

Hinton.--Hinton has 66 organized clubs (1:79 population) including lodges, service organizations, societies, associations, etc. This is undoubtedly a very low ratio, indicating a high degree of participation. Further, the bulk of the participants represents only about 2/5 of the town population (Casey, 1972). Thus the town appears over-programmed for its population.

In addition to the organized clubs, the Hinton Recreation Board organizes a large number of educational and recreational programs, including artistic painting, pottery, dance, various athletic skills, sewing and many others of this nature. Through a joint agreement with the Department of Education, the school rooms are available free at all times for these purposes, and participation is high. Only rarely is a fee charged.

Other possible indicators of citizen involvement and social concern are voting habits and newspaper subscriptions. In the Alberta Provincial Election, 30 August, 1971, the percent of voter turn-out was:

Alberta	71.89
Hinton (East)	65.5

Hinton (West) 56.6

Hinton (total) 61.9

Hinton turn-out was significantly less than that of Alberta ($t = 11.53$, $p < .001$), and Hinton (West) was significantly less than Hinton (East) ($t = 4.62$, $p < .001$) (Bailey, 1959, p. 35).

There are 800 regular Edmonton Journal subscribers in Hinton (15.2 percent of the total population) compared to 26.7 percent in Edmonton. Also 23.1 percent of Hinton population subscribes to the Hinton Herald Parklander which mainly carries rural regional information.

Social Functions

Standards.--Availability of commercial recreation and entertainment facilities is a function of economic opportunity rather than human need. Thus regional comparisons are the only available guidelines. Table 10 gives some indication of such facilities in Edmonton. In addition, there are many theaters, musical recitals, symphonies, and other forms of entertainment associated with larger cities.

Table 10

COMMERCIAL RECREATION AND ENTERTAINMENT FACILITIES IN EDMONTON, 1971[a]

Facility	Number	Ratio
Billiard parlors	23	1:19,800 population
Bowling alleys	16	1:28,500 "
Movie theaters	24	1:19,000 "
Curling rinks	20	1:22,800 "

[a]Edmonton Telephone Book.

A second consideration beyond mere availability is the complex question of quality. A discussion of standards must include this although measurement of quality is difficult. Since most entertainment is commercially operated, the fare is generally that which will yield the most money regardless of social consequences. Thus the single movie theater in Grande Cache ran three months of Westerns in 1971, and similar behavior is evident elsewhere. Even in Edmonton, movie-goers complain of the lack of family-type entertainment.

Cultural, documentary, educational and other categories of entertainment have, at least initially, small followings. It is probable that over time the public taste is developed by what is available, rather than by some instinct for a certain type. Thus in time people might be attracted to a variety of subject matter entertainment, but not unless they are readily available during an acculturation period. A wide choice should be available regardless of the economic opportunities involved.

Hinton.--Table 11 indicates the commercial recreation facilities in Hinton. In addition, the Recreation Board has brought a series of plays, symphonies, and opera to Hinton and although these have been rather poorly attended, there are plans to renew the programs. The opinion questionnaire indicated considerable satisfaction with available entertainment.

Table 11

HINTON COMMERCIAL ENTERTAINMENT

Facility	Number	Ratio
Billiard parlors	2	1:2,600 population
Bowling alleys	1	1:5,200 "
Movie theaters	2	1:2,600 "
Curling rinks	1	1:5,600 "

Felt Needs

Standards.--As discussed in Chapter II, it is an assumption of this thesis that a person's felt needs are a product of his past experiences much more than a product of some innate urge. Thus a person's attitude or belief regarding some topic will not necessarily agree with an objective evaluation of that topic but rather will reflect the person's previous experiences and knowledge. Felt needs can reflect satisfaction with life styles, however, and satisfaction may be a very important criterion for evaluating an overall standard of living.

Hinton.--Sample: 120 families were selected at random from the Hinton telephone directory. Twelve Hinton women involved in an ARDA project interviewed the housewives of these families and obtained their opinions on an attitude questionnaire of 21 items (Appendix A). A card listing age and income ranges was used to guide responses (Appendix B), and 71 useable questionnaires were returned.

Of approximately 1405 families in Hinton, 1200 have telephones. Thus 205 families were excluded from the sample. Housewives were

considered an appropriate sample because this method avoided sex and marital status variation, the questions were focused on attitudes toward general living conditions in Hinton rather than on specific aspects of employment or politics, and it is believed that the attitudes of the housewife significantly affect the general attitudes of the family and thus reflect a community feeling.

Analysis: Opinions were scored from 1 to 5, with 5 representing the most positive attitude toward life in Hinton. Pearson Product Moment correlations between items were obtained. In addition, t-tests were calculated for differences between groups who had lived in Hinton less than five years and more than four years (item 18).

Results: Opinion questionnaire scores are indicated in Table 12. The majority (13/17) of items indicated a positive attitude toward life in Hinton. Correlations between items indicated significant association ($p \leq .010$) between only three items: 13/21, 18/6, and 18/20. Those people earning the highest incomes were most satisfied with medical care; new-comers to Hinton considered job security to be somewhat tenuous; and, as expected, older people had lived in Hinton the longer time.

When the sample was arbitrarily divided into those living in Hinton less than five years and more than four years, more associations were noted (Appendix C). These are of uncertain importance, however. On only two items did the two groups differ significantly. Item 3 ($t = 2.32$, $p \leq .05$) and item 8 ($t = 2.36$, $p \leq .02$) indicated that those who had lived in Hinton less than five years were more dissatisfied with local stores and with availability of news than those who had lived there longer. This last analysis supports the assumption that a person tends in time

Table 12

OPINION QUESTIONNAIRE SCORES

Item	Mean[a]	Sample Size	Standard Deviation	Range
1. The cost of living in Hinton is about the same as in the larger cities.	2.85	71	1.09	1-3
2. I often want to go to the larger cities to buy things I can't get in Hinton.	2.65	71	1.17	1-5
3. There are plenty of good stores and repair shops in Hinton.	3.27	70	1.01	1-5
4. The working conditions at my job are satisfactory.	3.79	68	0.76	2-5
5. My job pays a decent salary.	3.85	68	0.63	2-5
6. Some people in Hinton are often afraid they will lose their jobs.	3.06	70	0.96	1-5
7. It is easy to have as many friends as you want in Hinton.	3.87	70	0.85	2-5
8. Some people in Hinton complain that it is hard to get enough news of the rest of the world.	3.82	71	0.72	2-5
9. There are always plenty of things to do in Hinton.	3.83	71	0.94	1-5
10. I am happy with the kinds of entertainment available in Hinton.	3.54	71	1.00	1-5
11. The schools in Hinton are not as good as they should be.	3.44	71	1.01	1-5
12. Some people think there should be more sports facilities in Hinton.	3.34	71	1.00	1-5
13. I think there should be more Doctors and Dentists in Hinton.	2.73	70	1.09	1-5
14. We are lucky in Hinton to have good Police and Fire protection.	3.17	71	1.03	1-5
15. Pollution in Hinton is a serious problem.	2.61	71	1.17	1-4

Table 12 cont'd

	Item	Mean[a]	Sample size	Standard Deviation	Range
16.	There are not enough good people to run for town council.	3.44	69	0.92	1-5
17.	The town council does a good job of governing Hinton.	3.21	68	0.91	1-4
18.	How long have you lived in Hinton?	9.78	69	7.58	1-51
19.	Where did you live before?	1.84[b]	57	0.96	1-3
20.	What is your age group?	3.09[c]	71	1.07	1-5
21.	What is your family income before taxes?	3.74[d]	66	0.98	2-6

[a]Score of 1 = strong dissatisfaction with respect to the item.
3 = uncertainty.
5 = strong satisfaction.

[b]Score of 1 = town of 10,000 population.
2 = town of 10-50,000 population.
3 = town of over 50,000 population.

[c]Score of 1 < 20 years.
2 = 20-29 years.
3 = 30-39 years.
4 = 40-49 years.
5 > 50 years.

[d]Score of 1 < $3,000/year.
2 = $3,000-5,999/year.
3 = $6,000-8,999/year.
4 = $9,000-11,999/year.
5 = $12,000-15,000/year.
6 > $15,000/year.

to become satisfied with various aspects of his environment and not to question it. This point is perhaps best emphasized with respect to attitudes toward the air pollution which is so noticible to the visitor. Although the over-all opinion was negative, it was not a critical point, and few people in personal communication expressed concern about it. They indicated, in fact, a very rapid adjustment to the strong smell, and questionnaire scores were not strongly associated (Pearson Product Moment r significant at $p \leqslant .100$) with the number of years lived in Hinton.

Summary

Hinton compares favorably with most existing standards, especially with respect to employment, fire protection, education facilities, recreation opportunities, and medical services. Services that appear to be under-supplied are public transportation, police service, and dental care. Communications of an educational nature, e.g., Edmonton TV Channel 11 or CKUA radio, are generally unavailable. In addition, public utilities, and consumer goods and services are available but at higher prices than in larger cities. Many residents of Hinton believe that a larger population and new industry will alleviate these problems. A larger population would also allow greater attendence at plays, symphonies and similar entertainment. Presently attendence is low, resulting in reduced enjoyment for those who do attend. Air and water pollution are not considered severe problems by Hinton residents although they may none-the-less be harmful, and no doubt have an adverse effect on tourist trade.

Although only vague guidelines exist to indicate appropriate levels

of certain social characteristics, Hinton appears to be relatively well organized, especially with respect to available clubs, associations, and educational-recreational programs. Further study may indicate, however, that a relatively small proportion of the population participates in these programs and that many others do not. The voter turn-out and newspaper subscriptions indicate less than maximum involvement, especially in the poorer West Hinton population.

The opinion questionnaire indicated satisfaction with local entertainment, and attempts to introduce more cultural material (opera, symphonies) have met with apathy, even among many teachers. A variety of material must be available, however, in order that people be able to make rational choices.

The importance of the opinion questionnaire has not been emphasized due to the belief that people will quickly adapt to a wide variety of environments and will not remain objective toward them. The high degree of satisfaction, even among relative new-comers, may indicate an environment that is easily adapted to, perhaps because of the efficient recreational and educational programming, the sharing and cooperating attitudes illustrated by the town-school relationship, the community involvement attitudes emphasized by the many free recreational facilities, and perhaps also because of the nature-oriented, uncrowded and unhurried small town environment.

In summary, a surprisingly small number of well-defined standards has been drafted for human needs. Even in fields such as education and health services, relatively little is known (or stated) regarding appropriate levels of service, methods of distribution, etc. And in most cases

the measures of adequate service that exist are of the numerical, supply aspect that has recently come under some criticism. As discussed in Chapter II, availability of a service, for example, numbers of doctors, teachers, etc., may not be a useful measure of the service's ability to function. More accurate measures would be described in terms of results. Thus only rough measures of town environment quality can be made as yet, and few indeed that relate to the behavioral or psychological effects on the inhabitants.

It seems somewhat strange that some standards are rigidly defined in terms of safety or material quality but not in terms of human need. Thus a family may not have access to electricity or water supplies and few agencies are concerned but if such services become available, a variety of federal, provincial and local codes come into effect to regulate quality and safety. More standards are needed to define adequate human needs in order that they can be supplied. Some of these are available, others could be stated if agencies would accept the responsibility, and still others, especially pertaining to social organization, are largely unknown. Research can elucidate many guidelines, however, and the information used to direct human behavior toward objectives.

CHAPTER IV

HINTON: RESOURCE ANALYSIS AND COMMUNITY DESIGN

Resource Analysis

Introduction

The Town of Hinton was largely the product of a pulp mill which utilized the foothills forest and the Athabasca River. More recently nearby coal beds have attracted attention and some of the miners live in Hinton. Other natural resources that have become profitable include the parklands, fish and wildlife which attract tourists. This attraction has increased with the development of the Yellowhead Highway and with the recreation boom and subsequent crowding in Jasper National Park. Some industry and government spending make up the remainder of the town's economic resources.

All the above result in an input of dollars that can be considered equivalent to energy inputs. The dollars allow the town to develop and to attract commercial enterprizes which increase the availability of goods and services. Some of the inputs come from outside Canada and can thus be considered more valuable inputs than others originating in Canada and which are merely transfers between individuals of the same country.

The following is a brief description of most sources of input to the town. An analysis of the human resources which contribute to the town's development are not discussed in detail, partially because I believe the economic resources have had considerably more influence, and because of time and space limitations.

North Western Pulp and Power Company

In 1957 a pulp mill owned jointly by St. Regis Paper Company, New York, and North Canada Oils, Ltd., and operated by St. Regis, began operation. Table 13 indicates some statistics of the mill. Recent expansions to include a stud mill will increase the employment by about 60 men. No further mechanization is envisaged in the operations. As mentioned, the town literally owes its existence to the mill. As recently as 1968 the mill accounted for 50 percent of the town costs and although this has now been reduced to 28 percent due to industrial growth Hinton was for a decade a single resource town.

Table 13

NORTH WESTERN PULP AND POWER COMPANY,
APPROXIMATE ECONOMIC STATISTICS, 1971

Timber lease area	2,900 sq. miles
Total investment	$85,000,000.00
Spending in Alberta	$12,500,000.00
Gross salaries	$6,500,000.00
Subcontracting	$2,300,000.00
Local spending	$200,000.00
Municipal tax	$380,000.00
Provincial lease	$352,000.00
Federal tax (not including corporate income tax)	$350,000.00
Employment	700 men
Pulp production	219,000 Tons
Pulp value	$30,000,000.00
Market	95 percent U.S.A.

Source: J. French, Comptroller. pers. comm., 21 April 1972. The Company refused to divulge the amount of total operating costs or corporate income tax.

Luscar, Ltd.

Coal mines have operated in the region throughout most of the century. Recently Cardinal River Coals, Ltd., have begun operations at Luscar (26 miles south of Hinton) as the agent for Luscar, Ltd. and Consolidation Coal Co. of Pittsburgh. In 1968 a 15-year contract for 1,000,000 tons per year worth over $200,000,000 was signed with Japanese steel companies. Approximately 114 miners commute daily from Hinton. The gross incomes of these 114 is approximately $1,240,000. (Luscar Sales, 1972).

Industry

There is as yet relatively little manufacturing or service industry in Hinton which brings in dollars from outside the immediate Hinton economy. Data are not easily obtained for these and thus will be ignored.

Tourism

Tourism is steadily becoming a major source of revenue to the town. It is also one of the most difficult to measure, and authorities (Ellis, 1972; Steele, 1972) would not hazard an estimate of annual input. Instead they pointed empirically to the commercial strip development in West Hinton where approximately 400 people are employed, and to drugstore sales which increase approximately one-third during summer months (Brady, 1972).

Government Agencies

As the town developed, government agencies became more involved and contributed money in the forms of salaries, local spending,

welfare payments and municipal grants (Table 14). These values do not necessarily represent the total costs to supply a service (or an enterprize), but rather refer only to the economic exchange taking place in Hinton.

Governments also distribute money into the community in the forms of unemployment insurance, Canada Pension, old age pension, workmen's compensation, veterans' pension, medicare payments, children's allowance, and others. Some of these are partially or wholly balanced by deductions from gross salaries. Data on these social payments are unavailable, and in many cases do not exist at the local level. (Letters were received between 20 March and 27 June 1972 from: Statistics Canada, Edmonton and Ottawa; Unemployment Insurance Commission, Edmonton; National Revenue and Taxation Office, Edmonton; Department of National Health and Welfare, Ottawa; and Department of Veterans' Affairs, Ottawa.)

Summary

Approximate annual inputs to the Hinton economic system are given in Table 15. This sum is the money which enters the town from without and which filters through the secondary economy, providing goods and services for the people. It can be considered the energy available to operate the system and the force which sets limits to the number and rates of town processes, at least when allocated by typical market mechanisms as it largely is.

Community Design

In Hinton, community design is a function of industrial development, economic opportunity, and town planning with respect to

Table 14

APPROXIMATE GOVERNMENT SPENDING AND REVENUES IN HINTON, 1971

Agency	Spending ($)			Revenue from Hinton ($)	Net Input ($)
	Salary	Expenses	Total		
R.C.M.P.	21,000	6,000	27,000	0	27,000
Post Office	57,250	7,500	64,750	59,000	5,150
Education	630,000	840,000	1,470,000	528,800	941,200
Forestry School	125,000	185,000	310,000	0	310,000
Lands and Forest	104,200	22,200	126,400	3,500	122,900
Hospital and Health Unit	295,600	2,500	298,100	32,000	266,100
Highways	70,000	8,500	78,500	0	78,500
Public Works	0	14,050	14,050	0	14,050
Alberta Liquor Control Board	21,750	11,600	33,350	513,700	-480,350
Welfare	77,200	0	77,200	0	77,200
Municipal Grants	0	217,600	217,600	0	217,600
Totals	1,402,000	1,314,950	2,716,950	1,137,600	1,579,350

Table 15

GROSS ECONOMIC INPUTS TO HINTON, 1971

Source		Amount
North Western Pulp and Power Company		
salaries		$6,500,000.
contracting		2,300,000
local expenses		200,000
municipal tax		380,000
Cardinal River Coal Company		
salaries		1,240,000
Government Spending		
salaries--provincial		1,323,750
--federal		78,250
local expenses--provincial		1,091,350
--federal		6,000
municipal grants--provincial		216,850
--federal		750
	Total	$13,336,950

industrial development and economic opportunity. This approach does not distinguish it from most towns but the effects are perhaps more apparent in Hinton, being as it is the product of a single industry. For example, the town was long since divided into two distinct areas, East and West, making future town planning difficult but no doubt yielding a profit for the land-owners of the time. Presently most new construction is occurring along Highway 16 in response to the tourist trade. And this does appear to be a rational approach, for, as mentioned earlier, the role of industry and other economic inputs in affecting the growth of Hinton connot be underrated. Mill expansion or mechanization directly affects the numbers of primary employees and

subsequently the numbers and/or standard of living of secondary employees. The entire town owes its existence to the pulp mill, and additional growth will require additional primary industry of some type. It is the control of such growth that is the concern of this thesis.

Planning, as discussed in Chapter III, is largely the responsibility of the municipal government. The Town Council has opted for a commercially-prepared general town plan to be renewed every five years. This plan attempts to estimate the future growth and to design a viable environment for that growth. It does this in gradual steps, rather than planning for a specific size of city. The plan refers largely to zoning areas for various housing densities, and for future industry that may come. There is little discussion of the various needs of people, as outlined in Chapter III; the attitude is that these will be taken care of, that they will follow from an increase in industrialization and other economic inputs.

All present planning is dependent upon the uncertain factor of growth; and growth in turn depends upon income, generally through industrial development. Thus, planning is largely left to chance, economic opportunities for industry, and the abilities of local groups such as the Chamber of Commerce to attract industry. The Industrial Development Branch of the Provincial Department of Industry and Tourism (Blake, 1972) works with local groups and administrations to assist their search for industry. A typical attitude in this respect was reflected in the comment that an airport was needed to attract money via visiting convention groups. When asked how it would be paid for the answer was: "Oh, the Federal Government; airports are a losing proposition." Thus at once is illustrated the forces in-

volved in community design, the reasons for it, the lack of appreciation for available resources, and an avaricious desire to be subsidized by other areas of the nation.

As discussed in Chapter II, there is evidence that this approach may result in a higher standard of living for some but that the majority of the population will be swept along with the growing town and generally will inherit its diseconomies. Considerable research is needed to overcome the attitudes that have developed regarding the importance of both industrial and population growth. A new emphasis on the use of the resources to directly assist the people is needed.

In the examination of Hinton's development it became apparent that many components of a good standard of living are adequately supplied. Further, the basic resources appeared to pay for the town operations, although the lack of tax data leave this unsubstantiated (Figure 1). The federal government claimed a net of $265,000. (excluding income taxes, both private and corporate) from its interactions with the town and mill. The Alberta Government, on the other hand, appeared to lose $2,279,950. per year but taxes on the salaries received throughout the Hinton economy no doubt more than balanced this. The development of a large pulp mill does not appear to have resulted in a subsidized town, but rather one which is paying its own way, at least with respect to the primary economic inputs and costs of services.

Two areas of missing data make it difficult to calculate optimum populations for Hinton, given its resources. These are the complex interactions of the secondary employment, and a complete knowledge of the value of the resources. If the maximum revenue is now being obtained from the resources, it would appear that secondary industry

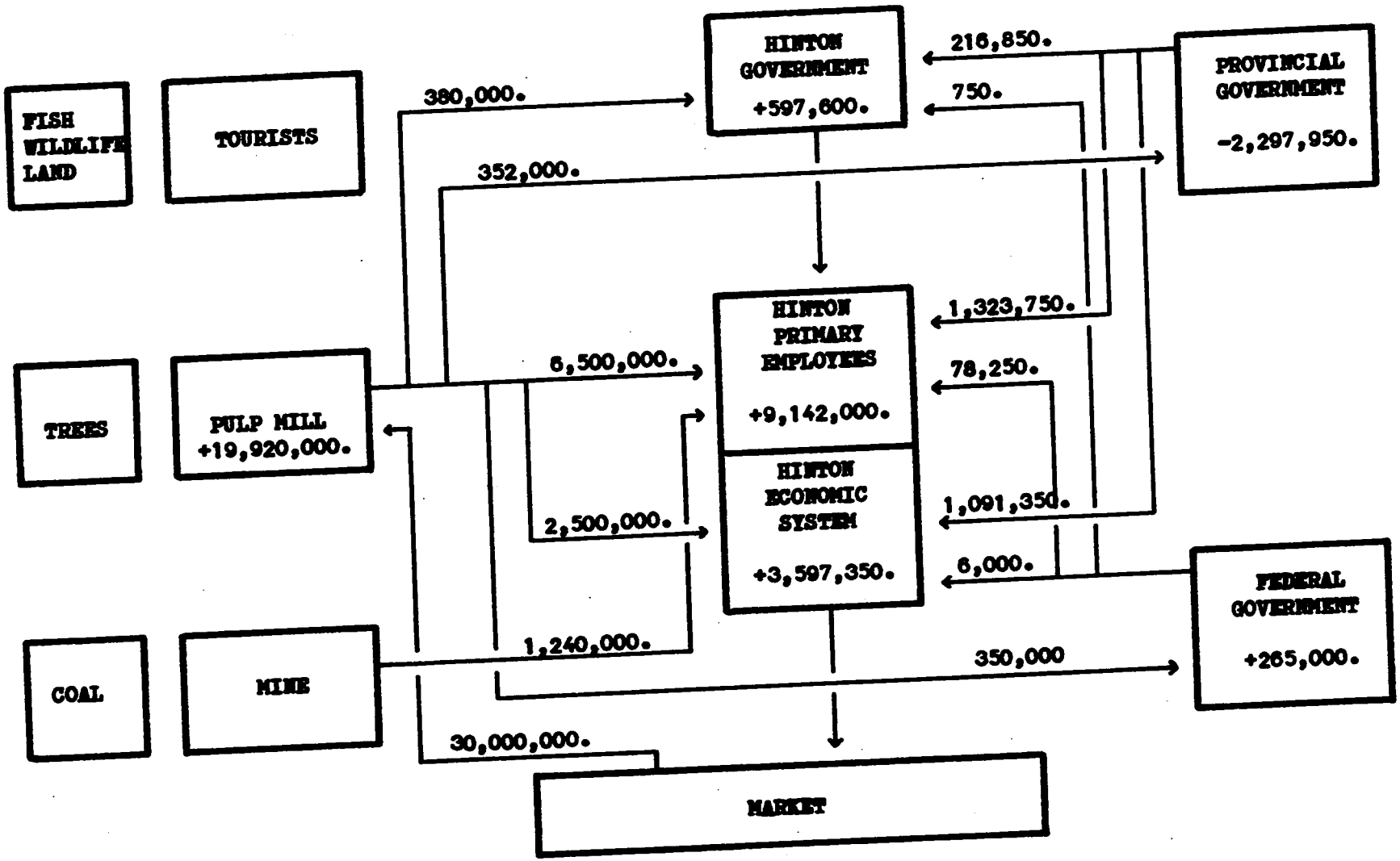

Figure 1. Generalized economic system, Hinton, 1971 (dollars).

cannot be adequately supported, and in fact the town is over-populated with respect to the resources. The standard of living is lower than it might be. Alternatively, some of the profits from the resources could be directed to subsidizing certain aspects of the secondary industry, e.g., grocery prices, thus increasing the standard of living. Calculations of alternate resource uses and allocations need be made to determine the optimum populations. An example is given in Chapter V.

CHAPTER V

DISCUSSION AND SUMMARY

Community Development Model and Town Development

Analysis of available resources suggested in the C.D. model is similar to that actually carried out by the town and by industry. In other areas, however, the town approach to growth and development differs considerably from the model. The most significant areas are in development and publication of objectives for town growth, and in the forces controlling growth and planning.

Clearly stated objectives are virtually lacking, and only general expectations are stated, usually in terms of population increases and industrial development. The forces that most control planning and development are the economic inputs now available and those that may be attracted in the future. All planning revolves around these largely unpredictable factors. The planning process is thus: attraction of industry, attraction of employees, increased economic input to the town, increased secondary industry and employment, increased government agency capabilities to serve the increased population. The process is almost entirely industrial growth-oriented, and only slightly people-oriented. Public requirements such as public transportation, or sufficient sewage treatment will be paid for somehow some (long) time after they are needed, or when demanded by provincial law since such changes seldom occur until a near-crisis situation arises. This present planning procedure is that of the typical town and will no doubt result in the typical city with its well-known social problems. A comparison of the model with typical town growth

is summarized in Table 16.

Recommended Research and Policy

Present town planning appears to have at least four areas that are unrepresented, misdirected, or that actually act as traps to ensure failure. These are clearly-defined objectives, discussed above; technology assessment; population controls; and parent government supports and controls. Several examples from Hinton follow.

Technology Assessment

Many problems in the relatively new field of technology assessment (Chapter II) are ripe for study and one in Hinton can be used as an illustration. Economic and technological efficiency appeared to result when mechanized means of logging were introduced. In recent years such mechanization has reduced the number of employees at NWP & PC by about 50 men, representing a saving to the company, and also allowing utilization of longer logs, more efficient hauling procedures, and fewer problems with labor. But it also resulted in revenue moving through the local economy in larger increments. Instead of many small pay cheques to local employees, there are now fewer large ones to large contracting companies. Much of this money may bypass Hinton entirely. Thus the Hinton economy has been simplified, made somewhat more unstable, and secondary employment has been decreased. The ramifications of this change throughout the local economy and on the local standard of living are complex and undoubtedly significant. Horse-logging, on the other hand, was somewhat less efficient from the mill point of view but resulted in lower entropy associated with the local economy and therefore allowed a higher level

Table 16

COMPARISON OF COMMUNITY DEVELOPMENT MODEL AND ACTUAL TOWN DEVELOPMENT

Item	Model	Town
Objectives	Clearly stated and available to all. Stated in human-centered terms. Stated in behavioral terms. e.g., encouragement of high intra-personal communication.	Not clearly stated if at all. Not known by many people in town. Stated in terms of population size or industrial growth. e.g., "We gotta get an airport in here."
Standard of Living Components	Identify objective standards wherever possible regarding human needs. Standards to be defined in terms of physical factors and psychological effects. Standards to be measured in terms of results rather than availability, e.g., amount of dental service required per capita. Assess costs to adequately provide for town of various sizes.	Standards rarely available, and only measured in terms of availability, e.g., number of dentists per capita. Most services determined by market mechanism rather than by objective human need. Many needs evaluated subjectively and supplied only if sufficient numbers of people demand them.
Resource Analysis	Identify resources available and revenue accruing from them. Evaluate alternate uses and use rates with respect to long term support for town or area.	Resources and revenue determined usually by corporations which do not reveal the data. Use and use rates usually those that yield the most corporate profit.

Table 16 cont'd

Item	Model	Town
Community Design	Determine optimum population that could be supported by resources. Limit town population to this level. Use federal and provincial controls to allocate resources so that town is supplied with high standard of living and so that objectives may be achieved. Resource revenue may be used to supply or subsidize secondary services directly if secondary industry is insufficient. Attain steady state relationship between resource use-economic inputs and social functions.	Availability of resources and industry highly uncertain but constantly sought. No population control suggested or wanted. Municipality is largely autonomous with respect to planning. Strong belief that more inputs will result in overall higher standard of living via secondary industry. Steady state economy equated to depression. Competition between towns high.

of secondary employment.

This discussion is not a plea for reduced mechanization and a "return to the land" attitude, but it is a suggestion that the role industry plays in supporting a local economy needs to be assessed. Many problems are involved: perhaps men really do not enjoy horse-logging, perhaps their children would reject it as a desirable form of employment; perhaps the difference in effects on the local economy is not significant; perhaps if the added revenue resulting from efficiency of mechanization remained in the Hinton economy it would develop additional work circuits and thus provide an even more complex and satisfactory economic web. These and many other questions need be answered and alternative systems examined in order to chose the one(s) which will supply an acceptable standard of living on a continuing basis. This is only one example of technological assessment that is relevant to Community Development but it represents the type of research needed.

Optimum Population Calculations

As discussed earlier, populations tend to increase to the limits of the resources, with concomitant drop in over-all standard of living. It is reasonable to assume that for a given resource base and given technology there exists an optimum population range within which standard of living is high with respect to a large proportion of human requirements. This population range may fluctuate somewhat and the variables controlling it (perhaps world markets for local products, yield rates of local resources, social norms regarding desired living densities, and others) should be identified. It is assumed that such

variation is regional and relatively small.

These calculations are a most important facet of community development research, and it is an objective of this thesis, not to calculate optimum populations for the Hinton area, but rather to discuss the need for such calculations and to indicate a general approach to them.

The costs of supplying an adequate standard of living to a number of people could be derived de novo starting with the requirements as listed in Chapter III. It may prove easier, however, to use existing town data and add requirements which are lacking or in less-than-adequate supply. Thus, Hinton Municipal expenditures for 1971 were $1,135,000. In addition government services required a net input of approximately $1,579,350 (Table 14). Thus primary spending to supply services to 5,200 residents of Hinton was about $2,714,350. This money (and considerably more, Table 15) entered the Hinton economy and filtered through the secondary employees, concurrently providing consumer items and service. Analysis of this aspect of the economy is beyond the scope of this thesis but it is suggested that it is insufficient to supply human requirements through usual market procedures.

As Chapter III illustrated, the present town maintains a relatively high standard of living for most of its inhabitants. However, some services are lacking or in short supply, and many prices are high compared to larger centers. The revenue required to supply these missing components of an adequate standard of living may be roughly estimated for sake of example (Table 17).

If only those who used the added services paid for them, a very

Table 17

ESTIMATED COSTS OF NEEDED FACILITIES IN HINTON

Facility	Cost
one dentist	$30,000
one policeman	10,000
additional library facilities and service	5,000
bus facilities	25,000
food price subsidy[a]	147,500
Total	$217,500

[a]To adjust food prices to those of Edmonton: Assume: 1405 families @ $125/month for food = $2,107,500/year; present mean food price 7 percent higher than in Edmonton.

large increase in primary inputs would be required. However, if each service were treated as a public utility, and paid for by additional taxes, then only the required amount need be forthcoming. In many cases (such as Police, library and bus facilities) the services are typically public utilities. These is no reason why others must be left to market demand which requires large increases in input in order for them to be provided. Thus an increase in revenue from the basic resources of $217,500 per year could greatly increase the general standard of living in the town.

The above statement would no doubt make a mayor chuckle in agreement but it is my contention that such subsidies are a primary requirement of a town and that they should be included in an analysis of town costs. There need be no penalty for living in a small town,

and control of the economic inputs can be exercised to provide a high standard of living if it is desired.

The resources described in Chapter IV were not totally assessed since private corporations are not required to release information regarding profits, taxes, operating costs, or indeed, very much economic data of any kind. As a result it is difficult to calculate the actual value of the resource. Pulp value is presently about $30,000,000. per year in addition to certain investment income (Table 13), while approximate operating costs in Alberta are $13,000,000. It is safe to assume that considerable profit is returned to the parent company. Thus the sum indicated in Table 15 is a minimum figure.

In the present case, given the resources and the technology of using them (including the procedures of foreign ownership, undisclosed profits, mechanization, etc.) it would appear that the town is now at, or somewhat above, the carrying capacity. A modestly high standard of living is available, and more people, or fewer resources, would result in its drop. Secondary industry which provides needed services is somewhat less than desirable and it is debatable whether the money entering the economy from primary sources is sufficient to adequately maintain the secondary industry. As discussed above, the resources could perhaps directly subsidize some areas of this industry in order to increase the standard of living.

Resource Allocation Controls

The above calculations yield, strictly speaking, the carrying capacity and not necessarily the optimum population. Economies of scale will operate to make certain procedures more efficient at certain

levels of functioning. For example, consumer items could be transported to Hinton in optimum quantities; a dentist can treat a certain population without being bored or over-worked; learning is facilitated in certain size schools. Thus it may be that although the present industry can adequately support 5,000 population, many town processes would be more efficient if there were 8,000 or perhaps 75,000 people. Such calculations could be simulated by computer, as several research centres are presently attempting, and could provide a government with additional reasons to control the industrial growth of a province by forcing certain locations to become controlled growth centres. There is presently a desire, and a feeble attempt, to develop a 100 mile grid of such centres in Alberta. If sufficient evidence were presented to illustrate the existence of optimum populations, perhaps governments would become more active in regional planning and many of the common problems associated with stagnating areas or with city growth could be reduced. In essence, pulp mills and other industries could be used as community development agents to supply people with their needs directly rather than as spin-offs from a purely economic system.

Summary

Originally Hinton grew in response to the pulp mill and the economic revenue from it. This has changed and the mill no longer greatly controls the town development and no longer contributes the majority of the town income. Planning responsibilities have passed to the town council and to the citizens. The mill does, however, attract educated people to the town and these regularly sit on the town council.

Although the town has grown largely in response to economic opportunities, some planning has occurred. An analysis of Hinton indicated it is at present a relatively pleasant town with a good standard of living for many of its residents. There are public housing units, pleasant suburban areas, attempts to improve trailer court slums, highly developed recreational facilities and programming, etc. A variety of free or nominal services and educational and recreational facilities reduce feelings of relative deprivation and increase a community spirit. Certain public services (higher education, hospital, sewage treatment) are quite sufficient for the town.

The ability of primary economic inputs to maintain an adequate secondary industry (stores, local business) however, is questionable. It is in this sector that the major problems, e.g., high prices, exist. Although additional economic inputs may reduce some of these problems, others will arise and it is of primary concern how future planning will solve them.

There appears to be in Hinton little appreciation for the typical results of increased industrial growth, that is, increased population growth which will erode most of the standard of living gains. There is an undue reverence for the skills of the "invisible hand" to redistribute revenues from additional economic inputs. And there is a certain naive and sedulous faith in a cargo cult that will bring federal projects to the town. It is these attitudes which have in the past produced the now-urgent urban crises and which will continue to produce urban sprawl, increasing welfare roles, inefficient transportation systems, crime and pollution which typify most larger cities.

The main argument of this thesis has been that, if uncontrolled,

additional economic inputs will not likely result in an increased overall standard of living and will not avoid typical urban problems; that a useful approach to town development would be to identify the needs, both physical and social, of people, determine their costs, and provide them for a specified number of people; and that resources should not be considered the raison d'etre of a town but rather the energy that provides the people with a high standard of living. This community development model requires a knowledge of the available resources and the optimum population range that can be supported by them. It presupposes considerable influence from both federal and provincial government planning agencies.

Perhaps two quotes best describe the antithesis of this apporach: "The function of resource towns, old and new, is to produce and often process resources." (Shaw, 1970, p. xvii), and "There are no standards of appropriate dental care, as the amount of dental treatment increases as the public become increasingly dental conscious." (Decker, 1972). Both comments might be considered true, but it is the conceptual framework that is taken and the ramifications of this way of thinking which are of concern. They emphasize the human tragedy and do nothing to alleviate it. Instead they perpetuate the concept of man as slave and victim of his environment. But man need not be a slave; towns can have more important functions than the production of aluminum; and dental standards need not await public awareness. We can define most of the components of a high standard of living without much public sanction. Dentists are the ones to suggest appropriate care; recreation directors can best guide town programming; and engineers can best design efficient

transit systems. By objectively approaching community development from the point of view of people's needs in a relatively stable town size and using the available resources to supply those needs, community development will be achieved.

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APPENDICES

APPENDIX A

OPINION QUESTIONNAIRE

Satisfaction With Life in Hinton

For use in a thesis for the Community Development Program, Univ. Alberta, by J.M. Harvey. February, 1972.

		STRONGLY AGREE	AGREE	UNCERTAIN	DISAGREE	STRONGLY DISAGREE
1.	The cost of living in Hinton is about the same as in larger cities.	SA	A	?	D	SD
2.	I often want to go to the larger cities to buy things I can't get in Hinton.	SA	A	?	D	SD
3.	There are plenty of good stores and repair shops in Hinton.	SA	A	?	D	SD
[4 and 5 to be answered by the housewife but refer to the main wage-earner in the family.]						
4.	The working conditions at my job are satisfactory.	SA	A	?	D	SD
5.	My job pays a decent salary.	SA	A	?	D	SD
6.	Some people in Hinton are often afraid they will lose their jobs.	SA	A	?	D	SD
7.	It is easy to have as many friends as you want in Hinton.	SA	A	?	D	SD
8.	Some people in Hinton complain that it is hard to get enough news of the rest of the world.	SA	A	?	D	SD
9.	There are always plenty of things to do in Hinton.	SA	A	?	D	SD
10.	I am happy with the kinds of entertainment available in Hinton.	SA	A	?	D	SD

APPENDIX A cont'd

11.	The schools in Hinton are not as good as they should be.	SA	A	?	D	SD
12.	Some people think there should be more sports facilities in Hinton.	SA	A	?	D	SD
13.	I think there should be more Doctors and Dentists in Hinton.	SA	A	?	D	SD
14.	We are lucky to have good Police and Fire protection in Hinton.	SA	A	?	D	SD
15.	Pollution in Hinton is a serious problem.	SA	A	?	D	SD
16.	There are not enough good people to to run for town council.	SA	A	?	D	SD
17.	The town council does a good job of governing Hinton.	SA	A	?	D	SD

18. How long have you lived in Hinton? _____years.

19. Where did you live before? _____

20. What is your age group? A B C D E

21. What is your family income range before taxes? A B C D E F

APPENDIX B

RESPONSE GUIDE CARDS

FAMILY INCOME		
	Yearly	Weekly
A —	under $3,000	under $58
B —	3,000 - 5,999	58 - 115
C —	6,000 - 8,999	116 - 172
D —	9,000 - 11,999	173 - 231
E —	12,000 - 15,000	232 - 290
F —	over 15,000	over 290

YOUR AGE
A — under 20
B — 20 - 29
C — 30 - 39
D — 40 - 49
E — 50 & over

STRONGLY AGREE	AGREE	UNCERTAIN	DISAGREE	STRONGLY DISAGREE

APPENDIX C

OPINION QUESTIONNAIRE CORRELATIONS

A. Opinion questionnaire items that were significantly correlated (Pearson Product Moment, $p \leq .010$); |Variable 18 < 5 years| :

4/8	8/4	10/4
4/9	8/9	10/8
4/10	8/10	10/9
	8/17	10/17

B. Opinion questionnaire items that were significantly correlated (Pearson Product Moment, $p \leq .010$); |Variable 18 > 4 years| :

3/2	5/17	6/18	21/11
3/4			21/13

C. Opinion questionnaire items that were not significantly correlated (Pearson Product Moment, $p \geq .450$); |Variable 18 < 5 years| :

4/7	5/3	15/9	20/21
4/12	5/6	15/18	
4/19	5/11	15/20	
	5/17	15/21	
	5/18		